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City of Monroe

BENTON COUNTY, OREGON

System Development Charges

Methodology

January 2020



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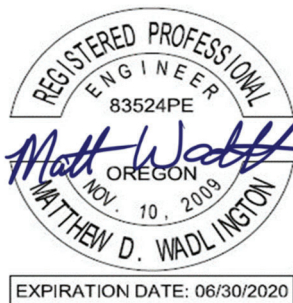


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1 EXECUTIVE SUMMARY

1.1 Background

In 2019, the City of Monroe authorized Civil West Engineering Services to update the City's system development charge (SDC) methodology for the various public infrastructure components in the City. This methodology will replace the City's existing SDC Program. Providing new infrastructure capacity is necessary to accommodate the expected development, and revisions to the City's SDC program are critical for ensuring that new users of City infrastructure pay for an equitable portion.

Recent planning documents for the City's water, wastewater, storm water, transportation, and parks infrastructure were available for use during the development of this methodology. For each infrastructure system, a technical memorandum providing a comprehensive Capital Improvement Project (CIP) List was prepared. These technical memoranda were used to establish the projects and costs used for the SDC calculations contained in this methodology and are included in Appendix A.

This methodology was prepared to present and summarize the methods and systems that have been used to establish public infrastructure SDC's for the City of Monroe. The SDC methodologies and calculations presented herein are consistent with the framework set forth by the Oregon SDC legislation contained within Oregon Revised Statutes (ORS) 223.297 to ORS 223.314.

1.2 Overview of SDC Methodology

Each of the five infrastructure sectors was analyzed in this methodology and recommendations were prepared for an appropriate and defensible SDC for each. A summary of that effort is provided below.

1.2.1 Water System SDC

The methodology used to establish the Water System SDC is based on the 2019 Water Master Plan prepared by Civil West Engineering Services. Based on an analysis of anticipated project

costs and the percentage of the project that accommodated growth, a total SDC eligible project cost has been established.

Population estimates and the City's projected growth rates were used to determine the future number of EDU's that will require additional capacity in the system. The Water System SDC was established by dividing the SDC eligible project costs by the total projected growth in the system. Credits were also calculated to eliminate the potential for double charges that could result from a new user paying both increased user fees in support of a loan to construct new facilities in addition to paying SDC fees for the same facility.

A summary of the SDC methodology for the water system is provided in Table 1-1. The Water System SDC methodology is discussed in detail in Section 3.

TABLE 1-1: WATER SYSTEM SDC SUMMARY

SDC Component	SDC Amount
Improvement Fee (per EDU)	\$4,802
Reimbursement Fee (per EDU)	\$0
Subtotal of Water System SDC Fees (per EDU)	\$4,802
SDC Credit Summary	
Upper Range Credit (100% Financing)	\$775
Mid Range Credit (75% Financing Credit)	\$581
Mid Range Credit (50% Financing Credit)	\$387
Low Range Credit (25% Financing Credit)	\$194

1.2.2 Wastewater System SDC

The methodology used to establish the Wastewater System SDC relies on capital improvement projects identified in the City's 2016 Wastewater Master Plan (Civil West Engineering Services, Inc., Updated in 2019) and the 1999 Evaluation of Wastewater Collection System (Southwood Engineering). The projects in the Wastewater System CIP List have been analyzed to determine the percentage of the project that is dedicated to providing capacity for growth. Based on the analysis, a total SDC eligible project cost was established.

Population estimates and projected growth rates were used to establish the projected or future EDU's that will require additional capacity in the system. The SDC was then calculated by dividing the eligible project costs by the estimated growth potential for the City's wastewater system. Credits were calculated to eliminate the potential for double charges that could result

from a new user paying both increased user fees in support of a loan to construct new facilities in addition to paying SDC fees for the same facility.

A summary of the Wastewater System SDC is provided in Table 1-2. Detailed information on the Wastewater System SDC for Monroe is provided in Section 4 of this methodology.

TABLE 1-2: WASTEWATER SYSTEM SDC SUMMARY

SDC Component	SDC Amount
Improvement Fee (per EDU)	\$9,033
Reimbursement Fee (per EDU)	\$0
Subtotal of Wastewater System SDC Fees (per EDU)	\$9,033
SDC Credit Summary	
Upper Range Credit (100% Financing)	\$1,964
Mid Range Credit (75% Financing Credit)	\$1,473
Mid Range Credit (50% Financing Credit)	\$982
Low Range Credit (25% Financing Credit)	\$491

1.2.3 Storm Drainage System SDC

This plan includes a methodology for the Storm Drainage System SDC for the City of Monroe based on the City's 2015 Storm Water Master Plan (Civil West Engineering Services). The projects in the Storm Drainage System CIP List have been analyzed to determine the percentage of the project that is dedicated to providing capacity for growth. Based on the analysis, a total SDC eligible project cost was established.

Growth potential in the storm drainage sector was based upon impervious surface methodology. It was recommended that the City use a standard of impervious surface as the assessment method for determining the impact to the storm drainage system by new development. The City currently uses 3,747 square feet of impervious surface as an EDU as determined in the City's 2015 Storm Water Master Plan (Civil West Engineering Services). Projected growth rates were used to establish the growth potential for the storm drainage system during the planning period. The SDC charge for the storm drainage system was calculated by dividing the SDC eligible project costs by the growth potential within the system.

A summary of the Storm Drainage System SDC is provided below in Table 1-3. A detailed analysis of the Storm Drainage System SDC methodology is provided within Section 5 of this methodology.

TABLE 1-3: STORM DRAINAGE SYSTEM SDC SUMMARY

SDC Component	SDC Amount
Improvement Fee (per EDU)	\$4,353
Reimbursement Fee (per EDU)	\$0
Subtotal of Storm Drainage System SDC Fees (per EDU)	\$4,353
SDC Credit Summary	
Upper Range Credit (100% Financing)	\$904
Mid Range Credit (75% Financing Credit)	\$678
Mid Range Credit (50% Financing Credit)	\$452
Low Range Credit (25% Financing Credit)	\$226

1.2.4 Transportation System SDC

This document includes a methodology for the determination of a Transportation System SDC for the City of Monroe. A City Transportation System Plan was completed in 2019, and all of the projects and original project costs included on the CIP List were originally identified through that planning document.

An analysis of growth potential was developed within this methodology using the other infrastructure sectors' growth potential for internal trip generation growth and an estimate of external trip generation growth. Furthermore, the Institute of Transportation Engineer's (ITE) trip generation table was used to normalize trip generation for many different land use types to a typical residential dwelling. This allowed for the use of common EDU methodology to calculate growth potential within the system.

The Transportation System SDC was calculated by dividing the SDC eligible project costs by the growth potential in the system. A summary of the Transportation System SDC is provided below in Table 1-4. A detailed analysis of the Transportation System SDC methodology is provided within Section 6 of this methodology.

TABLE 1-4: TRANSPORTATION SYSTEM SDC SUMMARY

SDC Component	SDC Amount
Improvement Fee (per EDU)	\$44,191
Reimbursement Fee (per EDU)	\$0
Subtotal of Transportation System SDC Fees (per EDU)	\$44,191

1.2.5 Parks System SDC

The methodology used to establish the Parks System SDC is based on the City's 2011 Parks Master Plan, prepared by the Parks Planning Committee. Based on an analysis of anticipated project costs and the percentage of the project that accommodated growth, a total SDC eligible project cost has been established.

The growth potential in the parks system was determined to be equivalent to growth in the residential and commercial sectors. The Parks System SDC was calculated by dividing the SDC eligible project cost by the growth potential of the parks system.

Table 1-5 summarizes the Parks System SDC as developed within this methodology. A detailed analysis of the Parks System SDC for the City of Monroe is provided in Section 7 of this document.

TABLE 1-5: PARKS SYSTEM SDC SUMMARY

SDC Component	SDC Amount
Improvement Fee (per EDU)	\$1,593
Reimbursement Fee (per EDU)	\$132
Subtotal of Parks System SDC Fees (per EDU)	\$1,724

1.2.6 Compliance Costs

Oregon law allows a utility service provider to use SDC revenues to pay for costs associated with complying with and administering SDC programs. While this is not a separate category, it is acceptable to assess a "compliance charge" when collecting SDC fees.

Acceptable compliance cost activities include accounting and auditing costs, SDC methodology updates and plans, master planning costs, CIP administration costs, and other costs that are determined to be necessary to support and properly manage an SDC program.

It was estimated that the City will face an annual compliance cost of \$14,687 related to administration of the SDC programs and maintaining updated infrastructure planning documents. A summary of the estimated SDC compliance expenses is provided below in Table 1-6.

TABLE 1-6: SDC COMPLIANCE EXPENSE SUMMARY

Compliance Activity	Estimated Cost	SDC Eligibility	Frequency (Years)	Annual Cost
General Accounting/Administrative Costs				
Auditing/Accounting	\$2,000	100%	1	\$2,000
SDC Methodology Administration & Annual Adjustments	\$5,000	100%	1	\$5,000
SDC Methodology Update	\$21,000	100%	10	\$2,100
Wastewater System Compliance Costs				
Wastewater Facilities Planning	\$80,000	19.5%	10	\$1,560
Water System Compliance Costs				
Water Master Planning	\$60,000	19.5%	10	\$1,170
Water Conservation and Management Planning	\$25,000	19.5%	20	\$244
Storm Drainage System Compliance Costs				
Storm Drainage Master Planning	\$50,000	19.5%	20	\$488
Parks System Compliance Costs				
Park System Master Planning	\$50,000	19.5%	20	\$488
Transportation System Compliance Costs				
Transportation System Master Plan	\$84,000	19.5%	10	\$1,638
Subtotal Annual Compliance Costs	\$377,000			\$14,687

Collection of funds to pay for these annual SDC compliance costs should be in the form of a percentage surcharge on all SDC's collected. Therefore, an estimate must be made of the revenue that the City is projecting to collect over the planning period. Using the average growth rate over the planning period, Table 1-7 summarizes the anticipated revenues that are expected for all SDC sectors.

TABLE 1-7: SDC REVENUE ESTIMATE SUMMARY

Estimates of SDC Revenues	Added EDU's EDU's/yr	SDC Charge per EDU	Annual Revenue
Estimated Annual Water SDC Revenues	3.50	\$4,802	\$16,808
Estimated Annual Wastewater SDC Revenues	3.50	\$9,033	\$31,616
Estimated Annual Storm Drainage SDC Revenues	3.50	\$4,353	\$15,234
Estimated Annual Transportation SDC Revenues	3.50	\$44,191	\$154,668
Estimated Annual Parks SDC Revenues	3.50	\$1,724	\$6,036
Total Estimated SDC Revenues			\$224,361
Compliance Cost Charge (Annual Cost/Annual Revenue)			6.55%

Based on this analysis, an SDC Compliance Charge of 6.55% should be placed on all SDC's to collect adequate funds to properly administer the SDC program for the City of Monroe.

Section 8 of this methodology includes information and details on the establishment of SDC compliance costs.

1.2.7 SDC Summary for all Infrastructure Sectors

Table 1-8 summarizes the maximum defensible SDC for each infrastructure element as developed within this methodology.

TABLE 1-8: SUMMARY OF SDC'S BY INFRASTRUCTURE SECTOR

Infrastructure Sector	Reimbursement SDC per EDU	Improvement SDC per EDU	Total SDC per EDU
Water System	\$0.00	\$4,802.33	\$4,802.33
Wastewater System	\$0.00	\$9,033.00	\$9,033.00
Storm Drainage System	\$0.00	\$4,352.53	\$4,352.53
Transportation System	\$0.00	\$44,190.85	\$44,190.85
Parks System	\$131.52	\$1,592.98	\$1,724.50
Total	\$131.52	\$63,971.70	\$64,103.21
Compliance Charge (6.55%)			\$4,196.21
Total SDC Charge per EDU			\$68,299.43

The sum of all separate SDC charges is \$64,103.21 per EDU. With the addition of the 6.55% Compliance Charge, the total SDC charge increases to \$68,299.43 per EDU. This charge does not include SDC credits which may be appropriate.

1.2.8 Sample SDC Assessment

Residential Customers

A simple example of SDC assessment would be for a new single-family dwelling. The assessment for this new customer would be as follows:

TABLE 1-9: SAMPLE RESIDENTIAL SDC ASSESSMENT

SDC Sector	SDC Charge per EDU
Water System SDC	\$4,802
Wastewater System SDC	\$9,033
Storm Drainage System SDC	\$4,353
Transportation System SDC	\$44,191
Parks System SDC	\$1,724
Subtotal	\$64,103
Compliance	\$4,196
Total Residential SDC	\$68,299

Therefore, a total SDC for an average new residential dwelling would be \$68,299. This does not include any potential reductions for SDC credits that may be appropriate, depending on how the City undertakes the various CIP projects in the future.

Non-Residential Customers

Non-residential development requires a case-by-case assessment process. Each section within this methodology includes a discussion of the methods that are to be used to assess new residential and non-residential customers.

Appendix B is a spreadsheet listing various potential land uses in the community, including commercial and residential properties. It shows the SDC charges that may be imposed on the different land uses based on this methodology. Appendix B is intended to provide examples only and potential charges only and should not be used as the definitive SDC charges for any one type of land use.

The City may also allow some new nonresidential customers to appeal their assessment and allow the customer to pay some of the assessment while a study is completed of their actual impact to the system. An example of a potential appeal process is provided in Section 3.11 of this methodology. The burden of paying for and making the case for an appeal should rest on the new customer making the appeal.

1.2.9 SDC Ordinance and Methodologies

The SDC program in Monroe is established through the municipal ordinance process. The ordinance provides the legal force necessary to govern the administration and operation of the program. A new resolution will be established to set the charge and other details for each SDC infrastructure sector. This approach will allow the City to easily update SDC charges on a regular basis by simply passing a new resolution for the SDC program they wish to adjust. There will be no need to adjust the SDC ordinance in the future. Information on updating and adjusting SDC's is provided in Section 2 of this methodology.



2 INTRODUCTION

2.1 Background and Need

The City of Monroe owns and maintains a public infrastructure system that includes the following:

- A potable water system with a raw water intake, treatment plant, storage reservoirs, and distribution system to deliver water to users.
- A wastewater system that includes a collection system, one lift station, a treatment plant, and a river outfall for treated effluent.
- A storm drainage system with piping and ditching to convey rainwater runoff from high ground to appropriate outfall locations.
- A transportation system made up of major and minor roads, sidewalks, and other facilities for the purposes of providing transportation throughout the community.
- A parks system with open space and other facilities for recreational purposes.

The City of Monroe has not previously completed an SDC methodology. Previously used SDC charges were based on the average of the nearby small communities.

2.1.1 Summary of SDC Charge Structure in Monroe

The method currently used by the City was Last updated in 2016. The City assessed the following SDC's:

1. Wastewater System SDC: The Wastewater System SDC was \$6,082.44 per EDU.
2. Water System SDC: The Water System SDC was \$7,769.03 per EDU.
3. Storm Drainage System SDC: The Storm Drainage System SDC was \$962.55 per EDU plus \$0.26 per SF impervious surface.
4. Transportation System SDC: Transportation System SDC was \$620.36 per EDU.
5. Parks System SDC: The Parks System SDC was \$590.10 per EDU.

Based on the current method, CIP List, and annual adjustments to cost estimates used to calculated infrastructure system SDCs, the total SDC for a typical residence is approximately \$16,024.48, not including the charge for impervious cover. This information is provided so that

the City may compare the final recommendations in this methodology to typical charges prior to the SDC update.

2.2 Oregon SDC Law

The State of Oregon has established statutory law for the development, assessment, and administration of SDC's for local governments, utility districts, and similar agencies. Oregon Revised Statutes (ORS) 223.297 - 223.314 authorizes local governments and service districts to assess SDC's for various infrastructure sectors including sewer, water, storm drainage, streets, and others.

In addition to specifying the infrastructure systems for which SDC's may be assessed, the SDC legislation provides guidelines on the calculation and modification of SDC's, accounting requirements to track SDC revenues, and the adoption of administrative review procedures. A summary of the statutory SDC provisions is provided below:

2.2.1 SDC Structure

SDC's are typically developed around two separate modes or philosophies of SDC logic. They are:

1. Reimbursement SDC
2. Improvement SDC

SDC's can also be assessed based on a combination of reimbursement and improvement charges. In addition to these charges, the statute allows agencies to recover administrative costs that are necessary to establish, comply with, and administer SDC programs. This methodology refers to these costs as compliance costs.

Reimbursement SDC. A reimbursement SDC is designed to recover capital costs for projects that have already been undertaken. These capital projects must have remaining capacity. Current legislation requires that the reimbursement SDC be established by an ordinance or resolution that sets forth the methodology used to calculate and assess the charge. The methodology must consider several factors when determining an appropriate SDC cost including:

1. The cost of existing facilities when they were constructed or implemented,

2. Remaining capacity available for growth or development use,
3. Prior contributions from existing users,
4. The value of unused capacity,
5. Ratemaking principles employed to finance the capital improvements,
6. Grants or other funding sources that must be subtracted from the eligible costs, and
7. Other relevant factors.

The objective of a reimbursement SDC is that future system users contribute an equitable portion of the capital costs of recently completed (those project which are still financed) facilities with excess capacity.

An example of how a reimbursement SDC could be utilized is with a recently upgraded or constructed sanitary sewer lift station. Sanitary sewer lift stations are required to be designed and constructed to handle a future (20 or 25 year) projected capacity. The additional cost required for the construction of a new lift station that can not only handle existing flows but future projected flows becomes the SDC eligible portion of the project cost. For example, if a lift station was built five years ago, but has additional capacity available for future growth, the value of the remaining unused capacity of the station can be calculated and assessed as a reimbursement SDC eligible project cost to all new customers who wish to utilize some of the remaining capacity during the remainder of the design period.

Improvement SDC. The improvement fee is designed to recover costs of planned capital improvements as they appear on an adopted capital improvement list or capital improvement plan. The improvement fee must also be specified in an ordinance or resolution and is subject to the following conditions:

1. The costs of projected capital improvements will increase the capacity of the system.
2. Projects must appear on an approved and adopted CIP list or be added to the list through development review and approval.
3. Projects must serve more than the development for which the SDC is being charged. Specifically, to be considered a “qualified public improvement”:
 - a. the project is not located on or contiguous to property that is being developed, or
 - b. the project is located in whole or in part on or contiguous to property that is the subject of development approval and required to be built larger or with greater

capacity than is necessary for the particular development project to which the improvement fee is related.

Revenues generated from improvement fees must be dedicated to capacity increasing capital improvements or the repayment of debt on such improvements. An increase in capacity is established if an improvement increases the level of service provided by existing facilities or provides new facilities. The portion of such improvements funded by improvement fees must be related to current or projected development.

Combined SDC. In most cases, growth needs due to development will be met through a combination of existing available capacity (Reimbursement SDC) and future capacity enhancing improvements (Improvement SDC). The sum of reimbursement and improvement SDC's is commonly referred to as a combined SDC; however, when utilizing a combined SDC, the methodology must demonstrate that the charge is not based on providing the same capacity-increasing result due to both SDC's. In short, an agency cannot "double-dip" when using a combined SDC. This is usually accomplished by structuring the fee to reflect the weighted average cost of existing and new facilities.

Compliance Costs. Oregon law allows SDC revenue to be used by the assessing agency for costs incurred to comply, administer, study, and update an SDC program. Compliance costs include, but are not necessarily limited to:

1. Auditing and accounting costs
2. Master/Facilities Planning Costs and Planning Updates
3. SDC Methodology Development Costs and Updating of SDC Plans
4. Maintenance of a Capital Improvement Plan (CIP) list

Compliance costs are typically assessed based on a percentage of the overall or maximum anticipated or projected annual SDC revenue. These revenues must be used to maintain or administer an active SDC program. Compliance costs are discussed in Section 8.

2.2.2 SDC Credits

Oregon law requires that an SDC credit be provided against any assessed improvement fee for the construction of "qualified public improvements." Qualified improvements, as discussed above, are improvements that are required as a condition of development approval, are included on the CIP list, and are either:

1. not located on or contiguous to the property being developed, or
2. located in whole or in part, on or contiguous to, property that is the subject of development approval and required to be built larger or with greater capacity than is necessary for the particular development project to which the improvement fee is related.

For example, if a new wastewater lift station appears on a CIP list and is required for a specific development to be undertaken, the owner of the development can construct the new lift station and receive an SDC credit for the SDC-eligible portion of the project costs, assuming that the new lift station is needed to serve more customers than are represented by the development alone.

An additional credit must be included in the methodology for the present worth of financing payments that may occur in the future for an undertaken improvement. In short, new users cannot be required to pay SDC's for specific improvements as well as pay increased user rates to pay back loans that were required to construct the improvements. This form of "double-dipping" is overcome by establishing a credit based on the present worth of a potential increase in monthly user rates over a specified period.

2.2.3 Update and Review Requirements

SDC methodology is public information and must be made available for public review.

The SDC ordinance must include procedures and practices for not only the establishment but the modifying and updating of SDC fees. Public agencies must maintain a list of persons and organizations who have made a written request for notification prior to the adoption or amendment of any new or updated SDC fees; however, changes to the SDC rates resulting from:

1. changes to costs in materials, labor, or real property as applied to projects in the required project list, or
2. application of a cost index that considers average change in costs of materials, labor, or real property and is published for purposes other than SDC rate setting (i.e. ENR Construction Cost Index)

are not considered "modifications" to the SDC. As such, the local agency is not required to adhere to the notification provisions.

If changes to the SDC methodology or assessment amounts do represent a modification, the notification provisions in the Oregon law require a 90-day written notice period prior to the first public hearing, with the new SDC methodology available for review at least 60 days prior to the public meeting.

2.2.4 Other SDC Statutory Provisions

Other provisions of the Oregon legislation require:

1. Development of a capital improvement program/plan (CIP) or comparable planning effort that lists the improvements that may be funded with improvement fee revenues and the estimated timing and cost of each improvement. This is usually accomplished through a master planning effort.
2. Deposit of SDC revenues into dedicated and individual accounts and the annual accounting of revenues and expenditures. The annual accounting effort must include a list detailing the amount spent on each project funded, in whole or in part, by SDC revenues, including costs attributed to complying with the SDC legislation.
3. Creation of an administrative appeals procedure, in accordance with the legislation, whereby a citizen or other interested party may challenge any expenditure of SDC revenues.
4. Preclusion against challenging the SDC methodology after 60 days from the enactment of or revision to the SDC ordinance or resolution.

The provisions of the legislation are invalidated if they are construed to impair the local government's bond obligations or the ability of the local government to issue new bonds or other financing. Furthermore, the establishment or modification of an SDC or a project list is not a land use decision issue.

2.3 Capacity Replacement Protocol

It is common to have a system in place that allows a new land use or development to replace an existing land use and provide an adjustment to SDC's.

For example, if someone buys an older house, tears it down, and constructs a new residential home in its place, no new flows or demands are added to the system, and no new capacity is

required to service the new residence. Therefore, it would be appropriate to waive SDC fees in this instance.

If someone tears down several old homes to build a new apartment complex, the project must be carefully considered, and an adjustment made, depending on how many new units there will be, how much more impervious surface, etc. compared to the previous land use.

Capacity replacement issues must be handled on a case by case basis and a process developed to allow a fair adjustment when existing capacity use is replaced with a similar land use.

2.4 Public Education and Input to Methodology

A successful SDC methodology update must incorporate a public education and public input component that effectively conveys information to interested and affected groups in the community and allows them a forum to ask questions, voice concerns, and seek resolutions.

2.4.1 SDC Meetings and Public Education

Two public meetings were planned as part of the SDC methodology update process.

1. The first discussion of the SDC methodology update occurred at the January 6th, 2020, City Council and Planning Commission work session meeting. The City Engineering team discussed the contents of the Capital Improvement Project Lists for each infrastructure sector.
2. The second discussion will be held by the Planning Commission on March 2nd. The Planning Commission will conduct a public hearing following a staff presentation. The Planning Commission will review the SDC Plan and make a recommendation to the City Council regarding the review of the draft documents and the public input that is received.
3. On March 23rd, the SDC Plan will be formally presented to the City Council by the City's Engineering Team including a recommended change from the planning Commission review and public hearing.
4. On April 27th, the City Council will conduct a public hearing, review and approve the first reading of the Ordinance.

5. On May 18th, The City Council will have a second reading and the adoption of the SDC Plan, if the first reading is approved on April 27th.
6. On May 18th, The City Council will conduct a public hearing and review for adopting a resolution setting fees for the SDC's for the City based upon the adopted SDC Plan.
7. After May 18th, a flyer regarding the SDC Plan will be provided and distributed with the monthly utility bills prior to the March 2nd public hearing.
8. Public notifications will be made prior to all three public hearings.

2.5 Annual Update

Per section 2.2.3, the change in SDC costs can be adjusted periodically by the application of a cost index. It is recommended that the City update the SDC fees through an annual resolution to maintain relevant costs as indexed to the ENR Construction Cost Index. The baseline ENR of 11,268.48 for July 2019, was used in this report.

2.6 Report Organization

The following sections comprise this City of Monroe SDC Methodology as presently constituted:

- **Section 1 – Executive Summary.** This section provides a brief overview and summary of the SDC Plan and is intended to provide the reader with the important facts and findings contained in the plan.
- **Section 2 – Introduction.** This section provides information on the background of SDC's in Monroe, related efforts for other infrastructure areas, and the legal and statutory background for the establishment of SDC's within the State of Oregon.
- **Section 3 – Water System SDC Methodology.** This section provides a detailed accounting of the Water System SDC methodology.
- **Section 4 – Wastewater System SDC Methodology.** This section provides a detailed accounting of the Wastewater System SDC methodology.
- **Section 5 – Storm Drainage System SDC Methodology.** This section provides a detailed accounting of the Storm Drainage System SDC methodology.
- **Section 6 – Transportation System SDC Methodology.** This section provides a detailed accounting of the Transportation System SDC methodology.

- **Section 7 – Parks System SDC Methodology.** This section provides a detailed accounting of the Parks System SDC methodology.
- **Section 8 – Compliance Costs.** This section provides a detailed accounting and methodology for the establishment of a compliance cost for the maintenance of SDC programs for all the SDC methodologies.
- **Appendix.** The Appendix includes information that is referenced in this study but is not included in the referenced planning documents.



3 WATER SYSTEM SDC METHODOLOGY

3.1 Introduction

This section describes in detail, the methodology and SDC calculation for the potable water system for the City of Monroe. This section describes the existing and future demand requirements of the system, the projects and project costs developed to address deficiencies and satisfy future demand needs, existing and future equivalent dwelling units for the assessment of the SDC's, and a calculation of the maximum defensible SDC's per EDU.

3.2 Water System Overview

The City's Water System Master Plan (November 2019, Civil West Engineering, Inc) has been used in part to establish present and future water demand, system capacity, improvement project development, project costs, and other information that will be used in this methodology.

Completion of this study will enable City staff to prepare more appropriately for future growth and for water distribution system improvements needed to address existing issues related to SCADA Controls, metering upgrades, raw water intake, treatment and disinfection processes, and emergency back-up power.

This section summarizes information about the potable water system at the time this methodology was prepared.

3.2.1 Overall Water System Description

The water treatment and distribution system in Monroe includes a number of separate elements to obtain, treat, and distribute water to individual customers for domestic consumption. A brief overview of the different system elements is provided below.

Source. The City's current water supply is from the Long Tom River. In the past, the city has used groundwater from several wells, which are now inactive. When in use, the raw well water was treated for reduction of manganese and iron, and the wells have historically tested high for coliform, dichloromethane, and sodium. The city used treated groundwater from these wells as its primary water source from 1986 until 2008.

Treatment. The water treatment plant is a dual train ultrafiltration system, sized to treat a maximum of 350 gpm. Each train runs for 6 hours daily and water is made at the plant two to three times per week. Production rate of water is highly dependent upon the turbidity of the raw water. The plant adds sodium hypochlorite for disinfection, and soda ash for corrosion control. Under the WTP is a 40,000-gallon clear well with a baffling factor of 0.5.

Distribution. The distribution system is a grid like system consisting of mostly 8-inch and 10-inch PVC with a few scattered 4-inch and 6-inch pipes. All customer water services lines are metered and recorded monthly by the City. Per the latest WaterCAD modeling of the system, it has been determined that the network has adequate domestic and fire flows for the duration of the planning period.

Storage: The City presently has one 1.0-million-gallon glass-fused to steel tank for water storage, that was constructed in 2009.

3.2.2 Population and Population Projections

The water consuming population in Monroe includes primarily residential customers with a few institutional and commercial accounts. The City currently provides water to facilities inside of the Urban Growth Boundary (UGB).

Population growth projections were completed using information from multiple sources. According to the 2017 Portland State University Population Research Center (PSU PRC) Coordinated Population Forecast for Benton County, the County is projected to experience an annual average growth rate of 1.0% per year until 2035 followed by a reduction of the growth rate to 0.4% until 2067. The PSU PRC Coordinated Population Forecast also provides projected average annual growth rates for the Monroe UGB. For 2017 through 2035, the City is projected to experience an average annual growth rate of 0.3% followed by a decrease in the growth rate to 0.2% through the remainder of the forecast period.

According to the PSU PRC, the population of Monroe in 2018 was 625. Based on current development in the City, unexpected recent growth within the City has the potential to increase the population by approximately 142 persons. This has been allocated to the years 2019-2020 since some of the new development remains unoccupied. The projected population for 2040 is estimated to be 805. Historic population data and annual population projections for the City of Monroe are presented in Table 3-1.

TABLE 3-1: HISTORIC AND PROJECTED POPULATION INFORMATION FOR THE CITY OF MONROE

	Year	Population	Growth from Previous Year (%)
Certified Population	2010	617	
	2011	615	-0.324%
	2012	615	0.000%
	2013	620	0.813%
	2014	620	0.000%
	2015	620	0.000%
	2016	620	0.000%
	2017	620	0.000%
	2018	625	0.806%
Projected Population	2019	648	3.680%
	2020	767	18.364%
	2021	769	0.265%
	2022	771	0.265%
	2023	773	0.265%
	2024	775	0.265%
	2025	777	0.265%
	2026	779	0.265%
	2027	781	0.265%
	2028	783	0.265%
	2029	785	0.265%
	2030	788	0.265%
	2031	790	0.265%
	2032	792	0.265%
	2033	794	0.265%
	2034	796	0.265%
	2035	798	0.265%
	2036	799	0.170%
	2037	801	0.170%
	2038	802	0.170%
	2039	804	0.170%
	2040	805	0.170%

3.3 EDU Methodology and Projected Growth

Local water system capacity is commonly defined using a system that seeks to reduce or convert all customer categories, including residential and non-residential categories, to a common denominator referred to as an equivalent dwelling unit or EDU. An equivalent dwelling unit represents the demand or quantity of water required daily by an average residential

connection within the system. The cumulative demand or impact on the system generated by all the users can therefore be expressed in terms of a multiple of EDU's.

An example of using the EDU method to describe non-residential water use follows:

A restaurant is a non-residential water customer that uses more water than a typical household. A review of the water records for a particular restaurant may show that, over a period of time (a typical yearly operation) that the restaurant used as much water as 14 average residential customers in the community. Therefore, it can be said that the restaurant's water use or water demands are equivalent to 14 residential dwellings. More simply, the restaurant is equal to 14 EDU's. This value can be used to calculate and compare the regular water use at the restaurant, or any non-residential customer, to the water use in the residential sector of the system.

To project growth in the number of EDU's it is assumed that the EDU growth rate will equal the population growth rate. This logic assumes that all sectors in the community will grow at a rate equal to that of the residential population. Under this assumption, it is anticipated that, for example, commercial enterprises will expand in response to population growth and job creation to service a growing population.

EDU calculations for this master planning effort were based on the most recent 60 months of residential metered water data provided by the City (2014 – 2019). The City does not separate the metered connections therefore we could not distinguish between single family residential, commercial or industrial. The EDU analysis took into consideration the average water use for all connections.

Monroe has 337 EDU's that are all located inside of the City's Urban Growth Boundary. The average amount of water consumed by all customers over the 12-month period (2017-2018), considered in the EDU analysis was 1,338,144 gallons which translates to approximately 3,970 gallons per month for each EDU.

$$EDU \text{ (Monthly Basis)} = \frac{1,338,144 \text{ gallons/month}}{337 \text{ EDU's}} = 3,970 \frac{\text{gallons}}{\text{month EDU}}$$

Other users can then be described as an equivalent number of EDUs based on their relative water consumption. For example, a commercial business with an average metered

consumption of 7,940 gallons per month uses twice the amount of water as the typical single-family dwelling and can be considered 2 EDUs.

Projecting increase in EDU's was accomplished by using the population growth of Monroe and the persons per single family dwelling, 2.25, and the above calculation of water consumption per EDU.

Based on this analysis approach, it is projected that an additional 70 EDU's will be added to the water system over the planning period. The complete calculations of the water system EDU growth projections are presented in [Appendix C](#).

3.4 Capital Improvement Project List and Project Costs

An integral component in this Water System SDC methodology is the establishment of a Water System Capital Improvement Project (CIP) list. The CIP List includes past and future projects along with their actual or estimated project costs. Projects on the CIP List that have been completed form the basis for reimbursement SDC's as defined in Section 2. Projects that remain to be completed will form the basis for improvement SDC's.

Several water system projects were developed and presented in the recently completed City's 2019 Water Master Plan (WMP). This document was used to develop the CIP List for this methodology.

The City of Monroe Water System CIP List was taken from the Technical Memorandum provided in Appendix A and is provided below in Table 3-2. The Water System Master CIP List should be updated regularly as new needs arise or additional planning work is completed. Similarly, projects that are no longer needed should be removed from the CIP list. Table 3.2 below does not list projects that have already been completed.

TABLE 3-2: WATER SYSTEM CAPITAL IMPROVEMENT PROJECT LIST

Project No.	Project Description	Project Cost Estimate	Project Cost Date	ENR CCI of Estimate	Current ENR CCI	Adjusted Cost Estimate
W1	SCADA - Restoring WTP Automation and Data Acquisition Upgrades	\$125,760	2019	11268.48	11268.48	\$125,760
W2	SCADA - Raw Water Intake VFD and Metering Upgrades	\$11,022	2019	11268.48	11268.48	\$11,022
W3	SCADA - Metering Upgrades	\$18,282	2019	11268.48	11268.48	\$18,282
W4	Source - Raw Water Intake Roughing Filter	\$126,484	2019	11268.48	11268.48	\$126,484
W5	Source - Pre-Filtration Mixing Basin	\$29,029	2019	11268.48	11268.48	\$29,029
W6	Source - Surface Water Source Options	\$48,831	2019	11268.48	11268.48	\$48,831
W7	Treatment - Spare Parts at water Treatment Plant	\$6,000	2019	11268.48	11268.48	\$6,000
W8	Treatment - Granular Activated Carbon Reactors	\$280,561	2019	11268.48	11268.48	\$280,561
W9	Treatment - Air Compressor	\$9,000	2019	11268.48	11268.48	\$9,000
W10	Treatment - WTP Automation Upgrades	\$12,000	2019	11268.48	11268.48	\$12,000
W11	Treatment - Onsite Backup generator and Protective Structure	\$130,232	2019	11268.48	11268.48	\$130,232
W12	Treatment - Sodium Hypochlorite Generator for Disinfection	\$72,254	2019	11268.48	11268.48	\$72,254
W13	Reservoir - Mixing/aeration Upgrades for DBP Control	\$35,648	2019	11268.48	11268.48	\$35,648
W14	Distribution - Citywide Fire Protection Upgrades Project	\$330,085	2019	11268.48	11268.48	\$330,085
Total						\$1,235,187

3.5 Project SDC Eligibility

The SDC methodology must include a discussion of the percentage of each project's cost that can be attributed as necessary for growth and is SDC eligible. SDC's must be based on a project's costs or the portion of a project's cost that is necessary to add system capacity in response to or in anticipation of growth.

When determining what percentage of a project should be considered SDC eligible, the existing capacity needs must be compared to the anticipated future capacity needs. For example, if a project is developed to provide a 50% increase in capacity to an element of the water treatment or distribution system, 50% of the project costs would be considered SDC eligible. If a project is developed to provide service to a new area not currently served by municipal water and where development is expected to occur, the project could be 100% SDC eligible.

Using this approach, all the projects presented in Section 3.4 were reviewed to determine SDC eligibility. For projects already completed, the actual project costs were used to determine eligible SDC reimbursement costs. For projects that have not been completed, costs have been increased from the estimated dollar amount presented in the original planning document to current (2019) dollars using the ENR Construction Cost Index. The SDC eligibility determination for each project included on the Water System CIP List is included below.

Project W1 – SCADA: Restoring WTP Automation and Data Acquisition Upgrades

Recommended SDC Eligibility for Project W1: 19.5%

The 2019 Water System Master Plan recommends re-establishing the SCADA controls at the WTP so the plant can be monitored remotely. Given that all residents will benefit equally from the improved infrastructure, it was determined that the SDC eligibility for the project should be based on the increase from the present population (Year 2019: 648 people) to the planning year population (Year 2040: 805 people).

$$\text{Project W1 SDC Eligibility} = \frac{805 \text{ people} - 648 \text{ people}}{805 \text{ people}} = 0.195 \rightarrow 19.5\% \text{ Eligible}$$

Project W2 – SCADA: Raw Water Intake VFD and Metering Upgrades

Recommended SDC Eligibility for Project W2: 19.5%

The 2019 Water System Master Plan recommends upgrading the raw water meter to allow for greater control and monitoring of the system. Given that all residents will benefit equally from the improved infrastructure, it was determined that the SDC eligibility for the project should be based on the increase from the present population (Year 2019: 648 people) to the planning year population (Year 2040: 805 people).

$$\text{Project W2 SDC Eligibility} = \frac{805 \text{ people} - 648 \text{ people}}{805 \text{ people}} = 0.195 \rightarrow 19.5\% \text{ Eligible}$$

Project W3 – SCADA: Metering Upgrades

Recommended SDC Eligibility for Project W3: 19.5%

The 2019 Water System Master Plan recommends integrating SCADA into the metering and level controls at the reservoir. Given that all residents will benefit equally from the improved infrastructure, it was determined that the SDC eligibility for the project should be based on the increase from the present population (Year 2019: 648 people) to the planning year population (Year 2040: 805 people).

$$\text{Project W3 SDC Eligibility} = \frac{805 \text{ people} - 648 \text{ people}}{805 \text{ people}} = 0.195 \rightarrow 19.5\% \text{ Eligible}$$

Project W4 – Source: Raw Water Intake Roughing Filter

Recommended SDC Eligibility for Project W4: 19.5%

The 2019 Water System Master Plan recommends adding a roughing filter to minimize the backwashing at the treatment plant when the water is turbid. Given that all residents will benefit equally from the improved infrastructure, it was determined that the SDC eligibility for the project should be based on the increase from the present population (Year 2019: 648 people) to the planning year population (Year 2040: 805 people).

$$\text{Project W4 SDC Eligibility} = \frac{805 \text{ people} - 648 \text{ people}}{805 \text{ people}} = 0.195 \rightarrow 19.5\% \text{ Eligible}$$

Project W5 – Source: Pre-Filtration Mixing Basin

Recommended SDC Eligibility for Project W5: 19.5%

This project will add a filtration mixing basin in sequence to the roughing filter. This project will replace the existing flash mixing process that is ineffective. Given that all residents will benefit equally from the improved infrastructure, it was determined that the SDC eligibility for the project should be based on the increase from the present population (Year 2019: 648 people) to the planning year population (Year 2040: 805 people).

$$\text{Project W5 SDC Eligibility} = \frac{805 \text{ people} - 648 \text{ people}}{805 \text{ people}} = 0.195 \rightarrow 19.5\% \text{ Eligible}$$

Project W6 – Source: Surface Water Source Options

Recommended SDC Eligibility for Project W6: 19.5%

This project will help identify the City's options and routes of obtaining water rights. Given that all residents will benefit equally from the improved infrastructure, it was determined that the SDC eligibility for the project should be based on the increase from the present population (Year 2019: 648 people) to the planning year population (Year 2040: 805 people).

$$\text{Project W6 SDC Eligibility} = \frac{805 \text{ people} - 648 \text{ people}}{805 \text{ people}} = 0.195 \rightarrow 19.5\% \text{ Eligible}$$

Project W7 – Treatment: Spare Parts at Water Treatment Plant

Recommended SDC Eligibility for Project W7: 0%

This project will provide the utility staff extra spare parts to have on hand to allow for faster maintenance to the system when required. This project was estimated at 0% SDC eligible because it does not expand the existing system or capacity.

Project W8 – Treatment: Granular Activated Carbon Reactor

Recommended SDC Eligibility for Project W8: 50%

This project will help to decrease the organic content in the water by installing a granular activated carbon filtration system after the ultrafiltration membranes. By controlling disinfection byproducts (DBPs), this project will increase the usable storage volume in the existing reservoir, making it available for the demand of future growth. Because there is already a DBP concern, this project is not entirely growth related, but growth is a significant driver of the project need. Therefore, it is determined that this project is 50% eligible.

Project W9 – Treatment: Air Compressor

Recommended SDC Eligibility for Project W9: 19.5%

This project will supply a new air compressor at the WTP. Given that all residents will benefit equally from the improved infrastructure, it was determined that the SDC eligibility for the project should be based on the increase from the present population (Year 2019: 648 people) to the planning year population (Year 2040: 805 people).

$$\text{Project W9 SDC Eligibility} = \frac{805 \text{ people} - 648 \text{ people}}{805 \text{ people}} = 0.195 \rightarrow 19.5\% \text{ Eligible}$$

Project W10 – Treatment: Water Treatment Plant Automation Upgrades

Recommended SDC Eligibility for Project W10: 19.5%

This project will restore the automation to the WTP. Given that all residents will benefit equally from the improved infrastructure, it was determined that the SDC eligibility for the project should be based on the increase from the present population (Year 2019: 648 people) to the planning year population (Year 2040: 805 people).

$$\text{Project W10 SDC Eligibility} = \frac{805 \text{ people} - 648 \text{ people}}{805 \text{ people}} = 0.195 \rightarrow 19.5\% \text{ Eligible}$$

*Project W11 – Treatment: Onsite Backup Generator and Protective Structure**Recommended SDC Eligibility for Project W11: 19.5%*

This project will allow for an emergency backup power to the WTP in the event of a power outage. Given that all residents will benefit equally from the improved infrastructure, it was determined that the SDC eligibility for the project should be based on the increase from the present population (Year 2019: 648 people) to the planning year population (Year 2040: 805 people).

$$\text{Project W11 SDC Eligibility} = \frac{805 \text{ people} - 648 \text{ people}}{805 \text{ people}} = 0.195 \rightarrow 19.5\% \text{ Eligible}$$

*Project W12 – Treatment: Sodium Hypochlorite Generator for Disinfection**Recommended SDC Eligibility for Project W12: 19.5%*

This project will provide the WTP with an upgraded disinfections system. Given that all residents will benefit equally from the improved infrastructure, it was determined that the SDC eligibility for the project should be based on the increase from the present population (Year 2019: 648 people) to the planning year population (Year 2040: 805 people).

$$\text{Project W12 SDC Eligibility} = \frac{805 \text{ people} - 648 \text{ people}}{805 \text{ people}} = 0.195 \rightarrow 19.5\% \text{ Eligible}$$

*Project W13 – Reservoir: Mixing/aeration Upgrades for DBP Control**Recommended SDC Eligibility for Project W13: 50%*

This project will reduce DBP's in the water by adding an aeration system in the existing reservoir. By controlling disinfection byproducts (DBPs), this project will increase the usable storage volume in the existing reservoir, making it available for the demand of future growth. Because there is already a DBP concern, this project is not entirely growth related, but growth is a significant driver of the project need. Therefore, it is determined that this project is 50% eligible.

*Project W14 – Distribution: Citywide Fire Protection Upgrades Project**Recommended SDC Eligibility for Project W14: 19.5%*

This project will provide fire protection throughout the City. Given that all residents will benefit equally from the improved infrastructure, it was determined that the SDC eligibility for the project should be based on the increase from the present population (Year 2019: 648 people) to the planning year population (Year 2040: 805 people).

$$\text{Project W14 SDC Eligibility} = \frac{805 \text{ people} - 648 \text{ people}}{805 \text{ people}} = 0.195 \rightarrow 19.5\% \text{ Eligible}$$

Table 3-3 below summarizes all the projects on the CIP, and memo. Table 3.3 lists the SDC eligibility and percentages for each project.

TABLE 3-3: WATER SYSTEM PROJECT SDC ELIGIBILITY SUMMARY

Project No	Project Description	Adjusted Cost Estimate	Reimbursement SDC Eligible (Y/N)	Improvement SDC Eligible (Y/N)	% SDC Eligible	SDC Eligible Cost
W1	SCADA - Restoring WTP Automation and Data Acquisition Upgrades	\$125,760	N	Y	19.5%	\$24,527
W2	SCADA - Raw Water Intake VFD and Metering Upgrades	\$11,022	N	Y	19.5%	\$2,150
W3	SCADA - Metering Upgrades	\$18,282	N	Y	19.5%	\$3,566
W4	Source - Raw Water Intake Roughing Filter	\$126,484	N	Y	19.5%	\$24,668
W5	Source - Pre-Filtration Mixing Basin	\$29,029	N	Y	19.5%	\$5,662
W6	Source - Surface Water Source Options	\$48,831	N	Y	19.5%	\$9,524
W7	Treatment - Spare Parts at water Treatment Plant	\$6,000	N	N	19.5%	\$0
W8	Treatment - Granular Activated Carbon Reactors	\$280,561	N	Y	50.0%	\$140,280
W9	Treatment - Air Compressor	\$9,000	N	Y	19.5%	\$1,755
W10	Treatment - WTP Automation Upgrades	\$12,000	N	Y	19.5%	\$2,340
W11	Treatment - Onsite Backup generator and Protective Structure	\$130,232	N	Y	19.5%	\$25,399
W12	Treatment - Sodium Hypochlorite Generator for Disinfection	\$72,254	N	Y	19.5%	\$14,092
W13	Reservoir - Mixing/aeration Upgrades for DBP Control	\$35,648	N	Y	50.0%	\$17,824
W14	Distribution - Citywide Fire Protection Upgrades Project	\$330,085	N	Y	19.5%	\$64,377
Total						\$336,163

3.6 Water System Reimbursement SDC

Oregon Law includes provisions for a reimbursement SDC to be developed for projects that have been completed and that have remaining capacity available to service growth. Since none of the project shave been completed, there is no reimbursement. Therefore, based on this methodology, the reimbursement SDC component for the water system should not exceed approximately \$0.

TABLE 3-4 WATER SYSTEM REIMBURSEMENT SDC SUMMARY

Project No.	Project Description	SDC Eligible Cost
	None	
	Total Reimbursement Eligible Costs	\$0
	Total Water System Growth EDUs	70.00
	Maximum Water System Reimbursement SDC	\$0

3.7 Water System Improvement SDC

Calculation of the improvement SDC is based upon the methodology and the establishment of the SDC eligible project costs as outlined in Section 3.5. The following table provides a summary of the total cost of SDC eligible projects on the CIP that have not yet been constructed.

Table 3-5 presents the calculation used to establish the improvement SDC for the Monroe water system.

TABLE 3-5: WATER SYSTEM IMPROVEMENT SDC SUMMARY

Project No.	Project Description	SDC Eligible Cost
W1	SCADA - Restoring WTP Automation and Data Acquisition Upgrades	\$24,527
W2	SCADA - Raw Water Intake VFD and Metering Upgrades	\$2,150
W3	SCADA - Metering Upgrades	\$3,566
W4	Source - Raw Water Intake Roughing Filter	\$24,668
W5	Source - Pre-Filtration Mixing Basin	\$5,662
W6	Source - Surface Water Source Options	\$9,524
W7	Treatment - Spare Parts at water Treatment Plant	\$0
W8	Treatment - Granular Activated Carbon Reactors	\$140,280
W9	Treatment - Air Compressor	\$1,755
W10	Treatment - WTP Automation Upgrades	\$2,340
W11	Treatment - Onsite Backup generator and Protective Structure	\$25,399
W12	Treatment - Sodium Hypochlorite Generator for Disinfection	\$14,092
W13	Reservoir - Mixing/aeration Upgrades for DBP Control	\$17,824
W14	Distribution - Citywide Fire Protection Upgrades Project	\$64,377
	Total Improvement Eligible Costs	\$336,163
	Total Water System Growth EDUs	70.00
	Maximum Water System Improvement SDC	\$4,802

Therefore, based on this methodology, the improvement components of the Monroe water system SDC should not exceed approximately \$4,802.

The combined SDC including improvement and reimbursement eligible projects totals \$4,802 not including adjustments for SDC credits or compliance costs.

3.8 Water System SDC Credits

An analysis of potential SDC credits is included as part of this SDC methodology. Credits may be appropriate to offset financing costs that will be paid by all system customers including new customers. Credits are also appropriate for developers who construct or otherwise provide improvements to the system that are part of the current CIP List. A brief description of a few potential SDC credit scenarios is provided below.

3.8.1 Improvement Offset Credit

In the case of a developer completing some or all of a CIP List project, the credit provided should be equal to the value of the improvement made, though the credit cannot exceed the SDC amount that the developer would have been required to pay.

For example: Assume that a developer undertakes a subdivision that would require him to pay \$200,000 in SDC fees for the water system. This same developer elects to construct a new waterline to service his development. As the waterline is part of the City's Water System CIP List, the developer's efforts make him eligible to receive an SDC credit for the improvements that he completed. If we assume the actual project cost to install the waterline is around \$300,000, the developer is only eligible to receive Water SDC credits up to the \$200,000 that he would have paid into SDC's.

It should be noted that determination of improvements offset credits can require some judgment as development situations can vary. The City should maintain an open policy when working with developers to identify a fair and reasonable offset credit when it applies. It should also be reiterated that offset credits are not available for improvements undertaken by the developer that do not appear on the City's CIP List and are not part of the SDC methodology.

3.8.2 Financing Credit

Financing credits should be applied to SDC's so that new users who are assessed an SDC do not end up paying twice due to new debt loads incurred by the City to undertake improvements or portions of improvements intended to increase system capacity. As growth-related debt service may be repaid with SDC revenue, it is critical that the users who have paid SDC's receive an appropriate credit for the present value of rate increases that will likely be imposed for the purposes of paying back debt.

Establishing a precise financing credit for Monroe is difficult as it is not currently known to what level the City will elect to undertake projects, how those projects will be funded, or what percentage of the project funding will require a rate increase.

It would be appropriate to provide a credit to new customers to offset the “double-dip” effects of paying an increased rate to payback a loan supporting the SDC-eligible portion of a project in addition to paying the SDC itself. For example:

Assume the City undertakes a \$1,000,000 project to construct a new facility. It is determined that the project is 50% SDC eligible and the other half of the project will be paid through a loan. The terms of the loan are as follows:

Term: 20 years (240 months)

Rate: 5%

Principal: \$1,000,000 with \$500,000 being SDC eligible

Number of EDU's setting rate of payback: Existing customer base or 640 EDU's

Assuming the City obtains the \$1,000,000 loan, a monthly rate increase of around \$10.31 per EDU would be required. Approximately \$5.15 of that increase would be to cover the SDC eligible portion of the project. New customers would be charged an SDC to pay for their share of the SDC eligible portion of the project.

To avoid charging a rate increase in addition to an SDC, a present worth analysis of the \$5.15 portion of the rate increase should be completed and a credit established. The amount of the credit will vary depending on the period of time in the planning period that the new customer joins the system and begins paying the higher rates. A range of potential credits for this example scenario is discussed below:

- 1. A new customer joins the system early in the planning period and has nearly 20 years of increased rate payments in front of them. In this case, the present worth of a \$5.15 per month rate increase over 20 years (at 5% interest) is around \$780.*
- 2. A new customer joins the system in the middle of the planning period with only 10 years of increased payments in front of them. Under this scenario, the present worth of a \$5.15 rate increase over 10 years (at 5% interest) is around \$486.*
- 3. A new customer joins the system toward the end of the planning period with only 5 years remaining in the 20-year planning cycle. Under this scenario, the present worth of a \$5.15 rate increase over the remaining 5 years (at 5% interest) is around \$273.*

The amount of the credit that would be appropriate to offset the “double-dip” effect of a rate increase and an SDC varies with the following:

1. *The amount of the loan and the resulting rate increase required to pay it back*
2. *The percentage of SDC eligibility for a specific project*
3. *The number of years remaining within the planning period or the remaining term left on the loan payback*

Should the City elect to offer an SDC credit to offset a “double-dip” effect, a credit schedule should be established once a project is undertaken, a loan obtained, and a rate increase set to pay back the loan. A simple schedule can be established that varies based on years or months of time into the loan terms. When a new customer joins the system, the City can simply review the credit schedule for each affected project and total up each credit depending on the month that the new customer joins the system.

3.9 Water System SDC Summary

Section 3 has been developed to provide the City of Monroe with the methodology needed to establish the maximum allowable SDC's for the water treatment and distribution system. The following table provides a summary of the information used to complete this analysis. The SDC credit summary calculations were completed assuming a 3% annual interest rate.

TABLE 3-6: WATER SYSTEM SDC SUMMARY PER EDU (BEFORE COMPLIANCE COSTS)

SDC Component	SDC Amount
Improvement Fee (per EDU)	\$4,802
Reimbursement Fee (per EDU)	\$0
Subtotal of Water System SDC Fees (per EDU)	\$4,802
SDC Credit Summary	
Upper Range Credit (100% Financing)	\$775
Mid Range Credit (75% Financing Credit)	\$581
Mid Range Credit (50% Financing Credit)	\$387
Low Range Credit (25% Financing Credit)	\$194

The maximum defensible SDC for the water treatment and distribution system is \$4,802 per EDU without the application of an SDC credit or SDC compliance costs. It should be reiterated that this calculation only represents the maximum SDC's that can be assessed and defended with proper methodology. The City has the autonomy to charge less than this amount if desired; however, if adequate SDC's are not collected and projects must be undertaken to satisfy growth requirements, funds will have to be obtained from sources such as user rate increases.

3.10 Water System SDC Assessment Schedule

The Water System SDC recommended in Section 3.9 is based on a cost per EDU or cost per single residential dwelling. For most non-residential developments, a plan review must be performed to determine the equivalent number of EDU's the development will require.

The following tables should be used to assess Water System SDC's for both residential and non-residential customers who wish to connect to the Monroe water system.

TABLE 3-7: ASSESSMENT SCHEDULE FOR WATER AND WASTEWATER SYSTEM SDC'S

Enterprise	Number of EDU's	Units
Apartments	0.75	per dwelling unit (EDU)
Apparel Store	0.2	per 1,000 ft ²
Athletic Club	0.3	per 1,000 ft ²
Auto Care	0.1	per service bay
Auto Parts Sales	0.2	per 1,000 ft ²
Auto Sales	0.2	per 1,000 ft ²
Bank, Drive-in	0.3	per 1,000 ft ²
Bank, Walk-in	0.3	per 1,000 ft ²
Building Material and Lumber Store	0.2	per 1,000 ft ²
Cab Company	0.2	per 1,000 ft ²
Car Wash, Automated	na	See meter sizing assessment in Table 3.9
Car Wash, Self Service	0.7	per stall
Cemetery	0.2	per 1,000 ft ²
Church	0.2	per 1,000 ft ²
Community/Junior College	1	Per 250 gross square ft ²
Convenience Market (Open 24 Hours)	0.2	per 1,000 ft ²
Convenience Market (Open 15-16 Hours)	0.2	per 1,000 ft ²
Convenience Market with Gasoline Pumps	0.2	per 1,000 ft ²
	0.1	per pump
Day Care	0.2	per student
Drinking Establishment	0.7	per 1,000 ft ²
Furniture Store	0.2	per 1,000 ft ²
Hardware/Paint	0.2	per 1,000 ft ²
Health/Fitness Club	0.3	per 1,000 ft ²
Hospital	1	See meter sizing assessment in Table 3.9
Industrial	1	See meter sizing assessment in Table 3.9
Library	0.2	per 1,000 ft ²
Lodge/Fraternal	0.3	per 1,000 ft ²
Manufacturing	0.2	per 1,000 ft ²
Medical/Dental Office	0.4	per 1,000 ft ²
Mini-warehouse Storage and warehouses	0.1	per 1,000 ft ²
Mobil Home Park	0.75	Per dwelling unit
Motel (not including laundry facilities or pools)	0.3	per room
Nursery Garden Center	0.2	per 1,000 ft ²
Nursing Home	0.3	per bed
Office Building	0.2	per 1,000 ft ²
Retail establishment, shopping center, grocery, etc.	0.2	per 1,000 ft ²
Post Office	0.2	per 1,000 ft ²
Quick Lubrication Vehicle Stop	0.1	per bay
Recreational Facility, Multipurpose	0.3	per 1,000 ft ²
Restaurant, any type	4	per 1,000 ft ²
Schools	1.4	Per 250 gross square ft ²
Service Station	0.1	per bay
Service Station w/Convenience Market	0.1	per pump
	0.2	per 1,000 ft ²
Townhouse/Condo/Duplex	1	per unit
Single Family Detached Housing	1	per house
Pools and aquatic facilities	na	See meter sizing assessment in Table 3.9
Brewery	na	See meter sizing assessment in Table 3.9
Movie Theatre	0.3	per 100 seats
Commercial/Coin-Op Laundry	1	Per washing machine

TABLE 3-8: EQUIVALENCY TABLE TO CONVERT WATER METER SIZE TO EDU'S

Meter Size	Hydraulic Capacity Factor	No. of EDU's
3/4"	1	1
1"	1.67	1.7
1-1/2"	3.33	3.3
2"	5.33	5.3
3"	10.67	10.7
4"	16.67	16.7
6"	33.33	33.3
8"	53.33	53.3
10"	76.67	76.7

When a specific land use is not included in Table 3-7 or if the table does not fit the application well, Table 3-8 can be used to convert the meter size of a new customer into an equivalent EDU amount. Staff should review the new customer's land use plans carefully to ensure that the proper meter size is being utilized by the new property.

3.11 Appeal Process for EDU Assessment Calculation

While Table 3-7 and Table 3-8 include a wide assortment of residential and non-residential customer types and meter size estimates with corresponding estimates of the number of EDU's that should be associated with a new customer, it's difficult to address all potential customers through simple tables. Furthermore, the assessment system may not fairly represent a new customer's actual impact on the water system. This is often the case in the commercial or industrial developments where water use varies greatly from one business to another. In these cases, the City may choose to allow for an appeal process so that new customers are assessed at a fair and reasonable rate.

The following discussion provides a sample appeal process which may be used in Monroe when it is deemed appropriate by the City:

A single EDU in Monroe is assumed to be a water demand of around 3,970 gallons per month on average. If a new customer disagrees with the assessment that is calculated using Table 3-7, they may be allowed to appeal the assessment and request a trial period to track water use and compare their own water consumption (and therefore their equivalent water demand) to the average City water usage per EDU. If time allows, a full year should be used to develop an average for the new customer. The average monthly

water consumption of the new customer should be compared against the City's typical average. If this results in a lower EDU rating, an adjustment to the assessment could be made.

The City may wish to hold an SDC deposit during the appeal period. The amount of the deposit should be established by the City. A reasonable deposit amount equal to one-half ($1/2$) the amount estimated using Table 3-7, may be appropriate. Depending on the results of the water use study, the new user may either receive a refund of some of the SDC payment or be required to pay additional SDC costs.

A specific example of the above appeal process follows:

A new restaurant wishes to open in Monroe. Through a plan review, it is determined that the restaurant has 2,000 square feet of floor space. Based on Table 3-7 the assessment to the restaurant would be for 8 EDU's.

The restaurant owner protests and appeals this calculation. They are assessed for 4 EDU's as a deposit and can track the water use during their first year in operation. At the end of this period, they produce water bills showing that they used an average of 30,000 gallons per month. This equates to around 7.03 EDU's of water use. The restaurant is charged for an additional 3.03 EDU's worth of water system SDC's. Through the appeal process, the restaurant reduced the SDC assessment for water by 0.97 EDU's.

The inclusion of an appeal process will necessitate additional administration of individual customer SDC issues and may increase the costs associated with SDC compliance and administration. Appeals should only be considered for non-residential customers.

For the residential sector, it is recommended that the City keep the assessment method as simple as possible. Each new home should be assessed on a single EDU basis with no adjustments to be made for square footage, fixture counts, or other more complex methods.



4 WASTEWATER SYSTEM SDC METHODOLOGY

4.1 Introduction

This section describes in detail the background information, calculations, and methodology used to develop the maximum defensible SDC for the City of Monroe Wastewater System. The wastewater system consists of both the collection system and the treatment system. The wastewater collection system conveys raw sewage from the point of generation to the wastewater treatment plant where the treatment system breaks down and disinfects waste in compliance with regulatory permits. This section describes the existing and future capacity requirements of the system, identifies projects required to address system deficiencies and future capacity requirements, and estimates costs associated with those projects.

Existing and future equivalent dwelling units for assessment of the SDC's, as described in Section 3.10 for the water system, will also be used in this Section for the wastewater system. A calculation of the maximum defensible SDC per EDU for the wastewater system is developed herein.

4.2 Wastewater System Overview

The following planning documents were used as the basis for developing Wastewater System SDC fees.

- 2016 City of Monroe Wastewater Master Plan; Prepared by Civil West Engineering Services (Including 2019 update)
- 1999 City of Monroe Evaluation of Wastewater Collection System; Prepared by Southwood Engineering

Both plans include a CIP list, and SDC eligibility has been included for all projects incorporated into this document.

4.2.1 Wastewater System Description and Background

The City of Monroe owns and maintains a wastewater system for the collection, conveyance, and treatment of municipal wastewater. The system is composed of gravity sewer piping and manholes, one wastewater lift station and its associated force main, a wastewater treatment

facility, and an outfall for discharging treated effluent into the Long Tom River from November through April. The treatment ponds are sized to allow for storage of the effluent during the summer months.

Portions of the wastewater collection system were constructed in 1914, and were replaced with PVC pipes in the 1980's. The original lift station was installed in 1967 and demolished and replaced in 2007 in response to occasional discharges of untreated water into the Long Tom River. The original wastewater treatment facility was completed with the lift station and upgraded in 2009, consisting of three treatment ponds and a chlorine contact chamber. Anticipated development and regulatory pressures, along with high levels of inflow and infiltration in the existing collection system, have necessitated planning for upgrades to the wastewater treatment facilities in the coming planning period.

4.2.2 Service Population

The City of Monroe's wastewater treatment plant currently services all of the developed area within the City limits. Based on the most recent Census data, the wastewater system provides sanitary service to approximately 648 persons.

4.3 EDU Methodology and Projected Growth

A summary of the SDC methodology for the wastewater system is provided below:

- Existing Wastewater EDU's: 337
- Projected EDU's (20-yr): 407
- Growth Potential (EDU's): 70

These numbers suggest an annual average increase of 3.5 EDU per year for the duration of the planning period; however, the population growth projections presented in Table 3-1 suggest higher rates of EDU increase until 2020 followed by a decrease in the EDU growth rate.

4.4 Capital Improvement Project List and Project Costs

The City's 2016 Wastewater Master Plan includes detailed planning and project costs for many capital improvements in the wastewater system. These range from piping improvements to lift station upgrades. The following sections provide information on the projects that appear on the City's current Wastewater System CIP List.

Table 4-1 below summarizes the capital improvement projects developed, the original project cost estimates, and the updated project cost estimates based on increases in the ENR Construction Cost Index. The projects are discussed in the Wastewater System Capital Improvement Project List Technical Memorandum included in Appendix A.

TABLE 4-1: WASTEWATER SYSTEM CAPITAL IMPROVEMENT PROJECT LIST

Project No.	Project Description	Project Cost Estimate	Project Cost Date	ENR CCI of Estimate	Current ENR CCI	Adjusted Cost Estimate
WW1	Lift Station Upgrade	\$692,546	2014	9806	11268.48	\$795,833
WW2	Force Main Replacement	\$442,038	2014	9806	11268.48	\$507,964
WW3	Replacement of Sewer with Larger Diameter Pipe	\$87,818	2014	9806	11268.48	\$100,915
WW4	New Screening System	\$372,869	2014	9806	11268.48	\$428,479
WW5	New Pipes Connecting Basins	\$150,927	2014	9806	11268.48	\$173,436
WW6	Sewer Pipe Repairs	\$34,380	2014	9806	11268.48	\$39,507
WW7	Manhole Repairs	\$17,190	2014	9806	11268.48	\$19,754
WW8	Connection Repairs	\$8,250	2014	11268	11268.48	\$71,991
WW9	Alternative 1 Diffused Aeration System	\$408,746	2019	11268	11268.48	\$408,746
WW10	Emergency Power	\$83,325	2019	11268	11268.48	\$83,329
WW11	Telemetry	\$8,250	2019	11268	11268.48	\$8,250
Total						\$2,638,206

The CIP list above includes the date when the original project cost estimates were prepared. Another column is provided indicating the corresponding ENR Construction Cost Index for the original cost estimate.

4.5 Project SDC Eligibility

Some projects included on the City's Wastewater System CIP List are maintenance and operations projects or capacity-replacing projects that have limited-to-no additional capacity. Each project on the Wastewater System CIP List was evaluated to determine the percentage of the project cost that can accommodate future growth to the system. The following describes the eligibility determination process used for each project on the Wastewater System CIP List.

*Project WW1 – Lift Station Upgrade**Recommended SDC Eligibility for Project WW1: 19.5%*

This project reuses and retrofits the existing wet well and valve vault, with the replacement of the existing pumps, drives, and generator. Currently, the lift station has a design firm capacity of 688 gpm, which is inadequate for the current total peak instantaneous flow (PIF) of 1,212 gpm. Lift stations must be designed to pump to the future PIF, and projected flows for this lift station reach a peak instantaneous flow of 1,221 gpm. Given that all residents will benefit equally from the improved infrastructure, it was determined that the SDC eligibility for the project should be based on the increase from the present population (Year 2019: 648 people) to the planning year population (Year 2040: 805 people).

$$\text{Project W1 SDC Eligibility} = \frac{805 \text{ people} - 648 \text{ people}}{805 \text{ people}} = 0.195 \rightarrow 19.5\% \text{ Eligible}$$

*Project WW2 – Force Main Replacement**Recommended SDC Eligibility for Project WW2: 19.5%*

The construction of a new force main is recommended due to the age of the current pipe and the insufficient flow capacity. The 6-inch force main for the lift station has a realistic maximum flow of 800 gpm and is below both the current and projected peak flows (1,212 gpm and 1,221 gpm respectively). Given that all residents will benefit equally from the improved infrastructure, it was determined that the SDC eligibility for the project should be based on the increase from the present population (Year 2019: 648 people) to the planning year population (Year 2040: 805 people).

$$\text{Project W2 SDC Eligibility} = \frac{805 \text{ people} - 648 \text{ people}}{805 \text{ people}} = 0.195 \rightarrow 19.5\% \text{ Eligible}$$

*Project WW3 – Replacement of Sewer with Larger Diameter Pipe**Recommended SDC Eligibility for Project WW3: 19.5%*

Based on the flow capacity analysis, the sewer mainlines with the highest percent capacity in use for future flows have been identified. Sewer mainlines above 90% capacity may be undersized to handle future projected flows and should be replaced. One sewer mainline has been identified at 91% capacity in use for projected flows, and thus, undersized. To achieve an

acceptable capacity for future flows, the current 10" pipe should be replaced with a 12" pipe. The increase in capacity is SDC eligible and is calculated as the difference in pipe area. (12" pipe = 113 s.i. and 10" pipe = 78.5 s.i.)

$$\text{Project W3 SDC Eligibility} = \frac{113 \text{ s.i.} - 78.5 \text{ s.i.}}{78.5 \text{ s.i.}} = 0.439 \rightarrow 43.9\% \text{ Eligible}$$

Project WW4 – New Screening System

Recommended SDC Eligibility for Project WW4: 19.5%

The addition of a screening system improves preliminary treatment at the headworks and prevents excessive wear downstream. Currently there is no existing preliminary treatment system, so an automated fine screening system rated at the peak design flow of 1,221 gpm is recommended. Given that all residents will benefit equally from the improved infrastructure, it was determined that the SDC eligibility for the project should be based on the increase from the present population (Year 2019: 648 people) to the planning year population (Year 2040: 805 people).

$$\text{Project WW4 SDC Eligibility} = \frac{805 \text{ people} - 648 \text{ people}}{805 \text{ people}} = 0.195 \rightarrow 19.5\% \text{ Eligible}$$

Project WW5 – New Pipes Connecting Basins

Recommended SDC Eligibility for Project WW5: 19.5%

The existing basins work well during normal operating conditions but are undersized for the transfer of peak flows. Installation of additional pipes will prevent the bypassing of flows and will improve operations and maintenance. Given that all residents will benefit equally from the improved infrastructure, it was determined that the SDC eligibility for the project should be based on the increase from the present population (Year 2019: 648 people) to the planning year population (Year 2040: 805 people).

$$\text{Project WW5 SDC Eligibility} = \frac{805 \text{ people} - 648 \text{ people}}{805 \text{ people}} = 0.195 \rightarrow 19.5\% \text{ Eligible}$$

Project WW6 – Sewer Pipe Repairs

Recommended SDC Eligibility for Project WW6: 0%

Improvements to the gravity systems existing collection pipes include replacement, grouting laterals at main, stop repairs, and lateral connection replacements. Since these repairs are maintenance based, they do not provide additional service capacity. Therefore, this project is 0% SDC eligible.

*Project WW7 – Manhole Repairs**Recommended SDC Eligibility for Project WW7: 0%*

Improvements to the gravity systems existing manholes include replacement, lining, patches, and grouting. Since these repairs are maintenance based, they do not provide additional service capacity. Therefore, this project is 0% SDC eligible.

*Project WW8 – Connection Repairs**Recommended SDC Eligibility for Project WW8: 0%*

Improvements to the gravity systems existing service connections include connection repairs, illegal storm sewer connections, and damages service lines. Since these repairs are maintenance based, they do not provide additional service capacity. Therefore, this project is 0% SDC eligible.

*Project WW9 – Alternative 1 Diffused Aeration System**Recommended SDC Eligibility for Project WW9: 50%*

Improvements to the WWTF will help reduce BOD in the effluent and expand capacity in the plant. Given that this project will correct current deficiencies at the WWTF and expand capacity for the future, this project is 50% SDC eligible.

*Project WW10 – Emergency Power**Recommended SDC Eligibility for Project WW10: 50%*

Improvements to the emergency power the WWTF will help facilitate the Alternative 1 recommendation in the event of a power outage. Given that this project will correct current deficiencies at the WWTF and expand capacity for the future, this project is 50% SDC eligible.

Project WW11 – Telemetry

Recommended SDC Eligibility for Project WW11: 50%

Improvements to the telemetry will help monitor the new equipment described in Alternative 1. Given that this project will correct current deficiencies at the WWTF and expand capacity for the future, this project is 50% SDC eligible.

Descriptions of all projects included in the Wastewater System CIP List are provided in the Wastewater System Capital Improvement List Technical Memorandum included in Appendix A. Table 4-2 provides a summary of the Wastewater System CIP List and the SDC eligibility that should be considered for each project based on the analysis presented above.

TABLE 4-2: WASTEWATER SYSTEM PROJECT SDC ELIGIBILITY SUMMARY

Project No.	Project Description	Adjusted Cost Estimate	Reimbursement SDC Eligible (Y/N)	Improvement SDC Eligible (Y/N)	% SDC Eligible	SDC Eligible Cost
WW1	Lift Station Upgrade	\$795,833	N	Y	19.5%	\$155,212
WW2	Force Main Replacement	\$507,964	N	Y	19.5%	\$99,069
WW3	Replacement of Sewer with Larger Diameter Pipe	\$100,915	N	Y	43.9%	\$44,302
WW4	New Screening System	\$428,479	N	Y	19.5%	\$83,567
WW5	New Pipes Connecting Basins	\$173,436	N	Y	19.5%	\$29,435
WW6	Sewer Pipe Repairs	\$39,507	N	N	0%	\$0
WW7	Manhole Repairs	\$19,754	N	N	0%	\$0
WW8	Connection Repairs	\$71,991	N	N	0%	\$0
WW9	Alternative 1 Diffused Aeration System	\$408,746	N	Y	50.0%	\$204,373
WW10	Emergency Power	\$83,329	N	Y	50.0%	\$41,663
WW11	Telemetry	\$8,250	N	Y	50.0%	\$4,125
Total						\$661,745

4.6 Wastewater System Reimbursement SDC

The Oregon Revised Statutes include provisions for a reimbursement SDC to be developed for projects that have been completed and that have remaining capacity available to service growth. This section establishes the methodology and the charge for Wastewater System Reimbursement SDC's.

A summary of the recommended reimbursement SDC for the Wastewater System is provided below:

TABLE 4-3: WASTEWATER SYSTEM REIMBURSEMENT SDC SUMMARY

Project No.	Project Description	SDC Eligible Cost
	None	\$0
	Total Reimbursement Eligible Costs	\$0
	Total Wastewater System Growth EDUs	70.00
	Maximum Wastewater System Reimbursement SDC	\$0

Based on this analysis, there should be no reimbursement SDC for the wastewater system.

4.7 Wastewater System Improvement SDC

Calculation of the improvement SDC is based on the methodology and the establishment of the SDC eligible project costs as outlined earlier in this section. The following table summarizes the total cost of SDC eligible projects recommended in the referenced Wastewater Facilities Planning documents that have not yet been constructed.

TABLE 4-4: WASTEWATER SYSTEM IMPROVEMENT SDC SUMMARY

Project No.	Project Description	SDC Eligible Cost
WW1	Lift Station Upgrade	\$155,212
WW2	Force Main Replacement	\$99,069
WW3	Replacement of Sewer with Larger Diameter Pipe	\$44,302
WW4	New Screening System	\$83,567
WW9	Alternative 1 Diffused Aeration System	\$204,373
WW10	Emergency Power	\$41,663
WW11	Telemetry	\$4,125
	Total Improvement Eligible Costs	\$632,310
	Total Wastewater System Growth EDUs	70.00
	Maximum Wastewater System Improvement SDC	\$9,033

Based on this methodology, a Wastewater System Improvement SDC should not exceed \$9,033 per EDU.

This SDC recommendation does not account for SDC credits or compliance costs.

4.8 Wastewater System SDC Credits

An analysis of potential SDC credits should be included as part of an SDC methodology. Credits may be appropriate to offset financing costs that will be paid by all system customers including new customers. Credits are also appropriate for developers that construct or otherwise provide improvements to the system that are part of the current CIP project list. A brief description of potential SDC credit scenarios is provided below:

4.8.1 Improvement Offset Credit

In the case of a developer completing some or all of a CIP List project, the credit provided should be equal to the value of the improvement made. The credit cannot exceed the amount of SDC that the developer would have been required to pay.

For example: Assume that a developer undertakes a subdivision that would require him to pay \$200,000 in Wastewater System SDC fees. This same developer elects to construct a sewer lift station to service the development and other potential growth areas. As the lift station is part of the City's Wastewater System CIP, the developer is eligible to receive an SDC credit for a portion of the improvements that were completed. If the actual construction cost of the lift station is \$500,000, the developer is only eligible to receive Wastewater SDC credits up to the \$200,000.

It should be noted that determination of improvements offset credits can require some judgment as development situations can vary. The City should maintain an open policy when working with developers to identify fair and reasonable offset credit when they apply. It should also be reiterated that offset credits are not available for improvements undertaken by the developer that do not appear on the City's CIP List and are not part of the City's SDC methodology.

4.8.2 Financing Credit

It may also be appropriate to provide a credit to offset the "double-dip" effect that could result from a new customer paying an SDC as well as increased rates for the same improvement project.

Section 3.8.2 of this methodology includes a discussion of how a financing credit may be applied. Once the City undertakes a project and raises rates to pay for the project, it may consider developing an SDC credit schedule for each project undertaken. The amount of the credit will vary.

4.9 Wastewater System SDC Summary

Section 4 has been developed to provide the City with the methodology needed to establish the maximum defensible Wastewater System SDC. The following table summarizes the information used to complete this analysis:

TABLE 4-5: WASTEWATER SYSTEM SDC SUMMARY PER EDU (BEFORE COMPLIANCE COSTS)

SDC Component	SDC Amount
Improvement Fee (per EDU)	\$9,033
Reimbursement Fee (per EDU)	\$0
Subtotal of Wastewater System SDC Fees (per EDU)	\$9,033
SDC Credit Summary	
Upper Range Credit (100% Financing)	\$1,964
Mid Range Credit (75% Financing Credit)	\$1,473
Mid Range Credit (50% Financing Credit)	\$982
Low Range Credit (25% Financing Credit)	\$491

The maximum defendable Wastewater System SDC is \$9,033 per EDU without the application of an SDC credit or compliance costs. This calculation represents the maximum SDC that can be assessed and defended with proper methodology. While the City has the autonomy to adjust this charge, if adequate SDC fees are not collected other funding sources will be required to undertake projects necessary to accommodate growth.

4.10 Wastewater System SDC Assessment Schedule

The wastewater system SDC established in Section 4.9 above is based on a cost per EDU or cost per single residential dwelling. For non-residential developments, a plan review must be performed to determine the equivalent number of EDU's of the development. Table 3-7 and Table 3-8, in the Water System SDC methodology should be used to assess wastewater system SDC's for both residential and non-residential customers.

As discussed in Section 3.10, the water/sewer values indicated in Table 3-7 represent a wide assortment of residential and non-residential customer types along with estimates of the number of EDU's that should be associated with each. The table does not address all potential customers; therefore, the assessment system may not fairly represent a new customer's actual impact on the water and wastewater systems. In these cases, it is recommended that the City allow for an appeal process as described in Section 3.11. The appeal process includes the assessment of at least a partial SDC based on the calculated development EDU's and collection of additional fees later following review of the facility's actual water usage.



5 STORM DRAINAGE SDC METHODOLOGY

5.1 Introduction

This section provides background information, calculations, and the methodology used to identify the maximum defensible Storm Drainage System SDC for the City of Monroe. This section identifies the existing and future capacity requirements of the storm drainage system and summarizes the City's Storm Drainage System CIP.

This section also develops a method for determining the system population or input based on an impervious surface methodology. It projects future capacity requirements based on an assumed increase in impervious surface area.

5.2 Storm Drainage System Overview

The following planning documents were used as the basis for developing Storm Drainage System SDC fees.

- 2015 City of Monroe Storm Water Master Plan; Prepared by Civil West Engineering Services

This plan includes a CIP list, and SDC eligibility has been included for all projects incorporated into this document.

5.2.1 Overall System Description

The City's storm drainage system consists of a network of ditches, piping, manholes, catch basins, swales, and outfalls. Piping ranges from small 4-inch laterals to large culverts. In general, the storm drainage system has evolved in response to needs and drainage problems that have arisen.

The City funds maintenance and development of the storm drainage system through a variety of sources. The current stormwater utility base rate for one residential utility customer in Monroe is \$6.00 per month.

5.2.2 Service Population

The impact of growth on the storm drainage system is based on an impervious surface methodology. In general, this methodology will determine how much impervious surface a typical EDU will add to the system. The impervious surface planned for new development can be compared against this typical value to calculate how many EDU's are being added to the storm drainage system.

5.3 EDU Methodology and Projected Growth

This section describes the method used to establish the growth component of the Storm Drainage System SDC.

Impervious surface areas include such categories as:

- Roof areas
- Driveways
- Sidewalks
- Patios and impervious decks
- Out buildings
- Swimming pools
- Any other improvement which will result in water running off the property

Impervious surface area per typical residential dwelling is approximately 3,747 square feet. This includes the area of impervious surface around the residence, and the impervious area of the street frontage.

Section 4 presents the growth potential of the wastewater system. Accordingly, it is estimated that 70 EDU's will be added to the sewer system during the planning period. It is reasonable to assume that each EDU added will have a typical amount of impervious surface that will also be added to the system and will also impact the storm drainage system. Therefore:

$$70 \text{ New EDUs} \times 3,747 \frac{\text{Impervious SF}}{\text{EDU}} = 262,290 \text{ SF New Impervious Surface}$$

Therefore, the growth potential for Storm Drainage System SDC methodology is summarized as:

- 3,747 square feet per new EDU

- Approximately 70 EDU's added to the system
- Approximately 262,290 square feet of impervious surface added to the system
- Approximately 6 acres of impervious surface added to the system

5.4 Capital Improvement Project List and Project Costs

The capital improvements for the City's storm drainage were determined from the 2015 Storm Water Master Plan that included project items and estimated costs. These range from piping improvements to outfall replacements. The following sections provide information on the projects that appear on the City's current Stormwater Drainage System CIP List. The projects and recommendations are described in the Storm Drainage System Capital Improvement Project List Technical Memorandum provided in Appendix A.

Table 5-1 summarizes the projects included on the Storm Drainage System CIP List and provides estimated costs for those projects.

TABLE 5-1: STORM DRAINAGE SYSTEM CAPITAL IMPROVEMENT PROJECT LIST

Project No.	Project Description	Project Cost Estimate	Project Cost Date	ENR CCI of Estimate	Current ENR CCI	Adjusted Cost Estimate
S1	587' of Culvert Improvements Along Ash Street	\$91,460	2014	9936	11268.48	\$103,726
S2	701' Outfall Pipe Replacement-East of Pine Street	\$299,187	2014	9936	11268.48	\$339,310
S3	641' Outfall Pipe Replacement-North of Kelly Street	\$301,868	2014	9936	11268.48	\$342,350
S4	12"-24" Pipe Improvements Along S. 9th & Orchard Street	\$206,428	2014	9936	11268.48	\$234,111
S5	12"-24" Pipe Improvements Along Commercial and Main St.	\$478,526	2014	9936	11268.48	\$542,699
Total						\$1,562,197

5.5 Project SDC Eligibility

The SDC methodology must indicate the percentage of each project's cost that can be attributed as necessary for growth and is SDC eligible. SDC's must be based on a project's cost or the portion of a project's cost that is necessary to add system capacity in response to or in anticipation of growth. Appendix A describes each project listed on the Storm Drainage System CIP List and the method for determining SDC eligibility is provided below.

Project S1 – 587' of Culvert Improvements Along Ash Street

Recommended SDC Eligibility for Project S2: 19.5%

Much of Basin B drains down Ash Street, despite an undersized system and an unmaintained ditch-line. The north side of the street needs to be able to convey 8.54 cfs, while the south side must convey 10.43 cfs. Given that the pipes are unable to convey existing and future flows and that all residents will benefit equally from the improved infrastructure, it was determined that the SDC eligibility for the project should be based on the increase from the present population (Year 2019: 648 people) to the planning year population (Year 2040: 805 people).

$$\text{Project W1 SDC Eligibility} = \frac{805 \text{ people} - 648 \text{ people}}{805 \text{ people}} = 0.195 \rightarrow 19.5\% \text{ Eligible}$$

Project S2 – 701' Outfall Pipe Replacement-East of Pine Street

Recommended SDC Eligibility for Project S3: 19.5%

The railroad crossing and outfall pipe lack capacity to convey the runoff from a 25-year storm event of 29.77 cfs and 39.19.5 cfs, respectively. Currently, both pipes are only able to convey 20.93 cfs. Given that the pipes are unable to convey existing and future flows and that all residents will benefit equally from the improved infrastructure, it was determined that the SDC eligibility for the project should be based on the increase from the present population (Year 2019: 648 people) to the planning year population (Year 2040: 805 people).

$$\text{Project W1 SDC Eligibility} = \frac{805 \text{ people} - 648 \text{ people}}{805 \text{ people}} = 0.195 \rightarrow 19.5\% \text{ Eligible}$$

Project S3 – 641' Outfall Replacement-North of Kelly Street

Recommended SDC Eligibility for Project S4: 19.5%

All the runoff collected in Basin C is delivered to an undersized culvert that is built up with sediment. The runoff delivers approximately 25.38 cfs to a 15" pipe with a capacity of 4.24 cfs. In addition, the outfall pipe is limited to 14.19 cfs while needing to convey approximately 29.87 cfs. Given that the pipes are unable to convey existing and future flows, and that all residents will benefit equally from the improved infrastructure, it was determined that the SDC eligibility for the project should be based on the increase from the present population (Year 2019: 648 people) to the planning year population (Year 2040: 805 people).

$$\text{Project W1 SDC Eligibility} = \frac{805 \text{ people} - 648 \text{ people}}{805 \text{ people}} = 0.195 \rightarrow 19.5\% \text{ Eligible}$$

*Project S4 – 12"-24" Pipe Improvements Along S. 9th & Orchard Street**Recommended SDC Eligibility for Project S5: 19.5%*

Basin D holds the most expansive storm drain system of all the basins, where a majority of the system within the City boundaries is piped. The pipe along 9th only has a capacity of 0.56 cfs, while needed to facilitate a runoff flow of 5.10 cfs. Given that the drainage is unable to convey existing and future flows, and that all residents will benefit equally from the improved infrastructure, it was determined that the SDC eligibility for the project should be based on the increase from the present population (Year 2019: 648 people) to the planning year population (Year 2040: 805 people).

$$\text{Project W1 SDC Eligibility} = \frac{805 \text{ people} - 648 \text{ people}}{805 \text{ people}} = 0.195 \rightarrow 19.5\% \text{ Eligible}$$

*Project S5 – 12"-24" Pipe Improvements Along Commercial St. & Main St.**Recommended SDC Eligibility for Project S6: 19.5%*

The second point of lacking capacity is at the intersection of S. 8th St. and Main Street and downstream along Commercial Street. At this point, the runoff flow is 7.28 cfs and the capacity of the pipe is currently 3.60 cfs. Given that the drainage is unable to convey existing and future flows, and that all residents will benefit equally from the improved infrastructure, it was determined that the SDC eligibility for the project should be based on the increase from the present population (Year 2019: 648 people) to the planning year population (Year 2040: 805 people).

$$\text{Project W1 SDC Eligibility} = \frac{805 \text{ people} - 648 \text{ people}}{805 \text{ people}} = 0.195 \rightarrow 19.5\% \text{ Eligible}$$

A summary of the SDC eligibilities for all projects on the Storm Drainage System CIP List is provided in Table 5-2.

TABLE 5-2: STORM DRAINAGE SYSTEM SDC ELIGIBILITY SUMMARY

Project No	Project Description	Adjusted Cost Estimate	Reimbursement SDC Eligible (Y/N)	Improvement SDC Eligible (Y/N)	% SDC Eligible	SDC Eligible Cost
S1	587' of Culvert Improvements Along Ash Street	\$103,726	N	Y	19.5%	\$20,230
S2	701' Outfall Pipe Replacement-East of Pine Street	\$339,310	N	Y	19.5%	\$66,176
S3	641' Outfall Pipe Replacement-North of Kelly Street	\$342,350	N	Y	19.5%	\$66,769
S4	12"-24" Pipe Improvements Along S. 9th & Orchard Street	\$234,111	N	Y	19.5%	\$45,659
S5	12"-24" Pipe Improvements Along Commercial and Main St.	\$542,699	N	Y	19.5%	\$105,843
Total						\$304,677

5.6 Storm Drainage Reimbursement SDC

None of the projects in the Storm Drainage System CIP List are eligible for a reimbursement SDC.

TABLE 5-3: STORM DRAINAGE SYSTEM REIMBURSEMENT SDC SUMMARY

Project No.	Project Description	SDC Eligible Cost
	None	\$0
	Total Reimbursement Eligible Costs	\$0
	Total Storm Drainage System Growth EDUs	70.00
	Maximum Storm Drainage System Reimbursement SDC	\$0

Therefore, the recommended Storm Drainage System Reimbursement SDC is \$0.

5.7 Storm Drainage Improvement SDC

Calculation of the Storm Drainage System Improvement SDC is based on the methodology and the establishment of the SDC eligible project costs as previously described. Table 5-4 summarizes the total cost of SDC eligible projects discussed in this methodology that have not been constructed. The ENR Construction Cost Index was used to adjust historically estimated costs to current (2019) dollars.

TABLE 5-4: STORM DRAINAGE SYSTEM IMPROVEMENT SDC SUMMARY

Project No.	Project Description	SDC Eligible Cost
S1	587' of Culvert Improvements Along Ash Street	\$20,230
S2	701' Outfall Pipe Replacement-East of Pine Street	\$66,176
S3	641' Outfall Pipe Replacement-North of Kelly Street	\$66,769
S4	12"-24" Pipe Improvements Along S. 9th & Orchard Street	\$45,659
S5	12"-24" Pipe Improvements Along Commercial and Main St.	\$105,843
	Total Improvement Eligible Costs	\$304,677
	Total Storm Drainage System Growth EDUs	70.00
	Maximum Storm Drainage System Improvement SDC	\$4,353

Based on this analysis, a typical EDU in Monroe will pay \$4,353 for the Storm Drainage System Improvement SDC based on an average impervious surface area of 3,747 square feet per EDU. This equates to a unit charge of \$1.16 per square foot of impervious surface area.

5.8 Storm Drainage System SDC Credits

An analysis of potential SDC credits should be included as part of any SDC methodology. Credits may be appropriate to offset financing costs that will be paid by all system customers including new customers. Credits are also appropriate for developers that construct or otherwise provide improvements to the storm drainage system that are part of the current CIP list. Brief descriptions of potential SDC credit scenarios are provided in the following sections.

5.8.1 Improvement Offset Credit

In the case of a developer constructing some or all of a CIP List project, the credit provided should be equal to the value of the improvement made. The credit cannot exceed the amount of SDC that the developer would have been required to pay.

For example: Assume that a developer undertakes a subdivision that would require him to pay \$50,000 in SDC fees for the storm drainage system. If the same developer undertakes all or a portion of a stormwater improvement project that appears on the CIP list, the developer should be eligible for some level of SDC credit for the value of the completed project. If the storm drainage project costs the developer more than \$50,000 to complete, the developer is only eligible for a Storm Drainage Improvement SDC offset credit of \$50,000.

It should be noted that determination of improvement offset credits can require professional judgment as development situations vary widely. The City should maintain an open policy when working with developers to identify fair and reasonable improvement offset credits when they apply. It should also be reiterated that offset credits are not available for improvements undertaken by the developer that do not appear on the City's CIP list and are not part of the City's SDC methodology.

5.8.2 Financing Credit

The City currently charges a Stormwater fee to operate and maintain the City's storm drainage infrastructure. The City may decide to provide a credit to offset the "double-dip" effect that could result from a new customer paying an SDC and increased rates for the same improvement project if the project has been paid for with funds collected from the stormwater fee.

Section 3.8.2 of this methodology includes a detailed discussion of how a financing credit may be applied. Once the City undertakes a project and raises rates to pay for the project, it may

consider developing an SDC credit schedule for each project undertaken. The amount of the credit will vary.

5.8.3 Impervious Surface Reduction Credit

In some cases, credits may be appropriate for development that incorporates improvements that are designed to reduce the impact of increased drainage on the storm drainage system. These measures may include construction of cisterns, detention facilities, pervious surface technology, and other efforts designed to reduce runoff from a developed property.

In each case, the City would be required to review proposed mitigation measures and determine an appropriate SDC credit for impervious surface reduction. In no case should the credit exceed the value of the calculated SDC charge prior to consideration of SDC credits.

The City is not required to provide credits for these types of mitigating practices. In the case of typical residential development, the cost of the impervious surface reducing efforts will likely be far greater than the stormwater SDC charge; however, in some commercial applications, there may be an advantage for a developer to incorporate these types of improvements.

5.9 Storm Drainage System SDC Summary

Section 5 has been developed to provide the City of Monroe with the methodology needed to establish the maximum defensible SDC for the storm drainage system. Table 5-5 summarizes the information used to complete this analysis.

TABLE 5-5: STORM DRAINAGE SYSTEM SDC SUMMARY PER EDU

SDC Component	SDC Amount
Improvement Fee (per EDU)	\$4,353
Reimbursement Fee (per EDU)	\$0
Subtotal of Storm Drainage System SDC Fees (per EDU)	\$4,353
SDC Credit Summary	
Upper Range Credit (100% Financing)	\$904
Mid Range Credit (75% Financing Credit)	\$678
Mid Range Credit (50% Financing Credit)	\$452
Low Range Credit (25% Financing Credit)	\$226

The maximum defensible Storm Drainage System SDC is \$4,353 per EDU or \$1.16 per square foot of impervious surface without the application of an SDC credit or compliance costs. It

should be reiterated that this calculation represents the maximum SDC that can be assessed and defended with proper methodology. The City has the autonomy to adjust this charge in any way they feel is appropriate; however, if adequate SDC fees are not collected funds will have to be obtained from other sources to undertake growth-related projects.

5.10 Storm Drainage System SDC Assessment Schedule

Assessment of the Storm Drainage System SDC varies based on the type of development occurring. The calculation methods for residential and non-residential development SDC's are outlined below.

5.10.1 Residential SDC

Assessment of a Storm Drainage System SDC on a residential customer is a simple process. Under the EDU method, a typical residential customer is assumed to be one EDU. This method is the easier to administer as it does not require the City to review plans and calculate impervious surface areas. This method assumes all residential development is equal with regards to storm drainage system impacts.

This method is valid for all residential units constructed on lots less than 8,000 square feet in area. Residential units constructed on lots equal to or greater than 8,000 square feet in area shall be assessed using the methodology for non-residential development.

5.10.2 Non-Residential SDC

For all non-residential development or residential development occurring on lots exceeding 8,000 square feet in area, the City will perform site plan reviews, measure and calculate impervious surface area, and charge each new development based on the impervious surface area that is being added to the system. For this method, the unit price of \$1.16 per square foot should be used. Accommodations for efforts to mitigate runoff impacts can be considered on a case-by-case basis. These mitigation efforts may include, but are not limited to, detention systems and pervious surface materials.



6 TRANSPORTATION SYSTEM SDC METHODOLOGY

6.1 Introduction

This section describes in detail the background information, calculations, and methodology used to determine the maximum defensible Transportation System SDC for the City of Monroe. This section identifies the existing and future requirements of the transportation system and summarizes the City's Transportation System CIP List.

This section defines the user base of the transportation system using a trip generation method and using commonly accepted trip tables for the assessment of a Transportation System SDC for both residential and nonresidential development.

6.2 Transportation System Overview

The City of Monroe owns and maintains a network of roadways and sidewalks that are used by the public to navigate through the City. The City shares some transportation facilities with Benton County and the Oregon Department of Transportation. A Transportation System Plan for the City was prepared in 2019 in coordination with Benton County. This plan provides a CIP list that serves as the primary source of projects included in this SDC methodology. Notably, the 2019 Transportation System Plan contains projects that will require the involvement of multiple government entities including the Oregon Department of Transportation and Benton County. Some projects that may benefit the City are the responsibility of another governing body due to the ownership of the facilities being impacted by the work. As a result, projects that are not anticipated to require a financial contribution from the City have been omitted from the Transportation System CIP List included in this document.

6.2.1 Overall System Description

The transportation system in Monroe is composed of vehicle and pedestrian facilities. A brief summary of each major system component is included below:

State Facilities: State Highway 99W bisects Monroe approximately 500 feet west of the Long Tom River. This highway travels north and south parallel to Interstate 5. This highway conveys traffic from Portland and Salem in the north to Monroe and Eugene in the south. Territorial Highway runs south off of Hwy 99 at the south end of Monroe.

County Roads: Few of the roads in and around Monroe fall under Benton County jurisdiction for maintenance and operation. These roads primarily provide access to neighborhoods and residential areas.

Local Roads: Smaller neighborhood roads are considered local roads. These roads primarily provide access to neighborhoods and residential areas.

Pedestrian: The City owns and maintains sidewalks, pathways, and other pedestrian facilities.

6.2.2 Service Population and Growth Component

The growth component for the Transportation System SDC is based on a trip count method. Under this methodology, users that generate more trips and make greater use of the system should pay a larger share of the project costs for developing additional capacity.

The Institute of Transportation Engineers (ITE) publishes tables that summarize the peak traffic impacts due to various types of land use. The 10th Edition of the ITE Trip Generation Manual should be used when evaluating traffic impacts for a given land use.

A community may seek to normalize trip counts to a typical residential dwelling where the trip counts associated with a typical dwelling unit are equated to 1 EDU. Therefore, if a typical residential dwelling generates 10 trip counts under peak conditions, the entire trip count list can be divided by 10 to normalize the trip generations to a Transportation System EDU.

6.3 EDU Methodology and Projected Growth

This section establishes an EDU methodology for the Transportation System SDC and determines the growth potential for the sector. It was assumed that the increase in transportation system usage will increase at the same pace as the increase in City population. Therefore, the increase in transportation system EDUs should be equal to the wastewater and storm drainage EDUs.

6.4 Capital Improvement Project List and Project Costs

The City's Transportation System CIP List was primarily derived from the Monroe 2019 Transportation System Plan.

Table 6-1 summarizes the projects on the City's Transportation System CIP List. The Transportation System CIP List includes projects with a current estimated project cost of more than \$7 million.

TABLE 6-1: TRANSPORTATION SYSTEM CAPITAL IMPROVEMENT PROJECT LIST

Project No.	Project Description	Project Cost Estimate	Project Cost Date	ENR CCI of Estimate	Current ENR CCI	Adjusted Cost Estimate
T1	Monroe Cross Country Shared-Use Path	\$1,250,000	2018	11061.85	11268.48	\$1,273,349
T2	City of Monroe Library Connection	\$100,000	2018	11061.85	11268.48	\$101,868
T3	Long Tom River Trail	\$290,000	2018	11061.85	11268.48	\$295,417
T4	Long Tom Foot Bridge	\$1,500,000	2018	11061.85	11268.48	\$1,528,019
T5	OR 99W Kelly to Alpine Cut-Off Shared-Use Path	\$50,000	2018	11061.85	11268.48	\$50,934
T6	Commercial Street Modernization	\$350,000	2018	11061.85	11268.48	\$356,538
T7	6th St Modernization	\$200,000	2018	11061.85	11268.48	\$203,736
T8	Max Drive Extension	\$400,000	2018	11061.85	11268.48	\$407,472
T9	Oak Street Extension	\$350,000	2018	11061.85	11268.48	\$356,538
T10	N 8th Street Extension 2	\$400,000	2018	11061.85	11268.48	\$407,472
T11	Southern Boundary Road	\$1,100,000	2018	11061.85	11268.48	\$1,120,547
T12	S 7th Street Extension	\$1,100,000	2018	11061.85	11268.48	\$1,120,547
Total						\$7,222,438

6.5 Project SDC Eligibility

Transportation project SDC eligibility was determined by evaluating the likely beneficiaries of the improvements. If improvements were concentrated in a region of the City that is undeveloped, costs associated with that project were typically determined to have a high SDC eligibility. Projects facilitating access to community-used facilities (Library, Parks, etc.) were evaluated based the projected population increase to be served by the transportation infrastructure. Projects targeting areas of the community that are primarily existing residential had relatively low SDC eligibilities.

The SDC eligibility determination for each project on the Transportation System CIP List is provided below.

Project T1 – Monroe Cross Country Shared-Use Path

Recommended SDC Eligibility for Project T1: 19.5%

The shared-use path may begin at Monroe Library and run through the City to the Alpine Cutoff Road/Bailey Branch access point. This improved access will benefit all City residents.

Therefore, SDC eligibility should be based on the planning year population attributable to growth.

$$\text{Project T1 SDC Eligibility} = \frac{805 \text{ people} - 648 \text{ people}}{805 \text{ people}} = 0.195 \rightarrow 19.5\% \text{ Eligible}$$

Project T2 – City of Monroe Library Connection

Recommended SDC Eligibility for Project T2: 19.5%

Project may improve pathway connection between the Monroe Community Library sidewalks and the Alpine Cut-off to Kelly Shared-use Path. This improved access will benefit all City residents. Therefore, SDC eligibility should be based on the planning year population attributable to growth.

$$\text{Project T2 SDC Eligibility} = \frac{805 \text{ people} - 648 \text{ people}}{805 \text{ people}} = 0.195 \rightarrow 19.5\% \text{ Eligible}$$

Project T3 – Long Tom River Trail

Recommended SDC Eligibility for Project T3: 19.5%

This project is intended to connect future housing developments near the currently undeveloped Brickyard residential area southward along the west side of the Long tom River. This improved access will benefit all City residents. Therefore, SDC eligibility should be based on the planning year population attributable to growth.

$$\text{Project T2 SDC Eligibility} = \frac{805 \text{ people} - 648 \text{ people}}{805 \text{ people}} = 0.195 \rightarrow 19.5\% \text{ Eligible}$$

Project T4 – Long Tom Foot Bridge

Recommended SDC Eligibility for Project T4: 19.5%

Project may provide a direct access point to the Monroe City Park from Monroe via a foot bridge across the Long Tom River. This improved access will benefit all City residents. Therefore, SDC eligibility should be based on the planning year population attributable to growth.

$$\text{Project T4 SDC Eligibility} = \frac{805 \text{ people} - 648 \text{ people}}{805 \text{ people}} = 0.195 \rightarrow 19.5\% \text{ Eligible}$$

*Project T5 – OR 99W Kelly to Alpine Cut-Off Shared-Use Path**Recommended SDC Eligibility for Project T5: 0%*

This project may add bollards to the Alpine Cut-off to Kelly Shared-Use Path. Since the focus of this project is on maintenance with no increase in capacity, this project was determined to be 0% SDC eligible.

*Project T6 – Commercial Street Modernization**Recommended SDC Eligibility for Project T6: 0%*

This project is intended to upgrade cross-section standards including a sidewalk on the north side. Since the focus of this project is on maintenance with no increase in capacity, this project was determined to be 0% SDC eligible.

*Project T7 – 6th St. Modernization**Recommended SDC Eligibility for Project T7: 0%*

This project is intended to upgrade cross-section standards including a sidewalk and enhanced pedestrian crossings at major intersections. Since the focus of this project is on maintenance with no increase in capacity, this project was determined to be 0% SDC eligible.

*Project T8 – Max Drive Extension**Recommended SDC Eligibility for Project T8: 19.5%*

This project will extend Max Drive south from existing terminus to Oak Street Extension as a new Minor Collector. Since this project will improve access for both future and existing residents, the SDC eligibility should be established based on the percentage of the plan year population due to development.

$$\text{Project T8 SDC Eligibility} = \frac{805 \text{ people} - 648 \text{ people}}{805 \text{ people}} = 0.195 \rightarrow 19.5\% \text{ Eligible}$$

Project T9 – Oak Street Extension

Recommended SDC Eligibility for Project T9: 19.5%

This project will extend Oak Street from existing terminus of N 8th Street to Max Drive Extension as a Minor Collector. Since this project will improve access for both future and existing residents, the SDC eligibility should be established based on the percentage of the plan year population due to development.

$$\text{Project T9 SDC Eligibility} = \frac{805 \text{ people} - 648 \text{ people}}{805 \text{ people}} = 0.195 \rightarrow 19.5\% \text{ Eligible}$$

*Project T10 – N 8th Street Extension 2**Recommended SDC Eligibility for Project T10: 19.5%*

This project extends 8th Street between Pine Street and Ash Street as a Minor Collector to provide alternative north-to-south connectivity. Since this project will improve access for both future and existing residents, the SDC eligibility should be established based on the percentage of the plan year population due to development.

$$\text{Project T10 SDC Eligibility} = \frac{805 \text{ people} - 648 \text{ people}}{805 \text{ people}} = 0.195 \rightarrow 19.5\% \text{ Eligible}$$

*Project T11 – Southern Boundary Road**Recommended SDC Eligibility for Project T11: 100%*

The construction of a new Minor Collector Street between S 10th Street Extension and S 6th Street Extension. Since this project will improve access for future residents, the SDC eligibility should be 100 percent.

*Project T12 – S 7th Street Extension**Recommended SDC Eligibility for Project T12: 100%*

This project will extend S 7th Street between Orchard Street and the new Southern Boundary Road as a Minor Collector. Since this project will improve access for future residents, the SDC eligibility should be 100 percent.

Table 6-2 below summarizes the SDC eligibility for each project on the Monroe Transportation System CIP List.

TABLE 6-2: TRANSPORTATION SYSTEM SDC ELIGIBILITY SUMMARY

Project No.	Project Description	Adjusted Cost Estimate	Reimbursement SDC Eligible (Y/N)	Improvement SDC Eligible (Y/N)	% SDC Eligible	SDC Eligible Cost
T1	Monroe Cross Country Shared-Use Path	\$1,273,349	N	Y	19.5%	\$248,343
T2	City of Monroe Library Connection	\$101,868	N	Y	19.5%	\$19,867
T3	Long Tom River Trail	\$295,417	N	Y	19.5%	\$57,616
T4	Long Tom Foot Bridge	\$1,528,019	N	Y	19.5%	\$297,964
T5	OR 99W Kelly to Alpine Cut-Off Shared-Use Path	\$50,934	N	N	0.0%	\$0
T6	Commercial Street Modernization	\$356,538	N	N	0.0%	\$0
T7	6th St Modernization	\$203,736	N	N	0.0%	\$0
T8	Max Drive Extension	\$407,472	N	Y	19.5%	\$79,470
T9	Oak Street Extension	\$356,538	N	Y	19.5%	\$69,536
T10	N 8th Street Extension 2	\$407,472	N	Y	19.5%	\$79,470
T11	Southern Boundary Road	\$1,120,547	N	Y	100.0%	\$1,120,547
T12	S 7th Street Extension	\$1,120,547	N	Y	100.0%	\$1,120,547
Total		\$7,222,438				\$3,093,360

6.6 Transportation System Reimbursement SDC

Oregon Law includes provisions for a reimbursement SDC to be developed for projects that have been completed and have remaining capacity to service growth. This section establishes the methodology and the charge for Transportation System Reimbursement SDC's in Monroe.

TABLE 6-3: TRANSPORTATION SYSTEM REIMBURSEMENT SDC SUMMARY

Project No.	Project Description	SDC Eligible Cost
	None	\$0
	Total Reimbursement Eligible Costs	\$0
	Total Transportation System Growth EDUs	70.00
	Maximum Transportation System Reimbursement SDC	\$0

As none of the projects on the CIP have yet to be undertaken, no reimbursement SDC is currently recommended.

6.7 Transportation System Improvement SDC

The calculation of the Transportation System Improvement SDC is accomplished by considering the total value of the Improvement SDC eligible projects divided by the growth potential in the transportation system.

A summary of the Transportation System Improvement SDC calculation is provided below in Table 6-4.

TABLE 6-4: TRANSPORTATION SYSTEM IMPROVEMENT SDC SUMMARY

Project No.	Project Description	SDC Eligible Cost
T1	Monroe Cross Country Shared-Use Path	\$248,343
T2	City of Monroe Library Connection	\$19,867
T3	Long Tom River Trail	\$57,616
T4	Long Tom Foot Bridge	\$297,964
T8	Max Drive Extension	\$79,470
T9	Oak Street Extension	\$69,536
T10	N 8th Street Extension 2	\$79,470
T11	Southern Boundary Road	\$1,120,547
T12	S 7th Street Extension	\$1,120,547
	Total Improvement Eligible Costs	\$3,093,360
	Total Transportation System Growth EDUs	70.00
	Maximum Transportation System Improvement SDC	\$44,191

Based on the above methodology, a Transportation System Improvement SDC of \$44,191 is recommended.

6.8 SDC Credits

An analysis of potential SDC credits is included as part of the SDC methodology. Credits may be appropriate to offset financing costs that will be paid by all system customers including new customers. Credits are also appropriate for developers who construct or otherwise provide improvements to the system that are part of the current Transportation System CIP List. A brief description of potential SDC credit scenarios is included in the following sections.

6.8.1 Improvement Offset Credit

If a developer completes some or all of a project listed on the City's Transportation CIP List, the credit provided should be equal to the value of the improvement made. The credit cannot exceed the amount of the Transportation System SDC that the developer would have been required to pay.

For example, if a developer constructs a section of roadway to provide service to their development and the improvement was included on the City's Transportation System CIP List, a credit should be negotiated for the improvement provided by the developer.

It should be noted that determination of improvement offset credits can require some judgment as development situations vary widely. The City should maintain an open policy when working with developers to identify fair and reasonable improvement offset credits when they apply. It

should also be reiterated that offset credits are not available for improvements undertaken by the developer that do not appear on the City's CIP List and are not part of the City's SDC methodology.

6.8.2 Financing Credit - Project Costs and Potential Loan Amounts

As the City does not currently have a rate structure or user fee for the transportation system, it is not possible to develop a financing credit. It may be possible for the City to fund a major transportation project through a bond or property tax-related funding mechanism. Should this occur, the City should, as part of the funding for the project, develop an appropriate Transportation System SDC credit to offset the value of the increased property tax so that new development is not charged for higher property taxes in addition to SDC's.

A potential financing credit will not be developed at this time for the transportation system.

6.9 Transportation System SDC Summary

The purpose of this section is to establish a methodology for a fair and reasonable Transportation System SDC for the City of Monroe. Table 6-5 below summarizes the Transportation System SDC developed in this methodology.

TABLE 6-5: TRANSPORTATION SYSTEM SDC SUMMARY PER EDU

SDC Component	SDC Amount
Improvement Fee (per EDU)	\$44,191
Reimbursement Fee (per EDU)	\$0
Subtotal of Transportation System SDC Fees (per EDU)	\$44,191

6.10 Transportation System SDC Assessment Schedule

Assessment of a Transportation System SDC should be based on the use of a standard trip generation table. The 10th Edition of the ITE *Trip Generation Manual* should be used to establish the assessment of the Transportation System SDC among different land use development types. A summary of the recommended assessment methods is provided in the following section.

Like other SDC calculation methods, a typical single-family detached home should be considered as a standard EDU resulting in the base trip count. Trip counts for other land uses should be based on the counts listed in the 10th Edition of the ITE *Trip Generation Manual*.

It is common for an agency to provide a bypass factor or pass by reduction factor for some land uses. The factor applies to land uses that are incidental to trip generation. For example, a convenience store is not generally the reason a trip is generated but is simply a stop on the way to somewhere else. An agency cannot count a trip for a convenience store and a shopping center as two trips if the convenience store is just a stop in route to the ultimate destination.

The ITE Manual provides various land use categories and provides suggested pass-by factors. When considering the SDC assessment for nonresidential land uses, the City should select a pass-by factor, if applicable, and reduce the EDU or trip count by the recommended pass-by percentage.

Some flexibility may be required when assessing Transportation System SDC's as the ITE table does not provide information for all possible land uses. The City will review and approve a proposed appropriate bypass factor for the land use at the time of application and plan review. Some flexibility and judgment will be required to evaluate land uses.



7 PARKS SYSTEM SDC METHODOLOGY

7.1 Introduction

This section describes the background information, calculations, and methodology used to determine the maximum defensible Parks System SDC for the City of Monroe. This section identifies the existing and future needs of the parks system and summarizes the City's Parks System CIP List.

7.2 Parks System Overview

The City of Monroe does not have a Parks and Recreation Department. All parks related activities are operated through the Public Works Department. The following are existing parks and school sites in Monroe:

- Monroe High School
- Monroe Elementary School
- City Park (community park)*
- Old Reservoir Park (open space)*
- Bellchamber's Property (undeveloped)*
- Legion Hall*

*Under the City's jurisdiction

The following planning documents were used as the basis for developing Parks System SDC fees.

- 2011 City of Monroe Parks Master Plan; Prepared by the Parks Planning Committee

This plan includes a CIP list, and SDC eligibility has been included for all projects incorporated into this document.

7.2.1 Overall System Description

As it stands, the City owns and controls approximately 33.32 acres of park land, excluding the new lagoon property outside the city limits and school district property. At its current population of 648, this equates to slightly more than 53 acres or parks and open space per 1000

population. The School District provides the vast majority of recreational opportunities that are located at two sites, the High School and Elementary school. These include several ball fields, play equipment, tennis court, track, football/soccer fields, and outdoor basketball courts. The City's current contribution includes the City Park, which has a little league field and several tracts of undeveloped land.

7.2.2 Service Population

Determining the service population using parks facilities in Monroe is difficult as parks are potentially used by full-time residents, part-time residents, local business employees, tourists, and other visitors to the community. For this methodology, it was determined that the Parks System SDC should be assessed against all new development.

7.3 EDU Methodology and Projected Growth

This methodology assumes that the Parks System SDC will be assessed against all new development. This methodology uses the same growth potential developed for the Wastewater System SDC. This assumes that new growth within the City Limits and UGB will impact the use of parks facilities. Therefore, it was determined that the same number of EDUs served by the sewer system would also be served with park system amenities. The recommended growth potential for the Parks System is equal to 70 EDU's.

7.4 Capital Improvement Project List and Project Costs

The City's 2011 Parks Master Plan includes project costs for many capital improvements in the wastewater system. Project descriptions are included in the Parks System Capital Improvement Project List Technical Memorandum included in Appendix A. The Parks System CIP List projects are summarized in Table 7-1.

TABLE 7-1: PARKS SYSTEM CAPITAL IMPROVEMENT PROJECT LIST

Project No.	Project Description	Project Cost Estimate	Project Cost Date	ENR CCI of Estimate	Current ENR CCI	Adjusted Cost Estimate
P1	Trail Specific Plan for Long Tom Riverside Trail	\$11,500	2011	9070	11268	\$14,287
P2	Site-Specific Park and Outdoor Recreation Planning Project for Reservoir Heights	\$4,500	2011	9070	11268	\$5,591
P3	Phase 1 Improvements for Reservoir Heights	\$11,500	2011	9070	11268	\$14,287
P4	Phase 1: City Park Development	\$78,200	2011	9070	11268	\$97,155
P5	Phase 2: City Park Development	\$97,200	2011	9070	11268	\$120,760
P6	Proposed Interpretive Trail	\$149,250	2018	11069	11268	\$151,946
P7	City Park River Recreation Boat Ramp	\$90,000	2011	9070	11268	\$111,815
P8	City Park River Recreation 60 foot Dock	\$45,000	2011	9070	11268	\$55,908
Total						\$571,749

7.5 Project SDC Eligibility

The SDC methodology indicates the percentage of each project's cost that can be attributed as necessary for growth, and therefore, be considered SDC eligible. As discussed previously, SDC's must be based on a project's cost or the portion of a project's cost that is necessary to add system capacity in response to or in anticipation of growth. The percentage of each project eligible for SDC funding is discussed below.

Project P1- Trail Specific Plan for Long Tom Riverside Trail

Recommended SDC Eligibility for Project P1: 19.5%

Creation of a trail near Long Tom River will benefit all residents of Monroe. Therefore, the percentage of the Project P1 costs eligible for SDC funds should be equal to the percentage of the population that will be new residents between 2018 and 2040.

$$\text{Project P1 SDC Eligibility} = \frac{805 \text{ people} - 648 \text{ people}}{805 \text{ people}} = 0.195 \rightarrow 19.5\% \text{ Eligible}$$

Project P2- Site-Specific Park and Outdoor Recreation Planning Project for Reservoir Heights

Recommended SDC Eligibility for Project P2: 19.5%

Planning and design for the proposed park space on the west side of the City on either side of Commercial Street. This new park will benefit all residents equally and SDC eligibility was determined based on the increase in population due to future development.

$$\text{Project P2 SDC Eligibility} = \frac{805 \text{ people} - 648 \text{ people}}{805 \text{ people}} = 0.195 \rightarrow 19.5\% \text{ Eligible}$$

*Project P3- Phase 1 Improvements for Reservoir Heights**Recommended SDC Eligibility for Project P3: 19.5%*

The addition of amenities to the proposed park space, including benches, picnic tables, an access trail, and parking lot. This new park will benefit all residents equally and SDC eligibility was determined based on the increase in population due to future development.

$$\text{Project P3 SDC Eligibility} = \frac{805 \text{ people} - 648 \text{ people}}{805 \text{ people}} = 0.195 \rightarrow 19.5\% \text{ Eligible}$$

*Project P4- Phase 1: City Park Development**Recommended SDC Eligibility for Project P4: 19.5%*

Additional amenities and equipment at City Park would increase the capacity of the space to host current and future residents. This development will benefit all residents equally and SDC eligibility was determined based on the increase in population due to future development.

$$\text{Project P4 SDC Eligibility} = \frac{805 \text{ people} - 648 \text{ people}}{805 \text{ people}} = 0.195 \rightarrow 19.5\% \text{ Eligible}$$

*Project P5- Phase 2: City Park Development**Recommended SDC Eligibility for Project P5: 19.5%*

The second phase of supplementing amenities at City Park would increase the capacity of the space to host current and future residents. This development will benefit all residents equally and SDC eligibility was determined based on the increase in population due to future development.

$$\text{Project P5 SDC Eligibility} = \frac{805 \text{ people} - 648 \text{ people}}{805 \text{ people}} = 0.195 \rightarrow 19.5\% \text{ Eligible}$$

A portion of this project has been completed, therefore the city is eligible for a reimbursement for that portion of work. See Section 7.6 for more information.

*Project P6- Proposed Interactive Trail**Recommended SDC Eligibility for Project P6: 19.5%*

The interactive trail will span approximately 1 mile connecting section of the town through a safe pathway and using part of an abandoned railroad. This development will benefit all residents equally and SDC eligibility was determined based on the increase in population due to future development.

$$\text{Project P6 SDC Eligibility} = \frac{805 \text{ people} - 648 \text{ people}}{805 \text{ people}} = 0.195 \rightarrow 19.5\% \text{ Eligible}$$

Project P7- City Park River Recreation Boat Ramp

Recommended SDC Eligibility for Project P7: 19.5%

The community parks projects include river recreation projects including a boat ramp. This project will help bring the City Park up to community park standards and allow for more use from the existing and future population. This development will benefit all residents equally and SDC eligibility was determined based on the increase in population due to future development.

$$\text{Project P7 SDC Eligibility} = \frac{805 \text{ people} - 648 \text{ people}}{805 \text{ people}} = 0.195 \rightarrow 19.5\% \text{ Eligible}$$

Project P8- City Park River Recreation 60-foot Dock

Recommended SDC Eligibility for Project P8: 19.5%

The community parks projects include river recreation projects including a fishing dock. This project will help bring the City Park up to community park standards and allow for more use from the existing and future population. This development will benefit all residents equally and SDC eligibility was determined based on the increase in population due to future development.

$$\text{Project P8 SDC Eligibility} = \frac{805 \text{ people} - 648 \text{ people}}{805 \text{ people}} = 0.195 \rightarrow 19.5\% \text{ Eligible}$$

The SDC eligibility for projects included in the Parks System CIP List is summarized in Table 7-2.

TABLE 7-2: PARKS SYSTEM PROJECT SDC ELIGIBILITY SUMMARY

Project Description		Adjusted Cost Estimate	Reimbursement SDC Eligible (Y/N)	Improvement SDC Eligible (Y/N)	% SDC Eligible	SDC Eligible Cost
P1	Trail Specific Plan for Long Tom Riverside Trail	\$14,287	N	Y	19.5%	\$2,787
P2	Site-Specific Park and Outdoor Recreation Planning Project for Reservoir Heights	\$5,591	N	Y	19.5%	\$1,090
P3	Phase 1 Improvements for Reservoir Heights	\$14,287	N	Y	19.5%	\$2,787
P4	Phase 1: City Park Development	\$97,155	N	Y	19.5%	\$18,948
P5	Phase 2: City Park Development	\$120,760	N	Y	19.5%	\$23,552
P6	Proposed Interpretive Trail	\$151,946	N	Y	19.5%	\$29,634
P7	City Park River Recreation Boat Ramp	\$111,815	N	Y	19.5%	\$21,807
P8	City Park River Recreation 60 foot Dock	\$55,908	N	Y	19.5%	\$10,904
Total		\$571,749				\$111,509

This methodology identifies nearly \$571,749 in projects with approximately 19.5% of the aggregate project costs being SDC eligible.

7.6 Parks System Reimbursement SDC

The City has completed the construction of the restrooms in the City Park, which is a portion of Project 6 Phase 2 City Park Development. Therefore, a percentage of the project that was completed is eligible for a reimbursement.

Of the adjusted cost estimate of \$120,760, the project cost was \$47,210. Therefore, the project reimbursement will be 19.5% of \$47,210 which totals \$9,206

TABLE 7-3: PARKS SYSTEM REIMBURSEMENT SDC SUMMARY

Project No.	Project Description	SDC Eligible Cost
	None	\$0
	Total Reimbursement Eligible Costs	\$9,206
	Total Parks System Growth EDUs	70.00
	Maximum Parks System Reimbursement SDC	\$132

This methodology identifies a maximum Parks System Reimbursement of \$132.

7.7 Parks System Improvement SDC

Calculation of the Parks System Improvement SDC was based on the methodology and the determination of the SDC eligible project costs described earlier in this section. The following table summarizes the total cost of SDC eligible projects on the Parks System CIP List that have not yet been constructed. To account for construction cost increases since the time of the original estimates, costs have been prorated using the ENR Construction Cost Index.

Based on this analysis, a Parks System Improvement SDC of \$1,593 is recommended. Table 7-4 summarizes the calculation of the Parks System Improvement SDC.

TABLE 7-4: PARKS SYSTEM IMPROVEMENT SDC SUMMARY

Project No.	Project Description	SDC Eligible Cost
P1	Trail Specific Plan for Long Tom Riverside Trail	\$2,787
P2	Site-Specific Park and Outdoor Recreation Plannir	\$1,090
P3	Phase 1 Improvements for Reservoir Heights	\$2,787
P4	Phase 1: City Park Development	\$18,948
P5	Phase 2: City Park Development	\$23,552
P6	Proposed Interpretive Trail	\$29,634
P7	City Park River Recreation Boat Ramp	\$21,807
P8	City Park River Recreation 60 foot Dock	\$10,904
Total Improvement Eligible Costs		\$111,509
Total Parks System Growth EDUs		70.00
Maximum Parks System Improvement SDC		\$1,593

7.8 Parks System SDC Credits

An analysis of potential SDC credits is included as part of this SDC methodology. Credits may be appropriate to offset financing costs that will be paid by all system customers including new customers. Credits are also appropriate for developers who construct or otherwise provide improvements to the system that are part of the current Parks System CIP List. A brief description of potential SDC credit scenarios is discussed in the following sections.

7.8.1 Improvement Offset Credit

An improvement offset credit for the Parks System SDC program is difficult as a specific development may have no relationship with or proximity to a park improvement that appears on the Parks System CIP List. This does not eliminate the potential for a developer to offset a Parks System SDC with an equivalent improvement or partial improvement of a Parks System CIP List project.

For example, the City may wish to provide a Parks System CIP offset credit to a developer who chooses to install a public restroom facility on one of the planned parks projects. If the value of the restroom improvement is \$65,000, a credit could be provided to the development for up to that amount, but not more than the development would be required to pay for a Parks System SDC.

As with the other SDC programs, a parks system improvement offset credit must be considered on a case-by-case basis.

7.8.2 Financing Credit

The City does not have a rate structure or user fee for the parks system; therefore, it is not possible to develop a financing credit. As it is unlikely that a user fee will be established to support parks activities in Monroe, no recommendations are provided at this time to provide a credit to offset a potential parks user fee.

It is possible that property taxes could be increased through bonds, levies, or other property tax related funding mechanisms to pay for improvements to the parks system. As is the case with user rates, a property cannot be charged an SDC and an increased property tax for the same SDC eligible project. Therefore, if Parks System CIP List projects are funded through an increase in the property taxes in Monroe, an appropriate financing credit should be established to eliminate the potential for “double-dipping” to pay for growth-required parks projects.

7.9 Parks System SDC Summary

Section 7 provides the City of Monroe with the methodology to establish the maximum defensible SDC for the Parks System. Table 7-5 summarizes the information used in this analysis.

TABLE 7-5: PARKS SYSTEM SDC SUMMARY PER EDU (BEFORE COMPLIANCE COSTS)

SDC Component	SDC Amount
Improvement Fee (per EDU)	\$1,593
Reimbursement Fee (per EDU)	\$132
Subtotal of Parks System SDC Fees (per EDU)	\$1,724

The maximum defensible Parks System SDC is \$1,724 per EDU without the application of an SDC credit or compliance costs. This calculation represents the maximum SDC that can be assessed and defended with proper methodology; however, the City has the autonomy to adjust this charge as it deems appropriate. Failure to collect adequate SDC fees could result in the need for other funding sources should projects be undertaken to satisfy growth requirements.

7.10 Parks System SDC Assessment Schedule

As with other SDC programs, the parks program should include an assessment schedule that considers both residential and non-residential development. The assessment schedule should be easy to administer and equitable to the development parties.

It is recommended that the Parks System SDC be assessed on a per EDU method. While some communities will adjust the residential Parks System SDC assessment based on the number of bedrooms in a home or on the size of a home, it is recommended that one residential development be considered equal to one EDU.

Multi-family housing such as duplexes and apartments should be considered similarly to the assessment method discussed in Section 3 of this methodology. Specifically:

- Apartments should be assessed at a rate of 0.75 EDU per unit.
- Duplexes and townhouses should be assessed at a rate of 1 EDU per separate dwelling or 2 EDU's per duplex.

Nonresidential Parks System SDC's should be assessed assuming the same number of EDUs determined for the wastewater system.



8 COMPLIANCE COSTS

8.1 Introduction

Oregon law includes provisions that allow SDC revenues to be used to offset costs incurred by local governments in complying with the provisions of SDC law, including expenses associated with developing SDC methodologies, master planning, administration and updating of CIP lists, and other compliance related costs. Amendments to the law require annual accounting of SDC expenditures including revenue collected and attributed to the costs of compliance. The expenses of this annual accounting process are also considered to be related to the costs of compliance and can be paid for with SDC revenues.

8.2 Compliance Costs

Unlike reimbursement and improvement SDC's, compliance costs do not represent another category of system development charge. For the City of Monroe, it is recommended that compliance costs be established as a percentage of the total SDC's that are likely to be assessed each year. The additional surcharge that is to be added to all SDC's will provide the funds necessary to administer each of the SDC programs and comply with current SDC laws and requirements.

The following sections provide a brief description of the components that comprise the compliance cost methodology.

8.2.1 Auditing/Accounting Costs

The City is required to complete annual accounting and auditing of all of the SDC programs that are implemented. The City must account for all revenues collected through SDC assessments, all expenses and project costs that are fully or partially paid for with SDC funds, and all other debits or credits from the SDC funds.

For the purposes of this document, it will be assumed that auditing and accounting expenses will not exceed \$2,000 per year.

8.2.2 SDC Methodology and Administration

The City will need to perform regular updates to their SDC methodology to account for increases in project costs (inflation), additions to the capital improvement project list, adjustments for project financing specifics as projects develop (i.e. interest rates, grants, etc.), population or growth rate changes, and other issues that may change the SDC charge for one or more of the individual SDC programs. These updates may be required, to a greater or lesser extent, on an annual basis.

It is also assumed that a full SDC methodology update will be required at least once each decade as planning efforts are updated. This major SDC methodology update may be required once every ten years and would ensure that the City's SDC methodology meets all current legal requirements and is coordinated with updated planning efforts and CIP's.

While the cost of administering and updating the City's SDC methodology may vary, it is recommended that the City budget \$5,000 per year for this purpose. The cost to update SDC methodology is 100 percent SDC eligible. This will include costs for consulting assistance and administrative costs of city staff as they address SDC issues, determine assessments, track funds, and perform other SDC administrative tasks.

8.2.3 Infrastructure Planning Efforts

Most master planning and facilities planning efforts cover a planning period of 20 years. Changes in community needs, development pressures, regulatory changes, or other issues often prompt these planning documents to be updated or repeated on a more frequent basis than the planning period suggests.

For the purpose of establishing compliance costs, it is recommended that water and wastewater system planning be repeated on a schedule of at least once every 10 years. It may be that a major planning effort is required in year 1 and a less involved planning effort or update is appropriate for year 10. In any event, the City should be collecting revenues through the planning process that will allow them to update their planning documents as required.

It can be argued that 100 percent of the costs associated with planning should be considered SDC eligible; however, some of the effort involved with infrastructure planning includes assessing existing facilities, their capacities and condition, and the capabilities of the existing systems to provide service to existing and future customers. The planning effort also includes determining the infrastructure needs associated with growth and development. Therefore, the

compliance cost associated with infrastructure planning should be borne in part by the SDC programs and in part by the existing system users.

For the purposes of this analysis, it is recommended that 19.5% of the recurring planning costs be considered attributable to growth. These costs are SDC eligible. The individual costs of these planning efforts are estimated in Table 8-1.

8.2.4 Total Estimated SDC Revenue

As it is recommended that compliance costs should be charged as a percentage surcharge of SDC revenues, the amount of SDC revenue that is anticipated to be collected must be estimated.

For this calculation, it was assumed that the City will charge the maximum defensible SDC for each system. This calculation will require adjustment should the City opt to charge less than the maximum defensible SDC for each system. The annual compliance costs and annual expected revenue were then used to calculate the recommended percentage surcharge necessary to pay for associated SDC compliance costs.

The growth component for each SDC program was reviewed individually and an annual average growth unit established. For example, it was determined that the Water System SDC program will add 70 EDU's over 20 years; therefore, it should be assumed that the system will add an average of 3.5 EDU's each year to the system. The compliance costs associated with the Water System SDC program should be paid as a percentage of the SDC revenues collected from the 3.5 new EDU's added to the system in any given year.

This analysis was repeated for each of the SDC programs. A summary of this analysis is provided below in Table 8-2.

8.2.5 Calculation of Compliance Expenses

Table 8-1 summarizes the estimated compliance costs associated with the proper administration of an SDC program for the City of Monroe. These expenses include annual costs for accounting and administration as well as long term costs for planning efforts.

TABLE 8-1: SDC COMPLIANCE EXPENSES

Compliance Activity	Estimated Cost	SDC Eligibility	Frequency (Years)	Annual Cost
General Accounting/Administrative Costs				
Auditing/Accounting	\$2,000	100%	1	\$2,000
SDC Methodology Administration & Annual Adjustments	\$5,000	100%	1	\$5,000
SDC Methodology Update	\$21,000	100%	10	\$2,100
Wastewater System Compliance Costs				
Wastewater Facilities Planning	\$80,000	19.5%	10	\$1,560
Water System Compliance Costs				
Water Master Planning	\$60,000	19.5%	10	\$1,170
Water Conservation and Management Planning	\$25,000	19.5%	20	\$244
Storm Drainage System Compliance Costs				
Storm Drainage Master Planning	\$50,000	19.5%	20	\$488
Parks System Compliance Costs				
Park System Master Planning	\$50,000	19.5%	20	\$488
Transportation System Compliance Costs				
Transportation System Master Plan	\$84,000	19.5%	10	\$1,638
Subtotal Annual Compliance Costs	\$377,000			\$14,687

Based on this analysis, it is estimated that \$14,687 per year will be needed to properly administer the City's SDC programs. This includes costs for planning and general administration.

8.2.6 Summary of SDC Revenue and Calculation of Compliance Charge

Each section of this methodology describes the growth potential, over a 20-year planning period, for each infrastructure sector. To calculate the average annual SDC revenue, it was assumed that a constant growth rate would occur for each sector for the duration of the planning period. It is important to note that this assumption has been made to simplify the calculation and administration of the SDC Compliance Charge and that growth is not necessarily projected to occur at a constant growth rate as shown in Table 3-1.

The SDC per EDU was multiplied by the annual anticipated growth in EDUs to estimate the annual SDC revenue for each infrastructure sector. Table 8-2 below summarizes the estimated revenue expected within each sector.

TABLE 8-2: ANTICIPATED SDC REVENUE BY SYSTEM

Estimates of SDC Revenues	Added EDU's EDU's/yr	SDC Charge per EDU	Annual Revenue
Estimated Annual Water SDC Revenues	3.50	\$4,802	\$16,808
Estimated Annual Wastewater SDC Revenues	3.50	\$9,033	\$31,616
Estimated Annual Storm Drainage SDC Revenues	3.50	\$4,353	\$15,234
Estimated Annual Transportation SDC Revenues	3.50	\$44,191	\$154,668
Estimated Annual Parks SDC Revenues	3.50	\$1,724	\$6,036
Total Estimated SDC Revenues			\$224,361
Compliance Cost Charge (Annual Cost/Annual Revenue)			6.55%

An appropriate SDC compliance charge was determined by dividing the annual anticipated compliance costs estimated in Table 8-1 by the total estimated annual revenue in Table 8-2.

Based on this analysis, a compliance charge of approximately 6.55% of the SDC revenue be collected for each of the individual SDC programs. On average, this charge should produce enough revenue annually to assist the City with the compliance and administration of all the SDC programs.

Compliance costs should be shared among all infrastructure sectors. When SDC's are collected, the City must deposit an appropriate amount into each SDC account, taking care to separate the individual SDC charges as well as an appropriate portion of the compliance costs into each separate account.

9 SDC COMPARISON



This section compares the SDCs proposed in this methodology to those of other municipalities in the region. It is important to note that comparing SDCs from other cities to those proposed here should not be used as a benchmark of “reasonableness” given the variation in infrastructure needs from city to city and differences in costs for goods and services.

SDC’s from the following cities were included in this comparison due to their proximity to the City of Monroe:

- Corvallis
- Albany
- Turner
- Monmouth
- Salem
- Adair Village
- Philomath
- Veneta
- Harrisburg

Each city has flexibility in the method used to calculate SDCs assessed on new development. The comparison presented here was determined for a detached single-family residence. In cases where the method used by the comparative municipality differed from the method proposed for Monroe, the following criteria were used as defining characteristics of a detached single-family home:

- Number of Bedrooms: 3
- Number of Bathrooms: 2.5
- House Square Footage: 1,600 SF
- Impervious Cover on Lot: 3,747 SF
- Water and Sewer Fixtures (Qty): Lavatory (3), Toilet (3), Shower or Tub (2), Sink (1), Dishwasher (1), Clothes washer (1), Hose Bibb (2)
- Water Meter Size: $\frac{3}{4}$ "

TABLE 9-1: COMPARISON OF SYSTEM DEVELOPMENT CHARGES

Municipality	Water	Wastewater	Storm Drainage	Transportation	Parks	Compliance/ Admin Fee	Total
Monroe (current)	\$7,769	\$6,082	\$963	\$620	\$590		\$16,024
Monroe (proposed)	\$4,802	\$9,033	\$4,353	\$44,191	\$1,724	\$4,196	\$68,299
Adair Village ⁷	\$7,855	\$3,435	\$305	\$5,765	\$992	\$770	\$19,122
Corvallis ¹	\$2,502	\$6,840	\$253	\$3,000	\$6,607	Unknown	\$19,202
Albany ²	\$2,857	\$3,553	None	\$3,941	\$1,549	\$7	\$11,907
Turner ³	\$3,395	\$3,094	None	\$1,932	\$1,736	\$203	\$10,360
Monmouth ⁴	\$1,689	\$3,289	\$230	\$3,732	\$1,989	Unknown	\$10,929
Salem ⁵	\$4,797	\$3,832	\$609	\$2,847	\$4,404	\$340	\$16,829
Philomath ⁶	\$9,374	\$8,606	\$1,684	\$5,442	\$1,066	Unknown	\$26,172
Veneta	\$7,100	\$6,207	\$202	\$2,426	\$4,745	Included	\$20,679
Harrisburg	\$4,222	\$3,590	\$450	\$3,045	\$1,800	\$0	\$13,107

¹City of Corvallis SDC information obtained from <https://www.corvallisoregon.gov/ds/page/system-development-charges-sdcs>

²City of Albany SDC information obtained from <https://www.cityofalbany.net/departments/public-works/engineering/system-development-charges>

³City of Turner SDC information obtained from <http://www.turnerbusiness.org/>

⁴City of Monmouth SDC information obtained from <https://www.ci.monmouth.or.us/pView.aspx?id=4796&catid=552>

⁵City of Salem SDC information obtained from 2019 SDC Methodology Report available at <https://www.cityofsalem.net/Pages/system-development-charges.aspx>

⁶City of Philomath SDC information obtained from 2018-2019 City and Urban Renewal Agency Budgets available at <https://www.ci.philomath.or.us>

⁷City of Adair Village SDC information obtained from 2019 SDC Methodology Report available at <http://adairvillage.org/sdc-methodology/>

⁸City of Philomath SDC information obtained from: https://www.ci.philomath.or.us/vertical/sites/%7B2CFF016E-1592-4DB3-9E2B-444FA3EFC736%7D/uploads/011419_CC1.pdf

⁹City of Veneta SDC information obtained from: https://www.venetaoregon.gov/sites/default/files/fileattachments/building/page/219/handout_sdc_other_fees_january_1_2018.pdf

¹⁰City of Harrisburg SDC information obtained from: <https://www.ci.harrisburg.or.us/planning/page/system-development-charges>

Appendix A

July 2019

City of Monroe
664 Commercial St.
Monroe, OR 97456



RE: Parks System CIP List Update

This technical memorandum has been prepared to provide the City of Monroe with an updated Capital Improvement Project (CIP) list related to the parks system. Projects included on this CIP list were identified from the City's 2011 Parks Master Plan. This CIP list can serve as the basis for revising the City's System Development Charge (SDC) methodology to ensure that adequate funds are collected to undertake growth-related parks system projects.

Recommended Parks System Improvements

This CIP List identifies several projects outlined in the 2011 Parks Master Plan that the City should undertake.

Project P1 – Trail Specific Plan for Long Tom Riverside Trail

This project constructs a natural surface trail of gravel or dirt, 12 feet in width, and will run 7450 feet from the bridge north and west to 8th Street.

Project P1 Cost Estimate	
Referenced Cost Estimate	\$11,500
Date of Referenced Cost Estimate	2011
Reference ENR CCI	9070
Current ENR CCI (June 2019)	11268.48
Updated Cost Estimate (June 2019 \$)	\$14,287

Estimated Project Cost: \$14,287

Project P2 – Construct Softball Field for City Park

The City Park does contain a softball field and backstop, though it is in a state of disrepair and has not been used to several years. This project would construct a softball field on City-owned property to expand the city's recreation opportunities and bring the existing field into standards.

Project P2 Cost Estimate	
Referenced Cost Estimate	\$83,000
Date of Referenced Cost Estimate	2011
Reference ENR CCI	9070
Current ENR CCI (June 2019)	11268.48
Updated Cost Estimate (June 2019 \$)	<u>\$103,118</u>

Estimated Project Cost: \$103,118

Project P3 – Site-Specific Park and Outdoor Recreation Planning Project for Reservoir Heights

This project would focus on planning the Phase 1 Developments for Reservoir Heights Park to address recommended additions and uses for the area.

Project P3 Cost Estimate	
Referenced Cost Estimate	\$4,500
Date of Referenced Cost Estimate	2011
Reference ENR CCI	9070
Current ENR CCI (June 2019)	11268.48
Updated Cost Estimate (June 2019 \$)	<u>\$5,591</u>

Estimated Project Cost: \$5,591

Project P4 – Phase 1: Improvements for Reservoir Heights

This project would add several benches and picnic tables throughout the property taking advantage of the view, a trail system to the property using the Main Street right-of-way, improved parking on the shoulder, and possible sale of valuable residential acreage.

Project P4 Cost Estimate	
Referenced Cost Estimate	\$11,500
Date of Referenced Cost Estimate	2011
Reference ENR CCI	9070
Current ENR CCI (June 2019)	11268.48
Updated Cost Estimate (June 2019 \$)	<u>\$14,287</u>

Estimated Project Cost: \$14,287

Project P5 – Phase 1: City Park Development

This project would bring City Park up to standards by constructing play equipment, a swing set, irrigation, drinking fountains, benches, and garbage cans.

Project P5 Cost Estimate	
Referenced Cost Estimate	\$78,200
Date of Referenced Cost Estimate	2011
Reference ENR CCI	9070
Current ENR CCI (June 2019)	11268.48
Updated Cost Estimate (June 2019 \$)	\$97,155

Estimated Project Cost: \$97,155

Project P6 – Phase 2: City Park Development

This project would add a second phase of improvements to City Park with picnic tables, a covered area, restrooms, sidewalks, and lighting.

Project P6 Cost Estimate	
Referenced Cost Estimate	\$97,200
Date of Referenced Cost Estimate	2011
Reference ENR CCI	9070
Current ENR CCI (June 2019)	11268.48
Updated Cost Estimate (June 2019 \$)	\$120,760

Estimated Project Cost: \$120,760

Project P7 – Proposed Interpretive Trail

This project would add a trail that would provide a safe and durable surface for pedestrian travel in town. The trail would span between Alpine Cut Off road to the Monroe Elementary School.

Project P7 Cost Estimate	
Referenced Cost Estimate	\$149,250
Date of Referenced Cost Estimate	2018
Reference ENR CCI	11069
Current ENR CCI (June 2019)	11268.48
Updated Cost Estimate (June 2019 \$)	\$151,946

Estimated Project Cost: \$151,946

Project P8 – City Park Development Boat Ramp

This project would add river recreation activities to the City Park on the eastside of the River.

Project P8 Cost Estimate	
Referenced Cost Estimate	\$90,000
Date of Referenced Cost Estimate	2011
Reference ENR CCI	9070
Current ENR CCI (June 2019)	11268.48
Updated Cost Estimate (June 2019 \$)	\$111,815

Estimated Project Cost: \$111,815

Project P8 – City Park development 60-foot Fishing Dock

This project would add river recreation activities to the City Park on the eastside of the river.

Project P9 Cost Estimate	
Referenced Cost Estimate	\$45,000
Date of Referenced Cost Estimate	2011
Reference ENR CCI	9070
Current ENR CCI (June 2019)	11268.48
Updated Cost Estimate (June 2019 \$)	\$55,908

Estimated Project Cost: \$55,908

The estimated total capital cost for all projects included on the Parks System CIP list is \$674,868.

Recommended Compliance Costs

In addition to the projects previously discussed, the City should continue to maintain an updated Parks System Master Plan. Maintaining a master plan that reflects the current status of the City and accurately projects its growth and needs is vital for ensuring that the parks system has the capacity to continue serving the City. Budgeting for a new Parks Master Plan should be included in the Compliance Cost list for any updates made to the City's SDC methodology.

Estimated Project Cost: \$50,000

If you have any questions about projects included on this Parks System CIP List, please do not hesitate to contact me at mwadlington@civilwest.net or 541.223.5130.

Sincerely,

Matt Wadlington, PE
Civil West Engineering Services, Inc.



July 2019

City of Monroe
664 Commercial St.
Monroe, OR 97456



RE: Storm Drainage System CIP List Update

This technical memorandum has been prepared to provide the City of Monroe with a Capital Improvement Project (CIP) list related to the storm drainage system. This memorandum was prepared based on information developed from the 2015 Stormwater Master Plan. This CIP list can serve as the basis for revising the City's System Development Charge (SDC) methodology to ensure that adequate funds are collected to undertake growth-related storm drainage system infrastructure projects.

Recommended Water System Improvements

The City's 2015 Stormwater Master Plan identified several storm drainage projects that the City should plan to undertake. These range from piping improvements to outfall replacements.

Project S1 – 587' of Culvert Improvements Along Ash Street

Much of Basin B drains through stormwater infrastructure on the north and south sides of Ash Street. The existing culverts lack adequate hydraulic capacity and the ditch line is unmaintained. The ditch line needs to be maintained, regraded for larger pipes, cleared of all obstructions, and if necessary, private walkway culverts replaced with 18 to 24" pipe.

Project S1 Cost Estimate	
Referenced Cost Estimate	\$91,460
Date of Referenced Cost Estimate	2014
Reference ENR CCI	9936
Current ENR CCI (June 2019)	11268.48
Updated Cost Estimate (June 2019 \$)	\$103,726

Estimated Project Cost: \$103,726

Project S2 – 701' Outfall Pipe Replacement-East of Pine Street

The railroad crossing and outfall pipe are both lacking capacity to convey the runoff from a 25-year storm event. To address this issue, this project replaces the existing system with approximately 90' of 30" pipe, 614' of 36" pipe, and two 60" manholes.

Project S2 Cost Estimate	
Referenced Cost Estimate	\$297,815
Date of Referenced Cost Estimate	2014
Reference ENR CCI	9936
Current ENR CCI (June 2019)	11268.48
Updated Cost Estimate (June 2019 \$)	\$337,754

Estimated Project Cost: \$337,754

Project S3 – 641' of System and Outfall Piping North of Kelly St.

This outfall pipe is lacking in capacity to convey the runoff from a 25-year storm event and has sediment buildup at the inlet and outlet. This project replaces 123' of 15" diameter pipe with 30" pipe and replaces 518' of 24" diameter pipe with 36" pipe. Localized ponding will be addressed by adding an area drain on the west side of the roadway with general maintenance.

Project S3 Cost Estimate	
Referenced Cost Estimate	\$293,422
Date of Referenced Cost Estimate	2014
Reference ENR CCI	9936
Current ENR CCI (June 2019)	11268.48
Updated Cost Estimate (June 2019 \$)	\$332,772

Estimated Project Cost: \$332,772

Project S4 – 12"-24" Pipe Improvements along S. 9th St. & Orchard St.

To remove capacity constraints, this project will replace 321' of 6" diameter pipe with 12" pipe and replaces 293' of 12" diameter pipe with 24" pipe. This will eliminate the need to replace the remaining 12" line along the north side of Orchard Street.

Project S4 Cost Estimate	
Referenced Cost Estimate	\$205,482
Date of Referenced Cost Estimate	2014
Reference ENR CCI	9936
Current ENR CCI (June 2019)	11268.48
Updated Cost Estimate (June 2019 \$)	\$233,038

Estimated Project Cost: \$233,038

Project S5 – 12"-24" Pipe Improvements along Commercial St. & Main St.

This project addresses system capacity constraints by replacing 1,318 ft of storm drain pipe with 12" to 24" diameter pipes.

Project S5 Cost Estimate	
Referenced Cost Estimate	\$476,331
Date of Referenced Cost Estimate	2014
Reference ENR CCI	9936
Current ENR CCI (June 2019)	11268.48
Updated Cost Estimate (June 2019 \$)	\$540,210

Estimated Project Cost: \$540,210

The estimated total capital cost for all projects included on the Storm Drainage CIP list is \$1,547,500.

Recommended Compliance Costs

In addition to the projects previously discussed, the City should budget for future revisions to its Storm Drainage System Plan. The current Storm Drainage System Plan was completed in 2015 and reflects most current conditions. Maintaining master plans that reflect the current status of the City and accurately projects growth and needs is vital for ensuring that the Storm Drainage System has the capacity to continue serving the City. Budgeting for a new Storm Drainage System Plan should be included in the Compliance Cost list for any updates made to the City's SDC methodology.

Estimated Project Cost: \$50,000

If you have any questions about projects included on this Storm Drainage System CIP List, please do not hesitate to contact me at mwadlington@civilwest.net or 541.223.5130.

Sincerely,

Matt Wadlington, PE
Civil West Engineering Services, Inc.



July 2019

City of Monroe
664 Commercial St.
Monroe, OR 97456



RE: Transportation System CIP List Update

This technical memorandum has been prepared to provide the City of Monroe with an updated Capital Improvement Project (CIP) list related to the City's transportation system. The City of Monroe completed a Transportation System Plan (TSP) in February 2019 as part of the process of updating Benton County's TSP. The TSP CIP list includes multiple projects that fall outside the responsibility and jurisdiction of the City. This technical memorandum identifies the projects from that TSP CIP list that the City should plan to undertake. This CIP List can serve as the basis for revising the City's System Development Charge (SDC) methodology to ensure that adequate funds are collected to undertake growth-related transportation system infrastructure projects.

Recommended Transportation System Improvements

The City's 2019 Transportation System Plan identified several projects that will impact the City. While some projects from the CIP list will be the responsibility of the Oregon Department of Transportation (ODOT) or Benton County to complete, several will rely on the City to undertake, manage, and fund the bulk of the project.

Project T1 – Monroe Cross Country Shared-Use Path

This project may begin at Monroe Library and follow the Alpine Cut-off to Kelly Street Shared-use Path (AT-120) pathway south to Main Street (or Commercial St), turning west up through the Reservoir Heights Park to Shady Oak Drive/Orchard Street to the Alpine Cutoff Road/Bailey Branch access point. An alternative route could connect Shady Oak/Fairwood Drive with the Cemetery Road and Alpine Cut-off to Kelly Street Shared-use Path. Way finding signage is also recommended. A significant portion of this project would occur outside of the City's Urban Growth Boundary and would likely involve cost sharing with Benton County.

Project T1 Cost Estimate	
Referenced Cost Estimate	\$1,250,000
Date of Referenced Cost Estimate	2018
Reference ENR CCI	11062
Current ENR CCI (June 2019)	11268.48
Updated Cost Estimate (June 2019 \$)	\$1,273,349

Estimated Project Cost: \$1,273,349

Project T2 – City of Monroe Library Connection

This project will improve pathway connection between the Monroe Community Library sidewalks and the Alpine Cut-off to Kelly Shared-use Path.

Project T2 Cost Estimate	
Referenced Cost Estimate	\$100,000
Date of Referenced Cost Estimate	2018
Reference ENR CCI	11062
Current ENR CCI (June 2019)	11268.48
Updated Cost Estimate (June 2019 \$)	\$101,868

Estimated Project Cost: \$101,868

Project T3 – Long Tom River Trail

This project will connect future housing developments near the currently undeveloped Brickyard residential area southward along the west side of the Long Tom River, linking to the proposed footbridge to the Monroe City Park on the east side of the River, and the downtown commercial district. An additional connection could be made to OR 99W and the Alpine Cut-off to Kelly Shared-use Path. Project development may consider emergency vehicle access due to the lack of an adjacent local street.

Project T3 Cost Estimate	
Referenced Cost Estimate	\$290,000
Date of Referenced Cost Estimate	2018
Reference ENR CCI	11062
Current ENR CCI (June 2019)	11268.48
Updated Cost Estimate (June 2019 \$)	\$295,417

Estimated Project Cost: \$295,417

Project T4 – Long Tom Foot Bridge

This project will provide a direct access point to the Monroe City Park from Monroe via a foot bridge across the Long Tom River.

Project T4 Cost Estimate	
Referenced Cost Estimate	\$1,500,000
Date of Referenced Cost Estimate	2018
Reference ENR CCI	11062
Current ENR CCI (June 2019)	11268.48
Updated Cost Estimate (June 2019 \$)	\$1,528,019

Estimated Project Cost: \$1,528,019

Project T5 – OR99W Kelly to Alpine Cutoff Share-Use Path/Depot Street Improvements

This project will add bollards to the Alpine Cut-off to Kelly Shared-use Path and add stop signs for Depot Street travel.

Project T5 Cost Estimate	
Referenced Cost Estimate	\$50,000
Date of Referenced Cost Estimate	2018
Reference ENR CCI	11062
Current ENR CCI (June 2019)	11268.48
Updated Cost Estimate (June 2019 \$)	\$50,934

Estimated Project Cost: \$50,934

Project T6 – Commercial Street Modernization

This project will upgrade the street to cross-section standards including sidewalk on north side.

Project T6 Cost Estimate	
Referenced Cost Estimate	\$350,000
Date of Referenced Cost Estimate	2018
Reference ENR CCI	11062
Current ENR CCI (June 2019)	11268.48
Updated Cost Estimate (June 2019 \$)	\$356,538

Estimated Project Cost: \$356,538

Project T7 – 6th St Modernization

This project will upgrade the street to cross-section standards including sidewalk. Enhanced pedestrian crossings are recommended at major intersections.

Project T7 Cost Estimate	
Referenced Cost Estimate	\$200,000
Date of Referenced Cost Estimate	2018
Reference ENR CCI	11062
Current ENR CCI (June 2019)	11268.48
Updated Cost Estimate (June 2019 \$)	\$203,736

Estimated Project Cost: \$203,736

Project T8 – Max Drive Extension

This project will extend Max Drive south from its existing terminus to Oak Street Extension as a new Minor Collector.

Project T8 Cost Estimate	
Referenced Cost Estimate	\$400,000
Date of Referenced Cost Estimate	2018
Reference ENR CCI	11062
Current ENR CCI (June 2019)	11268.48
Updated Cost Estimate (June 2019 \$)	\$407,472

Estimated Project Cost: \$407,472

Project T9 – Oak Street Extension

This project will extend Oak Street from its existing terminus of N 8th Street to Max Drive Extension as a Minor Collector.

Project T9 Cost Estimate	
Referenced Cost Estimate	\$350,000
Date of Referenced Cost Estimate	2018
Reference ENR CCI	11062
Current ENR CCI (June 2019)	11268.48
Updated Cost Estimate (June 2019 \$)	\$356,538

Estimated Project Cost: \$356,538

Project T10 – N 8th Street Extension 2

This project will extend 8th Street between Pine Street and Ash Street as a Minor Collector to provide alternate north-to-south connectivity.

Project T10 Cost Estimate	
Referenced Cost Estimate	\$400,000
Date of Referenced Cost Estimate	2018
Reference ENR CCI	11062
Current ENR CCI (June 2019)	11268.48
Updated Cost Estimate (June 2019 \$)	\$407,472

Estimated Project Cost: \$407,472

Project T11 – Southern Boundary Road

This project will construct a new Minor Collector Street between S 10th Street Extension and S 6th Street Extension.

Project T11 Cost Estimate	
Referenced Cost Estimate	\$1,100,000
Date of Referenced Cost Estimate	2018
Reference ENR CCI	11062
Current ENR CCI (June 2019)	11268.48
Updated Cost Estimate (June 2019 \$)	\$1,120,547

Estimated Project Cost: \$1,120,547

Project T12 – S 7th Street Extension

This project will extend S 7th Street between Orchard Street and new Southern Boundary Road as a Minor Collector.

Project T12 Cost Estimate	
Referenced Cost Estimate	\$1,100,000
Date of Referenced Cost Estimate	2018
Reference ENR CCI	11062
Current ENR CCI (June 2019)	11268.48
Updated Cost Estimate (June 2019 \$)	\$1,120,547

Estimated Project Cost: \$1,120,547

Additional information can be found in the 2019 Monroe Transportation System Plan. We recommend that the City complete a detailed preliminary design process when undertaking any of the projects on this CIP List to verify any design parameters discussed in that document.

The estimated total capital cost for all projects included on the Transportation System CIP list is \$7,222,438.

Recommended Compliance Costs

In addition to the projects previously discussed, the City should budget for future revisions to its Transportation System Plan. The current Transportation System Plan was completed in 2019 and reflects most current conditions. Maintaining master plans that reflect the current status of the City and accurately projects growth and needs is vital for ensuring that the transportation system has the capacity to continue serving the City. Budgeting for a new Transportation System Plan should be included in the Compliance Cost list for any updates made to the City's SDC methodology.

Estimated Project Cost: \$84,000

If you have any questions about projects included on this Transportation System CIP List, please do not hesitate to contact me at mwadlington@civilwest.net or 541.223.5130.

Sincerely,

Matt Wadlington, PE
Civil West Engineering Services, Inc.



December 2019

City of Monroe
664 Commercial St.
Monroe, OR 97456



RE: Wastewater System CIP List

This technical memorandum has been prepared to provide the City of Monroe with an updated Capital Improvement Project (CIP) list related to the wastewater collection and treatment system. This memorandum was prepared based on information developed from the 2016 Wastewater Master Plan. This CIP List can serve as the basis for revising the City's System Development Charge (SDC) methodology to ensure that adequate funds are collected to undertake growth-related wastewater system infrastructure projects.

Recommended Wastewater System Improvements

The City's 2016 Wastewater Master Plan identified several projects (WW1-WW8) and the 2019 Wastewater Master Plan Amendment (WW9-WW11) that the City should plan to undertake.

Project WW1 – Lift Station Upgrade

Improvements to the station itself include retrofitting of the existing wet well so that new submersible pumps and new controls can be utilized to meet pump capacity requirements. It is recommended that a new generator is installed at the site.

Project WW1 Cost Estimate	
Referenced Cost Estimate	\$692,546
Date of Referenced Cost Estimate	2014
Reference ENR CCI	9806
Current ENR CCI (June 2019)	11268.48
Updated Cost Estimate (June 2019 \$)	\$795,833

Estimated Project Cost: \$795,833

Project WW2 – Force Main Replacement

As part of the Lift Station upgrades, it is also recommended that the old 6-in force main (~1633 ft.) be replaced with a new 8-inch force main.

Project WW2 Cost Estimate	
Referenced Cost Estimate	\$442,038
Date of Referenced Cost Estimate	2014
Reference ENR CCI	9806
Current ENR CCI (June 2019)	11268.48
Updated Cost Estimate (June 2019 \$)	\$507,964

Estimated Project Cost: \$507,964

Project WW3 – Replacement of Sewer with Larger Diameter Pipe

Improvements to the gravity systems existing collection pipes include undersized pipe replacement.

Project WW3 Cost Estimate	
Referenced Cost Estimate	\$87,818
Date of Referenced Cost Estimate	2014
Reference ENR CCI	9806
Current ENR CCI (June 2019)	11268.48
Updated Cost Estimate (June 2019 \$)	\$100,915

Estimated Project Cost: \$100,915

Project WW4 – New Screening System

This project would construct a new headworks facility that includes a mechanically cleaned fine screen and manually cleaned bypass screen. The addition of a screening system improves preliminary treatment at the headworks and prevents excessive wear downstream.

Project WW4 Cost Estimate	
Referenced Cost Estimate	\$372,869
Date of Referenced Cost Estimate	2014
Reference ENR CCI	9806
Current ENR CCI (June 2019)	11268.48
Updated Cost Estimate (June 2019 \$)	\$428,479

Estimated Project Cost: \$428,479

Project WW5 – New Pipes Connecting Basins

The existing basins work well during normal operating conditions, but are undersized for the transfer of peak flows.

Project WW5 Cost Estimate	
Referenced Cost Estimate	\$15,092
Date of Referenced Cost Estimate	2014
Reference ENR CCI	9806
Current ENR CCI (June 2019)	11268.48
Updated Cost Estimate (June 2019 \$)	\$17,343

Estimated Project Cost: \$17,343

Project WW6 – Sewer Pipe Repairs

Improvements to the gravity systems existing collection pipes include replacement, grouting laterals at main, stop repairs, and lateral connection replacements.

Project WW6 Cost Estimate	
Referenced Cost Estimate	\$34,380
Date of Referenced Cost Estimate	2014
Reference ENR CCI	9806
Current ENR CCI (June 2019)	11268.48
Updated Cost Estimate (June 2019 \$)	\$39,507

Estimated Project Cost: \$39,507

Project WW7 – Manhole Repairs

Improvements to the gravity systems existing manholes include replacement, lining, patches, and grouting.

Project WW7 Cost Estimate	
Referenced Cost Estimate	\$17,190
Date of Referenced Cost Estimate	2014
Reference ENR CCI	9806
Current ENR CCI (June 2019)	11268.48
Updated Cost Estimate (June 2019 \$)	\$19,754

Estimated Project Cost: \$19,754

Project WW8 – Connection Repairs

Improvements to the gravity systems existing service connections include connection repairs, illegal storm sewer connections, and damaged service lines.

Project WW8 Cost Estimate	
Referenced Cost Estimate	\$62,648
Date of Referenced Cost Estimate	2014
Reference ENR CCI	9806
Current ENR CCI (June 2019)	11268.48
Updated Cost Estimate (June 2019 \$)	\$71,991

Estimated Project Cost: \$71,991

Project WW9 – Alternative 1 Diffused Aeration System

Improvements to the WWTF included in Alternative 1, will reduce effluent BOD by providing additional oxygen during the treatment process.

Project WW9 Cost Estimate	
Referenced Cost Estimate	\$408,746
Date of Referenced Cost Estimate	2019
Reference ENR CCI	11268
Current ENR CCI (June 2019)	11268.48
Updated Cost Estimate (June 2019 \$)	\$408,746

Estimated Project Cost: \$408,746

Project WW10 – Emergency Power

Improvements to the onsite emergency back-up power include a 80kW Generator and propane fuel tank to supply power to the influent and effluent flow meters, chemical dosing pumps, headworks screen and the aeration system during a power outage.

Project WW10 Cost Estimate	
Referenced Cost Estimate	\$83,325
Date of Referenced Cost Estimate	2019
Reference ENR CCI	11268
Current ENR CCI (June 2019)	11268.48
Updated Cost Estimate (June 2019 \$)	\$83,329

Estimated Project Cost: \$83,325

Project WW11 – Telemetry

Improvements to the telemetry at the WWTF will allow for monitoring of treatment equipment function.

Project WW11 Cost Estimate	
Referenced Cost Estimate	\$8,250
Date of Referenced Cost Estimate	2019
Reference ENR CCI	11268
Current ENR CCI (June 2019)	11268.48
Updated Cost Estimate (June 2019 \$)	\$8,250

Estimated Project Cost: \$8,250

The estimated total capital cost for all projects included on the Wastewater System CIP list is \$2,638,206.

Recommended Compliance Costs

In addition to the projects previously discussed, the City should continue to maintain an updated Wastewater Facilities Plan. Maintaining a facilities plan that reflects the current status of the City and accurately projects its growth and needs is vital for ensuring that the wastewater system has the capacity to continue serving the City. Budgeting for a new Wastewater Facilities Plan should be included in the Compliance Cost list for any updates made to the City's SDC methodology.

Estimated Project Cost: \$80,000

If you have any questions about projects included on this Wastewater System CIP List, please do not hesitate to contact me at mwadlington@civilwest.net or 541.223.5130.

Sincerely,

Matt Wadlington, PE
Civil West Engineering Services, Inc.



October 2019

City of Monroe
664 Commercial Street
Monroe, OR 97456



RE: Water System CIP List Update

This technical memorandum has been prepared to provide the City of Monroe with an updated Capital Improvement Project (CIP) list related to the potable water system. The City has just completed a Water System Master Plan October 2019. This CIP List can serve as the basis for revising the City's System Development Charge (SDC) methodology to ensure that adequate funds are collected to undertake growth-related water system infrastructure projects.

Recommended Water System Improvements

The City's 2019 Water System Master Plan identified several projects that the City should plan to undertake. Since this Plan was newly developed, none of the projects have been completed and all are listed below.

Project W1 – SCADA: Restoring WTP Automation and Data Acquisition Upgrades

The Water System Master Plan recommends re-establishing the SCADA controls at the WTP so that the plant can run automatically.

Project W1 Cost Estimate	
Referenced Cost Estimate	\$125,760
Date of Referenced Cost Estimate	2019
Reference ENR CCI	11268
Current ENR CCI (June 2019)	11268.48
Updated Cost Estimate (June 2019 \$)	\$125,760

Estimated Project Cost: \$125,760

Project W2 – SCADA: Raw Water Intake VFD and Metering Upgrades

The Water System Master Plan recommends upgrading the raw water meter to allow for greater control and monitoring of the system.

Project W2 Cost Estimate	
Referenced Cost Estimate	\$11,022
Date of Referenced Cost Estimate	2019
Reference ENR CCI	11268
Current ENR CCI (June 2019)	11268.48
Updated Cost Estimate (June 2019 \$)	\$11,022

Estimated Project Cost: \$11,022

Project W3 – SCADA: Metering Upgrades

Due to the lack of metering and controls at the reservoir, the Water System Master Plan recommends integrating SCADA into the metering and level controls.

Project W3 Cost Estimate	
Referenced Cost Estimate	\$18,282
Date of Referenced Cost Estimate	2019
Reference ENR CCI	11268
Current ENR CCI (June 2019)	11268.48
Updated Cost Estimate (June 2019 \$)	\$18,282

Estimated Project Cost: \$18,282

Project W4 – Source: Raw Water Intake Roughing Filter

To minimize backwashing when the water is turbid, the Water System Master Plan recommends adding a roughing filter be put into service to lower the turbidity.

Project W4 Cost Estimate	
Referenced Cost Estimate	\$126,484
Date of Referenced Cost Estimate	2019
Reference ENR CCI	11268
Current ENR CCI (June 2019)	11268.48
Updated Cost Estimate (June 2019 \$)	\$126,484

Estimated Project Cost: \$126,484

Project W5 – Source: Pre-Filtration Mixing Basin

The Water System Master Plan recommends installing a filtration mixing basin in sequence after the roughing filter to replace the existing flash mixing.

Project W5 Cost Estimate	
Referenced Cost Estimate	\$29,029
Date of Referenced Cost Estimate	2019
Reference ENR CCI	11268
Current ENR CCI (June 2019)	11268.48
Updated Cost Estimate (June 2019 \$)	\$29,029

Estimated Project Cost: \$29,029

Project W6 – Source: Surface Water Source Options

The Water System Master Plan evaluates several options for obtaining water rights. The recommend option is to maintain water from surface water and obtain water rights on the Willamette or Long Tom.

Project W6 Cost Estimate	
Referenced Cost Estimate	\$48,831
Date of Referenced Cost Estimate	2019
Reference ENR CCI	11268
Current ENR CCI (June 2019)	11268.48
Updated Cost Estimate (June 2019 \$)	\$48,831

Estimated Project Cost: \$48,831

Project W7 – Treatment: Spare Parts at Water Treatment Plant

The Water System Master Plan recommends the City maintain on hand more spare parts needed for frequent maintenance.

Project W7 Cost Estimate	
Referenced Cost Estimate	\$6,000
Date of Referenced Cost Estimate	2019
Reference ENR CCI	11268
Current ENR CCI (June 2019)	11268.48
Updated Cost Estimate (June 2019 \$)	\$6,000

Estimated Project Cost: \$6,000

Project W8 – Treatment: Granular Activated Carbon Reactors

The Water System Master Plan recommends installing a granular activated carbon filtration system after the Ultrafiltration system membranes to decrease organic content in the water.

Project W8 Cost Estimate	
Referenced Cost Estimate	\$280,561
Date of Referenced Cost Estimate	2019
Reference ENR CCI	11268
Current ENR CCI (June 2019)	11268.48
Updated Cost Estimate (June 2019 \$)	\$280,561

Estimated Project Cost: \$280,561

Project W9 – Treatment: Air Compressor

The Water System Master Plan indicates a new air compressor is needed at the Water Treatment Plant.

Project W9 Cost Estimate	
Referenced Cost Estimate	\$9,000
Date of Referenced Cost Estimate	2019
Reference ENR CCI	11268
Current ENR CCI (June 2019)	11268.48
Updated Cost Estimate (June 2019 \$)	\$9,000

Estimated Project Cost: \$9,000

Project W10 – Treatment: Water Treatment Plant Automation Upgrades

The Water System Master Plan recommends restoring the automation to the Plant. The following project cost includes new parts and accessories needed for this.

Project W10 Cost Estimate	
Referenced Cost Estimate	\$12,000
Date of Referenced Cost Estimate	2019
Reference ENR CCI	11268
Current ENR CCI (June 2019)	11268.48
Updated Cost Estimate (June 2019 \$)	\$12,000

Estimated Project Cost: \$12,000

Project W11 – Treatment: Onsite Backup Generator and Protective Structure

The Water System Master Plan recommends installing a system for backup power to the Water Treatment Plant. In case of power outage, the system would still be able to operate if this is installed for a period of time.

Project W11 Cost Estimate	
Referenced Cost Estimate	\$130,232
Date of Referenced Cost Estimate	2019
Reference ENR CCI	11268
Current ENR CCI (June 2019)	11268.48
Updated Cost Estimate (June 2019 \$)	\$130,232

Estimated Project Cost: \$130,232

Project W12 – Treatment: Sodium Hypochlorite Generator for Disinfection

The Water System Master Plan recommends installing a Sodium Hypochlorite at the Water treatment Plant.

Project W12 Cost Estimate	
Referenced Cost Estimate	\$72,254
Date of Referenced Cost Estimate	2019
Reference ENR CCI	11268
Current ENR CCI (June 2019)	11268.48
Updated Cost Estimate (June 2019 \$)	\$72,254

Estimated Project Cost: \$ 72,254

Project W13 – Reservoir: Mixing/aeration Upgrades for DBP Control

The Water System Master Plan recommends reducing DBP's by using an Aeration/Ventilation system in the Reservoir. This is to be used in conjunction with the GAC filtration project as described in Project W8.

Project W13 Cost Estimate	
Referenced Cost Estimate	\$35,648
Date of Referenced Cost Estimate	2019
Reference ENR CCI	11268
Current ENR CCI (June 2019)	11268.48
Updated Cost Estimate (June 2019 \$)	\$35,648

Estimated Project Costs: \$35,648

Project W14 – Distribution: Citywide Fire Protection Upgrades Project

The Water System Master Plan recommends a system upgrade to provide fire protection to the City.

Project W14 Cost Estimate	
Referenced Cost Estimate	\$330,085
Date of Referenced Cost Estimate	2019
Reference ENR CCI	11268
Current ENR CCI (June 2019)	11268.48
Updated Cost Estimate (June 2019 \$)	\$330,085

Estimated Project Cost: \$330,085

The estimated total capital cost for all projects included on the Water System CIP list is \$1,235,187.
Recommended Compliance Costs

As mentioned previously the City has just completed a Water System Master Plan and Water Management and Conservation Plan. Continuing to maintain master plans that reflect the current status of the City and accurately project its growth and needs is vital for ensuring that the potable water system has the capacity to continue serving the City. Budgeting for a new Water System Master Plan should be included in the Compliance Cost list for any updates made to the City's SDC methodology.

Estimated Project Cost: \$60,000

The City is also required to maintain a Water Management and Conservation Plan (WMCP), and its existing WMCP was prepared in 2015. Maintaining a WMCP that reflects the current status of the City is important for ensuring adequate water supplies for City water system customers. Budgeting for a new WMCP should be included in the Compliance Cost list for any updates made to the City's SDC methodology.

Estimated Project Cost: \$25,000

If you have any questions about projects included on this Water System CIP List, please do not hesitate to contact me at mwadlington@civilwest.net or 541.223.5130.

Sincerely,

Matt Wadlington, PE
Civil West Engineering Services, Inc.



Appendix B

Sample No.	Sample Land Use Description & Notes	Land Use Info			SDC Calcs				Total SDC
		No. of Rooms (hotel, etc)	Square Feet Impervious Surface	Gross Building Square Footage	Water SDC	Sewer SDC	Stormwater SDC	Transportation SDC	
1	Motel/Hotel	71	50,277	na	\$72,946.29		\$6,133.79		\$79,080.08
2	Sit-down restaurant	na	8,300	4,243	\$58,124.15		\$1,012.60		\$59,136.75
3	Bank - assume 50% of gross floor space is dedicated to tellers	na	39,600	3,952	\$4,060.33		\$4,831.20		\$8,891.53
4	Fast Food	na	37,641	3,098	\$42,438.99		\$4,592.20		\$47,031.19
5	Typical Office Building -general office use, professional space, etc	na	39,600	5,748	\$3,937.04		\$4,831.20		\$8,768.24
6	Mixed use development -9 unit residential complex (equal to 9 resident. EDU's) - plus commercial space	na	11,456	5,626	\$34,675.86		\$40,570.37		\$75,246.23
8	Retail Shop	na	74,360	23,946	\$16,401.61		\$9,071.92		\$25,473.53
9	A service station/ gas station - convenience store - assume 8 pumps - restrooms	na	4,000	1,500	\$3,767.18		\$488.00		\$4,255.18
10	Big Box Shopping Center	na	450,000	132,000	\$90,412.30		\$54,900.00		\$145,312.30
11	Specialty Restaurant/Bistro/Independent	na	2,500	1,500	\$20,548.25		\$305.00		\$20,853.25
12	Typical Residential EDU	na	na	na	\$3,424.71		\$4,352.53		\$7,777.24

Appendix C

Water EDU Worksheet

(A)	Total residential connections in UGB	236
(B)	Total water sold to residential connections within UGB	936920
(C)	Water use per EDU per year (B/A) in gal per year per EDU	3970.0
(D)	System-wide water sales (inside and outside UGB) in gal	1337890
(E)	System wide EDU count (D/C)	337.00
(F)	Persons per household per Census inside UGB	2.25
(G)	Persons per household outside UGB	0
(H)	Estimated population within UGB	648
(I)	Average growth rate within the UGB for residential and nonresidential sectors	0.25%
(J)	Projected population within the UGB for 2044	805
(K)	Average growth rate outside the UGB	0.00%
(L)	Water used by residential accounts outside the UGB (gal)	0
(M)	Residential EDU's outside UGB (L/C)	0
(N)	Total water used inside the UGB (gal)	1337890
(O)	Total nonresidential EDU's inside UGB (N-B/C)	0.00
(P)	Total EDU's inside UGB (O+A)	236.00
(Q)	Total nonresidential EDU's outside UGB (E-A-M-O)	0
(R)	Total EDU's outside UGB (M+Q)	0
(S)	Projected EDU's inside UGB	407.00
(T)	Projected EDU's outside UGB	0
(U)	Total future EDU's (S+T)	407.00
(V)	Total growth EDU's (U-E)	70.00