

## FINAL REPORT



**Tahoe-Truckee  
Sanitation Agency**  
Sewer Connection Fee Study  
March 2019





March 20, 2019

Mr. LaRue Griffin  
General Manager  
Tahoe-Truckee Sanitation Agency  
13720 Butterfield Drive  
Truckee, CA 96161  
March 23, 2015

**Subject: Final Report – Sewer Connection Fees**

Dear Mr. Griffin:

Enclosed please find HDR's final report regarding the sewer connection fees for Tahoe-Truckee Sanitation Agency (T-TSA). The conclusions and recommendations contained within this report should enable T-TSA to implement cost-based connection fees.

This report has been prepared using generally accepted financial and engineering principles. T-TSA's financial, budgeting, planning, and engineering data were the primary sources for much of the information contained in this report. HDR would recommend that prior to implementing the charges, the charges be reviewed by T-TSA legal counsel for compliance with California State law.

HDR appreciates the opportunity to assist T-TSA in this matter. We also would like to thank you and your staff for the assistance provided to us. We look forward to future opportunities to work with T-TSA.

Sincerely yours,  
HDR Engineering, Inc.

A handwritten signature in black ink, appearing to read 'Shawn Koorn'.

Shawn Koorn  
Associate Vice President



# Table of Contents

---

<b>1</b>	<b>Introduction</b>	
1.1	Introduction.....	1
1.2	Organization of Report.....	1
1.3	Disclaimer .....	2
<b>2</b>	<b>Overview of Connection Fees</b>	
2.1	Introduction.....	3
2.2	Defining Connection Fees .....	3
2.3	Economic Theory and Connection Fees.....	3
2.4	Connection Fee Criteria .....	4
2.5	Overview of the Connection Fee Methodology .....	6
2.6	Summary .....	8
<b>3</b>	<b>Legal Considerations in Establishing Connection Fees for T-TSA</b>	
3.1	Introduction.....	9
3.2	Requirements Under California Law.....	9
3.3	Proposition 218 and Connection Fees.....	10
3.4	Summary .....	11
<b>4</b>	<b>Determination of T-TSA's Sewer Connection Fees</b>	
4.1	Introduction.....	12
4.2	Overview of T-TSA's Sewer System .....	12
4.3	Existing Sewer Connection Fee .....	13
4.4	Calculation of T-TSA's Sewer Connection Fee.....	14
4.4.1	System Planning Criteria.....	14
4.4.2	Determination of Equivalent Dwelling Units .....	15
4.4.3	Calculation of the Sewer Connection Fee .....	15
4.5	Allowable Sewer Connection Fees .....	17
4.6	Implementation of the Sewer Connection Fee .....	18
4.7	Key Assumptions.....	22
4.8	Board Presentations .....	22
4.9	Consultant Recommendations .....	23
4.10	Summary .....	24

## Technical Appendix

## Abbreviations and Acronyms

CCI	Construction Cost Index
CIP	Capital Improvement Plan
EDU	Equivalent dwelling unit
ENR	Engineering News Record
GPD	Gallons Per Day
MGD	Million gallons per day
OC	Original Cost
OCLD	Original Cost Less Depreciation
RCN	Replacement Cost New
RCNLD	Replacement Cost New Less Depreciation
SDC	System Development Charge
T-TSA	Tahoe-Truckee Sanitation Agency

## 1.0 Introduction

### 1.1 Introduction

HDR Engineering, Inc. (HDR) was retained by the Tahoe-Truckee Sanitation Agency (T-TSA) to review and update its sewer connection fees. The objective of this study is to calculate cost-based sewer connection fees for new customers connecting to T-TSA's sewer system.

Sewer connection fees provide the means of balancing the cost requirements for new utility infrastructure between existing customers and new customers. The portion of existing infrastructure that will provide service (capacity) to new customers is included in T-TSA's connection fees. In contrast to this, T-TSA's future capital improvement projects that are related to renewal and replacement of existing infrastructure in services are typically included within the rates charged to T-TSA's customers, and are not included within the connection fee. By establishing cost-based connection fees, T-TSA will continue its policy of having growth pay for growth and existing utility customers should, for the most part, be sheltered from the financial impacts of growth and capacity expansion of the system.

*"The objective of this study is to calculate cost-based sewer connection fees for new customers connecting to T-TSA's sewer system."*

T-TSA's service area anticipates growth in the future and therefore it is prudent for T-TSA to review these charges and update them as appropriate. T-TSA last reviewed and updated their sewer connection fees in 2015.

### 1.2 Organization of Report

This report documents the methodology, approach and technical analysis undertaken by HDR and T-TSA to develop their sewer connection fees. The report is divided into four sections. Section 1 provides a brief introduction and overview of the study. Given this brief introduction,

*"By establishing cost-based connection fees, T-TSA will take a position of having growth pay for growth and existing utility customers should, for the most part, be sheltered from the financial impacts of growth."*

Section 2 provides an overview of connection fees and the criteria and general methodology that should be used to calculate and establish cost-based connection fees. Next, Section 3 provides an overview of the requirements under California law for determining connection fees. Finally, Section 4 reviews T-TSA specific calculations of the cost-based sewer connection fees and provides a summary of the analyses and "allowable" connection fees.

### **1.3 Disclaimer**

HDR, in its calculation of the connection fees presented in this report, has used generally accepted engineering and ratemaking principles. This should not be construed as a legal opinion with respect to California law. HDR recommends that T-TSA have its legal counsel review the connection fees as set forth in this report to ensure compliance with California law.



## 2.0 Overview of Connection Fees

---

### 2.1 Introduction

An important starting point in establishing connection fees is to have a basic understanding of the purpose of these charges, along with criteria and general methodology that is used to establish cost-based connection fees. Presented in this section of the report is an overview of connection fees and the criteria and general methodology that is used to develop cost-based connection fees.

### 2.2 Defining Connection Fees

The first step in establishing cost-based connection fees is to gain a better understanding of the definition of a system development charge (SDC) or connection fee.<sup>1</sup> For the purposes of this report, an SDC and/or connection fee is defined as follows:

*“System development charges are one-time charges paid by new development to finance construction of public facilities needed to serve them.”<sup>2</sup>*

Simply stated, connection fees are a contribution of capital for the value of either available capacity in the existing system, or help finance planned future growth-related capacity improvements. At some utilities, connection fees may be referred to as system development charges, impact fees, capacity reserve charges, infrastructure investment fees, etc. Regardless of the label used to identify them, their objective is the same. That is, these charges are intended to provide funds to the utility to finance all or a part of the capital improvements needed to serve and accommodate new customer growth. Absent those charges, many utilities would likely be unwilling to build growth-related facilities (i.e., burden existing rate payers with the entire cost of growth-related capacity expansion).

### 2.3 Economic Theory and Connection Fees

Connection fees are generally imposed as a condition of service. The objective of a connection fee is not to generate money for a utility, but to ensure that all customers seeking to connect to the utility’s system bear an equitable share of the cost of available (excess) capacity that existing customers have invested in the existing system and any future growth-related expansions. Through the implementation of cost-based and equitable connection fees, existing customers will not be unduly burdened with the cost of new development.

---

<sup>1</sup> System development charges and connection fees are used interchangeably in this section of the report. System development charges are a more common term for these types of charges.

<sup>2</sup> Arthur C. Nelson, System Development Charges for Water, Wastewater, and Stormwater Facilities, Lewis Publishers, New York, 1995, p. 1,

By establishing cost-based connection fees, T-TSA will be able to continue to provide adequate infrastructure to meet growth-related needs, and more importantly, providing this required infrastructure to new customers in a cost-based and equitable manner.

## 2.4 Connection Fee Criteria

In determining connection fees, a number of different criteria are utilized. Criteria outlined in industry literature and most often used by utilities to establish connection fees include the following:

- State/local laws
- System planning criteria
- Financing criteria
- Customer understanding

Many states and local communities have enacted laws that govern the calculation and imposition of connection fees. These laws must be followed in the development of connection fees. Most states require a reasonable relationship between the charge and the cost associated with providing service (capacity) to the customer. The charges do not need to be mathematically exact, but must bear a reasonable relationship to the cost burden imposed. The utilization of the planning criteria, the actual costs of construction and the planned costs of construction provide the nexus for the reasonable relationship requirement.

The use of system planning criteria is one of the more important aspects in the determination of the connection fees. System planning criteria provides the rational nexus between the amount of infrastructure necessary to provide service and the charge to the customer. In general terms, the rational nexus test requires that there be a connection (nexus) established between new development and the new or expanded facilities required to accommodate new development, and an appropriate apportionment of the cost to the new development in relation to benefits reasonably to be received. An example using system planning criteria is the determination from T-TSA's planning documents that an equivalent dwelling unit requires 200 gallons per day of capacity. The connection fee methodology establishes the value of one (1) equivalent dwelling unit (EDU) at 200 gallons per day.

*"The use of system planning criteria is one of the more important aspects in the determination of the connection fees. System planning criteria provide the rational nexus between the amount of infrastructure necessary to provide service and the charge to the customer."*

A rational nexus test is used to evaluate the reasonable relationship between the connection fee and infrastructure necessary to accommodate the new development. A rational nexus test typically contemplates the following:

1. *"A connection be established between new development and the new or expanded facilities required to accommodate such development. This establishes the rational basis of public policy."*



2. *Identification of the cost of these new or expanded facilities needed to accommodate new development. This establishes the burden to the public of providing new facilities to new development and the rational basis on which to hold new development accountable for such costs. This may be determined using the so-called Banberry factors. [Banberry Development Company v. South Jordan Agency (631 P.2d 899, Utah 1981)].*
3. *Appropriate apportionment of that cost to new development in relation to benefits it reasonably receives. This establishes the nexus between the fees being paid to finance facilities that accommodate new development and the benefit new development receives from such new facilities.”<sup>3</sup>*

The first bullet of the rational nexus test requires the establishment of a rational basis of public policy. This implies the planning and capital improvement studies that are used to establish the need for new facilities to accommodate growth. Adopted master plans or facility plans should firmly meet this first test since these plans assess existing facilities and capacity, project future capacity requirements and determine the future capital infrastructure and new facilities needed to accommodate growth.

The second portion of the rational nexus test discusses the Banberry Factors. In summary form, “consideration must be given to seven factors to determine the proportionate share of costs to be borne by new development:

1. *The cost of existing facilities*
2. *The means by which existing facilities have been financed*
3. *The extent to which new development has already contributed to the cost of providing existing excess capacity*
4. *The extent to which existing development will, in the future, contribute to the cost of providing existing facilities used community wide or non-occupants of new development*
5. *The extent to which new development should receive credit for providing at its cost facilities the community has provided in the past without charge to other development in the service area.*
6. *Extraordinary costs incurred in serving new development*
7. *The time-price differential inherent in fair comparisons of amount of money paid at different times.”<sup>4</sup>*

The final portion of the rational nexus test is the reasonable apportionment of the cost to new development in relation to benefits it reasonably receives. This is accomplished in the methodology to establish the connection fee, which is discussed in more detail within this section.

---

<sup>3</sup> Ibid, p. 16 and 17.

<sup>4</sup> Ibid, P. 18 and 19.

One of the driving forces behind establishing cost-based connection fees is that growth pays for growth. Therefore, connection fees are established as a means of having new customers pay an equitable share of the cost of their required capacity (infrastructure). The financing criteria for establishing connection fees relates to the method used to finance infrastructure on the system and assures that customers are not paying twice for infrastructure – once through the connection fee and again through rates. The double payment can come in through the imposition of a connection fee and then the requirement to pay debt service within a customer’s rates. The financing criteria also reviews the basis under which main line and collection line extensions were provided such that the customer is not charged for infrastructure that was provided (contributed) by developers.

The component of customer understanding implies that the fee is easy to understand. This criterion has implications for the way that the fee is implemented and assessed to the customer. For a sewer system, the fee is generally based on equivalent dwelling units and the average flow (capacity) for that unit of measure. This makes it easy for the customer to understand that the level of fee is based on the flow or a certain capacity to meet that customer’s needs. The other implication of this criterion is that the methodology is clear and concise in its calculation of the amount of infrastructure necessary to provide service.

## 2.5 Overview of Connection Fee Methodology

There are “generally-accepted” methodologies that are used to establish connection fees. Nelson describes eight different methodologies that may be used to establish connection fees. “They include:

- *Market capacity method*
- *Prototypical system method*
- *Growth-related cost allocation method*
- *Recoupment value method, also known as the buy-in method*
- *Replacement cost method*
- *Marginal cost method*
- *Average cost method*
- *System wide and growth-related cost-attribution method” (combined)<sup>5</sup>*

As Nelson notes, each of these methods may have certain advantages and disadvantages and should be applied in a manner that reflects circumstances and conditions of the utility. As an example, a utility which has significant capacity in their existing system and can accommodate future growth would likely use the recoupment (buy-in) method. In contrast to this, a utility with no existing capacity which requires expansion of capacity to accommodate growth could potentially use the growth-related cost allocation method or the marginal cost method. For utilities that have some existing capacity available to serve a portion of new development, but must build additional capacity to serve all future development, the system-wide and growth-related attribution method may be appropriate. In the case of the T-TSA, there is some capacity available within T-TSA’s existing system and some future projects that T-TSA is facing that are

---

<sup>5</sup> Ibid., P. 71.

regulatory or expansion related and would be included in the connection fee. Given that, a combined method (existing assets plus future capital improvements which are growth related) was deemed to be the most equitable and appropriate methodology for T-TSA, given the current circumstances.

Regardless of the overall methodology selected, common denominators of the technical analyses are the various steps undertaken. Within the generally accepted system development charge methodologies, there are a number of different steps undertaken. These steps are as follows:

- Determination of system planning criteria
- Determination of equivalent dwelling units
- Calculation of system component costs
- Determination of any credits

The first step in establishing connection fees is the determination of the system planning criteria. This implies calculating the amount of sewer capacity required by a single-family residential customer or an equivalent dwelling unit (EDU). For sewer systems, sewer demand per equivalent dwelling unit is most often used, since this represents the basis for system design. The number of existing customers is expressed in equivalent dwelling units. This provides the linkage between the amounts of infrastructure necessary to provide service to a set number of customers.

Once the number of equivalent dwelling units, or capacity components for the system is determined, a component by component analysis is undertaken to determine the portion of the connection fee attributable to each component in dollars per equivalent dwelling unit. In this process, the existing assets must be valued. Existing assets may be valued in a number of different ways. These methods may include the following:

- ✓ Original Cost (OC)
- ✓ Original Cost Less Depreciation (OCLD)
- ✓ Replacement Cost New (RCN)
- ✓ Replacement Cost New Less Depreciation (RCNLD)

Given these four different methods for valuing the assets, the selection of the valuation method certainly arises. The American Water Works Association M-1 manual notes the following concerning these various generally accepted valuation methods:

*“Using the OC and OCLD valuations, the SDC [connection fee] reflects the original investment in the existing capacity. The new customer “buys in” to the capacity at the OC or the net book value cost (OCLD) for the facilities and as a result pays an amount similar to what the existing customers paid for the capacity (OC) or the remaining value of the original investment (OCLD).*

*Using the RCN and the RCNLD valuations, the SDC [connection fee] reasonably reflects the cost of providing new expansion capacity to customers as if the capacity was added at the time the new customers connected to the sewer system. It may be also thought of as a valuation method to fairly compensate the existing customers for the carrying costs of the excess capacity built into the system in advance of when the new customers connect to the system. This is because, up to*

*the point of the new customer connecting to the system, the existing customers have been financially responsible for the carrying costs of that excess capacity that is available to development.”<sup>6</sup>*

As a point of reference for this study, the T-TSA analysis will use a RCN methodology for all assets. The RCN methodology is in keeping with T-TSA’s historical methodology for connection fees as shown in T-TSA Resolution 11-2008, which adopted the asset replacement approach for the calculation of connection fees. T-TSA’s existing assets are escalated to current dollars using a cost index (e.g. the Engineering News-Record, Construction Cost Index; ENR CCI).

After the existing infrastructure is analyzed the existing and future equivalent dwelling units are divided into the cost to determine the gross existing or buy-in fee. Then the connection fee-eligible future expansion projects are divided by the future equivalent dwelling units to determine the gross future connection fee. Both the gross existing and future fees are added together for a total gross connection fee. The last step in the calculation of the connection fee is the determination of any credits. This is generally a calculation to assure that customers are not paying twice – once through connection fees and again within the sewer rates.

## **2.6 Summary**

This section of the report has provided an overview of connection fees; the basis for establishing the charges, considerations in establishing connection fees and the burden development places on the system and the steps typically taken in the development of the technical analyses.

In the development of T-TSA’s connection fees, the issues identified in this section of the report have been addressed and will be discussed in more detail in later sections of the report. The next section of the report provides a brief overview of the legal considerations in establishing connection fees, particularly as they relate California law.

---

<sup>6</sup> AWWA M-1 Manual, 6<sup>th</sup> Edition, p. 268



## 3.0 Legal Considerations in Establishing Connection Fees for T-TSA

### 3.1 Introduction

An important consideration in establishing connection fees is any legal requirements at the state or local level. The legal requirements often establish the methodology around which the connection fees must be calculated or how the funds must be used. Given that, it is important for T-TSA to understand these legal requirements and develop and adopt their connection fees in compliance with those legal requirements. This section of the report provides an overview of the legal requirements for establishing system development charges, or connection fees under California law. A discussion of the applicability of Proposition 218, as it relates to connection fees, is also provided.

The discussion within this section of the report is intended to be a summary of our understanding of the relevant California law as it relates to establishing connection fees. It in no way constitutes a legal interpretation of California law by HDR.

### 3.2 Requirements Under California Law

In establishing connection fees, an important requirement is that they be developed and implemented in conformance with local laws. In particular, many states have established specific laws regarding the establishment, calculation and implementation of connection fees. The main objective of most state laws is to assure that these charges are established in such a manner that they are fair, equitable and cost-based. In other cases, state legislation may have been needed to provide the legislative powers to the utility to establish the charges.

*“The laws for the enactment of connection fees in California are found in California Government Code sections 66013, 66016, and 66022 within the ‘Mitigation Fee Act.’”*

The laws for the enactment of connection fees in California are codified in California Government Code sections 66013, 66016, and 66022, which are interspersed within the ‘Mitigation Fee Act.’ The Mitigation Fee Act is comprehensive legislation dealing mainly with development impact fees, although the above sections set forth the various requirements for imposition of connection fees in California: calculation of the fees, noticing, accounting and reporting requirements, and processes for judicial review.

A summary of the relevant statutes required in the calculation of connection fees is as follows:

*“66013 (a) Notwithstanding any other provision of law, when a local agency imposes fees for sewer connections or sewer connections, or imposes capacity charges, those fees or charges shall not exceed the estimated reasonable cost of providing the service for which the fee or charge is imposed, unless a question regarding the amount of the fee or charge imposed in excess of the estimated*

*reasonable cost of providing the services or materials is submitted to, and approved by, a popular vote of two-thirds of those electors voting on the issue.”*

*“66013 (b) (3) ‘Capacity charge’ means a charge for public facilities in existence at the time a charge is imposed or charges for new public facilities to be acquired or constructed in the future that are of proportional benefit to the person or property being charged, including supply or capacity contracts for rights or entitlements, real property interests, and entitlements and other rights of the local agency involving capital expense relating to its use of existing or new public facilities. A “capacity charge” does not include a commodity charge.”*

T-TSA’s proposed sewer connection fees are “capacity charges” as defined in the preceding provision. In addition to the determination of “the estimated reasonable cost of providing the service for which the fee is imposed,” California law also requires the following:

- That notice (of the time and place of the meeting, including a general explanation of the matter to be considered) and a statement that certain data is available be mailed to those who filed a written request for such notice,
- That certain data (the estimated cost to provide the service and anticipated revenue sources) be made available to the public,
- An opportunity for public input at an open and public meeting to adopt or modify the fee, and
- That revenue in excess of actual cost be used to reduce the fee creating the excess.

The basic principle that needs to be followed under California law is that the charge be based on a proportionate share of the costs of the system required to provide service and that the requirements for adoptions and accounting be followed in compliance with California law.

### **3.3 Proposition 218, 26, and Connection Fees**

In 1996, the voters of California approved Proposition 218, which required that the imposition of certain fees and assessments by municipal governments require a vote of the people to change or increase the fee or assessment. Of interest in this particular study is the applicability of Proposition 218 to the establishment of connection fees for T-TSA.

In *Richmond v. Shasta Community Services Dist.*, 32 Cal.4th 409 (2004), the California Supreme Court held that sewer connection fees and capacity charges are not “assessments” under Proposition 218 because they are imposed only on those who are voluntarily seeking sewer service, rather than being charged to particular identified parcels, and therefore such fees are not subject to the procedural or substantive requirements of Proposition 218. The court also held that such fees can properly be enacted by either ordinance or resolution.

In November 2010 the voters of California passed Proposition 26, an initiative based state constitutional amendment, which provided a new definition of the term “tax” in the California Constitution. Under Proposition 26 a fee or charge imposed by a public agency is a tax unless it meets one of seven exceptions. Capacity and connection fees fall within exception 2 – i.e., it is a

charge imposed for a specific government service. Provided that a connection fee does not charge one fee payor more in order to charge another fee payor less (i.e., a cross-subsidy), and it does not exceed the reasonable costs to the local government of providing the service, then the fee is not a tax within the meaning of Proposition 26. Under Proposition 26, the local government bears the burden of proving, by a preponderance of the evidence, that a levy, charge, or other exaction is not a tax, that the amount is no more than necessary to cover the reasonable costs of the governmental activity, and that the manner in which those costs are allocated to a payor bear a fair or reasonable relationship to the payor's burdens on, or benefits received from, the governmental activity.

### **3.4 Summary**

This section of the report has provided an overview of the legal requirements under California law for the establishment of connection fees. As was noted above, an important legal requirement is that the fees or charges shall not exceed the estimated reasonable cost of providing the service for which the fee or charge is imposed. The next section of the report provides T-TSA's calculation of the charges, which provides the basis for the establishment of a reasonable cost (i.e. connection fee).



## 4.0 Determination of T-TSA's Sewer Connection Fees

### 4.1 Introduction

This section of the report presents the details and key assumptions in the calculation of T-TSA's sewer connection fees. The calculation of T-TSA's connection fees is based upon T-TSA specific accounting and planning information. Specifically, the fees are based upon T-TSA's fixed asset records; current capital improvement plan, existing equivalent dwelling units (EDUs) and projection of future EDUs. As was noted in Section 2 of this report, these planning documents and projections of future EDUs provide the required support for a rationally based public policy to support the imposition of cost-based connection fees.

To the extent that the cost and timing of future capital improvements change, then the connection fees presented in this section of the report should be updated to reflect the changes.

The methodology applied to determine the charges was the "combined" methodology. Under the combined methodology, the charge is based on the value of the system in place which still has capacity available for growth or that portion of the system which was funded by existing customers and any future capital projects which are regulatory or connection fee eligible. The basic formula is as follows:

<b>Value of Existing Plant (RCN*)</b>		<b>Growth Related CIP</b>		<b>Maximum Allowable</b>
<b>Existing and Future EDUs</b>	+	<b>Future EDUs</b>	=	<b>Connection Fee</b>
<b>*RCN = Replacement Cost</b>				

### 4.2 Overview of T-TSA's Sewer System

T-TSA owns, operates and maintains the Truckee River Interceptor (TRI) and Water Reclamation Plant (WRP). The TRI conveys wastewater from Tahoe City to the WRP in Martis Valley, east of the town of Truckee, California. The TRI collects flows from the five member districts that comprise T-TSA. The five member entities involved are the North Tahoe Public Utility District, the Tahoe City Public Utility District, the Alpine Springs County Water District, the Squaw Valley Public Service District, and the Truckee Sanitary District. The Northstar Community Services District is also served by T-TSA facilities through an agreement with the Truckee Sanitary District.

Wastewater treatment occurs at the WRP. The regional facility was designed to treat the sewage of its five member districts that are located in the Tahoe and Truckee River Basins. Through a series of biological, chemical and physical processes, the wastewater is purified to a degree where surface and ground water integrity is protected.



An important requirement for a connection fee study is the connection between the anticipated future growth on the system and the needed facilities required to accommodate that growth. This connection fee analysis is based on the existing system today. Any future expansions beyond the existing system would require a new connection fee analysis based on the capital projects scheduled to meet the needs of future development and the cost and financing of future projects.

### 4.3 Existing Sewer Connection Fee

T-TSA has sewer connection fees in place which are based on type of connection and service units of measure intended to reasonably equate to the sewer capacity impacts. T-TSA's existing residential sewer connection fee is based on living units. Shown below in Table 4-1 is a summary of the existing T-TSA's residential sewer connection fees.

<b>Table 4-1</b> <b>Existing Residential Sewer Connection Fee <sup>[1]</sup></b>		
<b>Type of Connection</b>	<b>Units</b>	<b>Connection Fee</b>
<b>Residential</b>	Living Units	\$5,000

*[1] – Connection fees effective per Ordinance 2-2015.*

The existing non-residential sewer connection fee is based on type of connection and service units. Table 4-2 below shows connection fees for non-residential.

**Table 4-2**  
**Existing Non-Residential Sewer Connection Fee**

Type of Connection	Units	Connection Fee
<b>Non-Residential</b>		
Motel w/o Kitchen or Hotel Unit	# of Units	\$2,500
Motel with Kitchen	# of Units	\$3,300
Campsite w/ Sewer Connection	# of Sites	\$2,500
Campsite w/o Sewer Connection	# of Sites	\$1,875
Restaurants & Bars	# of Seats Inside	\$500
Restaurants & Bars	# of Seats Outside	\$175
Banquet Facilities	# of Seats	\$175
Laundromats	Per # of 10# Machines	\$2,500
	Per # of 20# - 50# Machines	\$5,000
Theatres	# of Seats	\$50
Barber Shops	# of Service Chairs	\$1,500
Grocery	# of Plumbing Fixture Units	\$750
Churches	# of Seats	\$50
Beauty Shops	# of Service Chairs	\$2,500
Other Commercial	# of Plumbing Fixture Units	\$500
Pool and Spas	Capacity less than 1,000 gallons	\$2,000
	Capacity 1,000 to 36,499 gallons	\$2,500
	Capacity 36,500 to 72,999 gallons	\$5,000
	Capacity 73,000 and greater	TBD
Car Washes		TBD

## 4.4 Calculation of T-TSA's Sewer Connection Fee

As was discussed in Section 2, the process of calculating connection fees is based upon a four-step process. These steps were as follows:

- Determination of system planning criteria
- Determination of equivalent dwelling units
- Calculation of the connection fee
- Determination of any connection fee credits

Each of these areas is discussed in more detail below.

### 4.4.1 System Planning Criteria

In the development of connection fees, an equivalent dwelling unit (EDU) is a common planning criterion. Essentially, an equivalent dwelling unit is the “common denominator” for assessing customers and placing their demands into a common unit of measurement. Within this sewer connection fee study, the total costs are divided by the total EDUs to determine the cost per EDU

for sewer capacity. The definition of an EDU carries through both in the calculation of the connection fee, but also in the administration and assessment of that fee.

The Agency currently defines an equivalent dwelling unit (EDU) as 200 gallons per day per EDU which is based on an Agency analysis in 2017 on EDU daily flow rate determination. The Agency's analysis was based on both the recommended household flow rates from Metcalf & Eddy, Inc., 4<sup>th</sup> Edition, Wastewater Engineering Treatment and Reuse, and T-TSA's analysis of the 10-year average of the maximum annual dry weather daily flow. Metcalf & Eddy shows typical flow rates for three and four person household of 66 and 53 gallons per capita per day or 198 and 212 gallons per household per day. As a point of reference, the Agency's service area is mostly residential. The Agency's 10-year average of the maximum daily dry weather flow occupancy values was 189 gallons per day per EDU which was rounded to 200 gallons per EDU. The evaluation period was based on the year that immediately preceded the recent drought or summer of 2002 through the summer of 2011.

#### 4.4.2 Determination of Equivalent Dwelling Units

The planning horizon of this analysis was based on the 2008 build out expansion plant capacity of 9.6 million gallons day (mgd). T-TSA's total number of existing EDUs, based on flow, was determined to be 30,650 EDUs, by dividing the average daily flow at plant in 2018 of 6.13 mgd, divided by 200 gallons per EDU ( $6.13 \text{ mgd} / 200 \text{ gallons per EDU} = 30,650 \text{ EDUs}$ ). A summary of the current sewer EDUs and the buildout EDUs are presented below in Table 4-3. Details of the determination of EDUs are provided in Exhibit 5 of the Technical Appendix.

<b>Table 4-3 T-TSA's Equivalent Dwelling Units</b>		
<b>Description</b>	<b>Capacity (mgd)</b>	<b>Total EDUs</b>
Existing Flow 2018	6.13	30,650
Expansion Flow	<u>3.47</u>	<u>17,350</u>
<b>Permit Total Flow</b>	9.60	<b>48,000</b>

As can be seen in Table 4-3, the total number of sewer service EDUs is 30,650. Projected ultimate build out EDUs are estimated to be 48,000 with 17,350 remaining EDUs for expansion. Given the development of the total sewer EDUs, the focus can shift to the calculation of the connection fee for each plant component. This aspect of the analysis is discussed below.

#### 4.4.3 Calculation of the Sewer Connection Fee

The next step of the analysis is to review T-TSA's existing infrastructure and determine the connection fee. In calculating the connection fee for T-TSA, existing assets, contributed capital, debt service for existing facilities, capital fund reserves, and future capital were considered. System planning criteria typically involves calculating the amount of sewer capacity required by a single equivalent dwelling unit.

As discussed previously, T-TSA's sewer system has available capacity. New development would rely on existing infrastructure and main extensions specific to serve the new development. T-TSA's future capital improvement plan contains repair and replacement projects which are required whether development occurs or not on the system, and regulatory and expansion projects which benefit both existing and future customers. Therefore the "combined" methodology was used in this analysis. The existing assets are divided by the total build out EDUs (existing plus expansion EDUs) and the future assets are divided by the total expansion EDUs. The combined methodology used for T-TSA's analysis is discussed in more detail below.

**EXISTING COMPONENT** – To calculate the value of the existing assets, T-TSA's methodology considered the original cost of each asset. The original cost of the asset was then adjusted to a replacement cost value. T-TSA provided a detailed asset listing, as of June 2018, for the various existing components and their installation date. As was noted in Section 2, there are different methods for valuing existing assets. In this case, a replacement cost new method was used. To accomplish this, the original cost of each asset was escalated to current, August 2018 dollars, based on the Engineering News Record (ENR) Construction Cost Index (CCI) for the 20-City average.

Given the value of the asset, the next step was to determine the portion of the project costs that were deemed eligible to be included in the calculation of the connection fee. The term "connection fee eligible" simply describes the amount of the asset to be included within the calculation of the fee. Within this study, vehicles and general plant assets were not considered capacity related, and were not included in the connection fee calculation. All remaining assets were considered to be 100% eligible. Total existing assets at RCN was \$296.8 million. The \$12.7 million Department of Water Resources grant for the T-TSA wastewater treatment facility, at RCN is \$16.1 million, and was subtracted from the RCN plant for a total net existing plant, on a RCN basis of \$280.6 million. A summary of the existing assets valuation can be seen on Exhibit 1 of the Technical Appendix.

**FUTURE COMPONENT** – To calculate the value of the future assets, T-TSA provided the approved capital plan for the next five years of 2019 through 2023. The projects were reviewed by T-TSA and HDR to determine the portion of the project deemed eligible to be included in the calculation of the sewer connection fee. The term "connection fee eligible" simply describes the amount of the project to be included within the calculation of the sewer connection fee as capacity related. Maintenance, or renewal and replacement projects are not included within the connection fee calculation.

Based upon that analysis, T-TSA'S total future capital projects of \$25.3 million (\$8.4 million in Rehab projects + \$16.9 million in Capital projects = \$27.6 million) showed approximately \$7.3 million of that amount is considered to be growth-related. This low amount of eligible projects is primarily the result of T-TSA's future capital improvement projects not being capacity-related which benefit only future customers, but rather, regulatory-related or system reliability projects which benefit both existing and future customers. A more detailed exhibit of this calculation can be found on Exhibit 4 of the Technical Appendix.

Given the above valuation, it is then adjusted for any outstanding debt or other adjustments. These are discussed in more detail below.

**DEBT SERVICE COMPONENT** – It is not unusual for a utility to finance a portion of their assets via long-term debt. In calculating the connection fee, the value of those debt financed assets are contained in T-TSA’s asset records. At the same time, T-TSA’s rates are designed to collect the debt service expenses (principle and interest payments) over time. The final value of the assets and the resulting connection fee was reduced by the amount of future principal on T-TSA’s outstanding debt. A more detailed discussion of the basis and need for this debt service credit is provided below.

The inclusion of a debt service credit avoids double counting the asset value in the existing asset values along with the principal portion of the debt service. Said another way, the existing assets, before the debt service credit, contains the value of the debt financed asset. If a customer pays a connection fee absent a debt service credit, the customer will have paid twice for the value of an asset; once within the connection fee and then again within their rates which includes the principle amount on outstanding debt service. Given this issue, a debt service credit is included within the calculation of T-TSA’s connection fee based upon the present value of the outstanding principle associated with T-TSA’s debt.

T-TSA has one outstanding debt issues which is connection fee related. The SRF loan which, as of June 2017, amounts to approximately \$28.2 million in outstanding principal. This issue is currently being paid 26.8% from rates and 74.2% from sewer connection fee reserves. Therefore \$7.5 million was credited in the connection fee calculation for the amount that would be paid from rates as a customer. Exhibit 2 of the Technical Appendix provides the detail of T-TSA’s outstanding debt issue.

**OTHER COMPONENTS** - In addition to the combined component and debt service component, the capital fund reserves were determined to be connection fee related. The inclusion of capital fund reserves can be viewed from two perspectives. First, existing customers created this reserve for the construction of assets and a new customer should pay a proportional share of the value of these reserves. Alternatively, these reserves represent the value of total assets and plant to be constructed in the future. The total connection fee eligible capital fund reserves is \$5.2 million. Further detail can be seen on Exhibit 3 of the Technical Appendix.

## 4.5 Allowable Sewer Connection Fees

Based on the sum of the component costs calculated above, the allowable sewer connection fee can be determined. “Allowable” refers to the concept that the calculated connection fee shown on Table 4-4 are T-TSA’s cost-based connection fees. T-TSA, as a matter of policy, may charge any amount up to the allowable connection fee, but not over that amount. Charging an amount greater than the allowable connection fee would not meet the nexus test of a cost-based connection fee. Details are provided in Exhibit 6 of the Technical Appendix.

**Table 4-4**  
**Summary of Maximum Allowable Sewer Connection Fee**

	<b>Total "Allowable" Connection Fee</b>
Total Eligible Plant (Replacement Cost New)	\$296,879,221
Less: Contributed Capital	<u>(16,196,816)</u>
<b>Total Existing Plant Cost Basis</b>	<b>\$280,682,405</b>
Less: Outstanding Principal on Debt	<u>(\$7,577,966)</u>
Plus: Capital Fund Reserves	<u>\$5,271,379</u>
<b>Total Net Existing Plant</b>	<b>\$278,375,818</b>
Number of Existing and Future Dwelling Units	48,000
<b>Total Existing Sewer Connection Fee per EDU</b>	<b>\$5,799</b>
Total Future Plant	\$7,334,275
Number of Future Dwelling Units	17,350
<b>Total Future Sewer Connection Fee per EDU</b>	<b>\$423</b>
<b>Maximum Allowable Sewer Connection Fee</b>	<b>\$6,222</b>
<b>Existing Sewer Connection Fee</b>	<b>\$5,000</b>

Table 4-4 shows the maximum allowable sewer connection fee of \$6,222 per EDU. This is more than the current sewer connection fee of \$5,000. After reviewing the calculated fee, the T-TSA Board decided to maintain the current \$5,000 connection fee in place. This decision was based on two primary reasons; first, T-TSA is going to be embarking on the development of a master plan, and second, the unique capacity parameters of the plant on a yearly versus the limited capacity in the summer.

Table 4-5 provides a better understanding of the relationship of the buy-in or replacement-related portion of the fee to the expansion related portion of the fee. Approximately ninety-three percent of the calculated allowable fee is related to the existing facilities.

**Table 4-5**  
**Maximum Allowable Sewer Connection Fee Summarized by  
Existing and Expansion Components (\$/EDU)**

	<b>Total Maximum Allowable Sewer Connection Fee</b>	<b>% of Total</b>
Existing Plant Related	\$5,799	93.2%
Expansion Plant Related	<u>423</u>	<u>6.8%</u>
<b>Maximum Allowable Connection Fee (\$/EDU)</b>	<b>\$6,222</b>	<b>100.0%</b>

The fee also varies by customer type, but in all cases it is intended to reimburse the existing customers for their portion of the system use that has been funded through rates over time on a per EDU basis. The T-TSA's current ordinance provides a connection fee according to type of customer based on generally accepted flow assumptions by customer type. T-TSA has expressed the need for an alternative approach to assessment of the residential sewer connection fee based on assessment of units of capacity for residential properties

## **4.6 Implementation of the Sewer Connection Fees**

T-TSA's existing residential sewer connection is based on one living unit. Administratively, that is the value of one unit of capacity. In implementing and administering connection fees, for residential, this does not meet the T-TSA's expanded capacity required for the larger residential size homes in the area and keep the proportionality for smaller homes. T-TSA's existing residential connection fee was reviewed and a fee was developed to be based on a scalable methodology as discussed in the Mountain Housing Council of Tahoe Truckee, "Lowering Barriers for Private Investment: How Fee Incentives Can Help Achievable Local Housing Projects" report dated October 2018. The Mountain Housing Council of Tahoe-Truckee, based on the affordable housing challenge in the Truckee/North Tahoe area, established a recommendation that city, county, and local agency development fees and connection charges be based on a scalable methodology, such as square footage, per fixture, per bedroom, to encourage the building of smaller, more affordable units.

Based on the review of an average residential customer, the implementation of the connection fee would be a minimum fee, plus a per square foot charge. The accessory dwelling units, connection fees are also based on minimum fee, plus a per square foot charge basis with an exemption for units that are less than 500 square feet. For an average residential unit this would be \$5,000 per unit ( $\$1,500 + (\$1.75 \times 2,000 \text{ sq. ft.}) = \$5,000$ ). The setting of a minimum fee attempts to represent the capacity cost differences associated with both existing and future infrastructure needed to serve future development and offers the greatest protection to the sewer ratepayer. Table 4-6 provides a summary of the implementation of the current fee for residential and accessory dwelling units.

<b>Table 4-6</b> <b>Calculated Residential Maximum Allowable Sewer Connection Fee</b>		
<b>Type of Connection</b>	<b>Units</b>	<b>Connection Fee</b>
<b>All Residential</b>		
Minimum	Per living unit	\$1,500
Plus: Square footage	Per square footage	\$1.75
<b>Additions (Not an ADU)</b>		
Greater than 500 square feet	Per square footage	\$1.75
500 square feet or less		Exempt
<b>Accessory Dwelling Unit</b>		
Minimum	Per living unit	\$1,500
Plus: Square footage	Per square footage	\$1.75
500 square feet or less		Exempt

The Non-residential connection fee is based on type of connection and an equivalency factor of the Residential unit. For this analysis, certain service connection types were either combined, more clearly defined, or eliminated. For example, Barber shops were combined with the Beauty Shop category. Pools and Spas were separated into separate Pool, and Spa category. Dump Stations, Police and Fire Stations, Private Schools, and Boarding Schools are new categories. It is important to note, Table 4-7 shows the connection fee based on number of units measure depending on the type of service connection. These service unit ratio were also reviewed and updated to California plumbing code ratio where necessary. The Industrial connection fee will be based on the maximum calculated EDU values for Flow. This was based on three years of raw influent data to determine the constituent averages and standard deviations for each wastewater discharge constitution. The maximum of all of the calculated EDU values will be rounded to the nearest ½ EDU. Table 4-7 below shows the connection fee for Non-residential.



**Table 4-7**  
**Calculated Non-Residential Maximum Allowable Sewer Connection Fee**

Type of Connection	Units	Connection Fee
Motel w/o Kitchen or Hotel Unit	# of Units	\$2,500
Motel with Kitchen	# of Units	\$3,300
Campsite w/ Sewer Connection	# of Sites	\$2,500
Campsite w/o Sewer Connection	# of Sites	\$1,875
Dump Stations	# of Stations	\$5,000
Restaurants & Bars	# of Seats Inside	\$500
Restaurants & Bars	# of Seats Outside	\$175
Banquet Facilities	# of Seats	\$175
Laundromats	# of Machines	\$5,000
Grocery	# of Plumbing Fixture Unit Count	\$750
Assembly Hall	# of Seats	\$50
Beauty Shops & Barber Shops	# of Service Chairs	\$2,500
Other Commercial	# of Plumbing Fixture Unit Count	\$500
Police and Fire Stations	# of Plumbing Fixture Unit Count	\$500
Pools	Minimum up to 72,999 gallons	\$5,000
	> than 72,999 gallons, per 1,000 gallons	\$68
Spas	Minimum up to 1,000 gallons	\$2,000
	> than 1,000 gallons, per 1,000 gallons	\$27
Car Washes		
Automatic	# of Bays	\$7,500
Automatic - Recycled	# of Bays	\$6,000
Self-Serve	# of Bays	\$5,000
Self-Serve –Recycled	# of Bays	\$4,000
Private School	# of Plumbing Fixture Unit Count	\$250
Boarding Schools	# of Plumbing Fixture Unit Count	\$500
Industrial/SIU	Maximum of EDU values per formula <sup>[1]</sup>	\$5,000/EDU

[1] Industrial formula see below:

Flow:	<u>Maximum Daily Flow (gallons per day)</u>	=	EDU <sub>Flow</sub>	
	200 gallons per day			
COD:	<u>Composite Sample COD Concentration (milligrams per liter)</u>	X	EDU <sub>Flow</sub>	= EDU <sub>COD</sub>
	805 milligrams per liter			
TSS:	<u>Composite Sample TSS Concentration (milligrams per liter)</u>	X	EDU <sub>Flow</sub>	= EDU <sub>TSS</sub>
	362 milligrams per liter			
TDS:	<u>Composite Sample TDS Concentration (milligrams per liter)</u>	X	EDU <sub>Flow</sub>	= EDU <sub>TDS</sub>
	428 milligrams per liter			
TN:	<u>Composite Sample TN Concentration (milligrams per liter as N)</u>	X	EDU <sub>Flow</sub>	= EDU <sub>TN</sub>
	78 milligrams per liter			
TP:	<u>Composite Sample TP Concentration (milligrams per liter as P)</u>	X	EDU <sub>Flow</sub>	= EDU <sub>TP</sub>
	8.4 milligrams per liter			

The methodology used to calculate the connection fee takes into account the cost of money and inflation. HDR recommends that these charges be adjusted each year by an escalation factor to

reflect the cost of inflation. The most frequently used source to escalate a connection fee is the Engineering News Record (ENR) Construction Cost Index which tracks changes in construction costs for municipal utility projects. This method of escalating the connection fee should be used for no more than a four to five-year period. After this time period, HDR recommends that the fees be updated based on the actual cost of infrastructure and any new planned facilities that would be contained in an updated master plan, capital improvement plan or rate study.

## 4.7 Key Assumptions

In the development of T-TSA's connection fees a number of key assumptions were utilized. These are as follows:

- T-TSA's connection fees were developed on the basis of accounting, financial and planning documents provided by T-TSA.
- The methodology used is the "combined" methodology. The existing connection fee and future connection fee are added together for a net allowable connection fee.
- T-TSA's June 2018 asset records were used to determine the existing infrastructure assets.
- The existing assets were adjusted to replacement cost based on ENR cost index for August 2018.
- The Department of Water Resources grant for the BNR to the T-TSA water treatment facility was deducted from the value of the existing assets
- The outstanding principal portion of the outstanding debt was deducted (i.e. a debt service credit) from the cost of the existing assets to avoid double counting.
- T-TSA provided the capital improvement plan (CIP) for future sewer system improvements, and adjusted projects based on current information.
- T-TSA determined the portion of future improvements that were growth related.
- T-TSA's recent EDU analysis in 2017 was used as the basis for establishing the existing equivalent dwelling units (EDUs) of 200 gallons per EDU.

## 4.8 Board Presentations

The Board was presented with information as the connection fees were reviewed and updated. The following is a summary of those presentations, Board recommendation and conclusions.

**10/10/18** *Presentation of Sewer Connection Fees the following was provided to the Board:*

- Connection Fees
  - Financial Impacts
  - Definition
  - Calculation
- Existing T-TSA Sewer Connection Fees
- Overview of the Sewer Connection Fee Calculation
  - Review and update the charge to reflect existing conditions and value of existing and future system capacity

**Recommendation:** The Board recommended replacement cost based on Resolution 11-2008, which adopted the asset replacement approach for the calculation of connection fees.

**12/12/18** Presentation of the Sewer Connection Fees the following was provided to the Board:

- Overview of Connection Fees
  - Financial Impacts
  - Definition
- Sewer Connection Fee Calculation
  - Overview
  - Maximum Allowable
  - Residential Options
  - Nonresidential
- Neighboring Connection Fee Survey

**Recommendation:** The Board recommended maintaining the existing sewer connection fee of \$5,000, and review of the implementation of the connection fees for a set minimum for Residential, adding an ADU category, and review of non-residential units and categories

**02/13/19** Presentation of the Sewer Connection Fees the following was provided to the Board:

- Sewer Connection fee Study
  - Overview
  - Maximum Allowable
    - Maintain existing fee
  - Update Implementation of Fee
    - Residential Option (Set Minimum)
    - Non-residential (New category)
    - Industrial/Significant Industrial User (SIU)

**Recommendation:** The Board recommended a residential minimum charge of \$1,500, plus a per square foot charge of \$1.75 per square foot. Additions (not an ADU) greater than 500 square feet a per square foot charge of \$1.75. An accessory dwelling unit (ADU) minimum charge of \$1,500, plus a per square foot charge of \$1.75 per square foot, if not exempt. Additions and accessory dwelling units 500 square feet or less shall be exempt from a connection fee. For non-residential changes were recommended for certain service connection types to either be combined, more clearly defined, or eliminated.

## 4.9 Consultant Recommendations

Based on our review and analysis of T-TSA's sewer connection fees, HDR makes the following recommendations:

- T-TSA should maintain the existing connection fee level and revise and update the implementation of the connection fees for new connections to the sewer system as shown in this report.
- T-TSA should annually adjust the connection fees based on changes in the Engineering News Record Construction Cost Index or other comparable index.

- T-TSA should update the actual calculations for the connection fee at such time when a new capital improvement plan, public facilities plan, master plan or a comparable plan is approved or updated by T-TSA or within five years.

## **4.10 Summary**

The sewer connection fee developed and presented in this section of the report is based on the engineering design criteria of T-TSA's sewer system, the value of the existing assets, current debt service, the adopted capital improvement plan, and generally accepted ratemaking principles. The existing fee does not exceed the maximum allowable calculated sewer connection fees and are equitable and cost-based charges for new customers connecting to T-TSA's sewer system.



## Technical Appendix



**Tahoe-Truckee Sanitation Agency**  
**Exhibit 1**  
**Development of the Sewer Connection Fee Per EDU**

<b>Plant Description</b>	<b>Original Cost (1)</b>	<b>Replacement Cost (2)(3) RCN</b>
<b>Existing Plant</b>		
Sewer Asset Listing	\$146,909,969	\$296,879,221
Total	\$146,909,969	\$296,879,221
Less: Contributed Capital (4)	\$0	(\$16,196,816)
<b>Total Existing Plant</b>	<b>\$146,909,969</b>	<b>\$280,682,405</b>
<b>Less: Outstanding Debt Principal (5)</b>	<b>(\$7,577,966)</b>	<b>(\$7,577,966)</b>
<b>Plus: Reserves (6)</b>	<b>\$5,271,379</b>	<b>\$5,271,379</b>
<b>Total Net Existing Plant</b>	<b>\$144,603,383</b>	<b>\$278,375,818</b>
Total Existing and Future Equivalent Dwelling Units(7)		48,000
<b>Existing Sewer Connection Fee per EDU (8)</b>		<b>\$5,799</b>
<b>Future Plant (9)</b>		
Upgrade and Rehab Projects	\$8,365,000	\$460,275
Capital Outlay Projects	16,950,000	6,874,000
<b>Total Future Plant</b>	<b>\$25,315,000</b>	<b>\$7,334,275</b>
Future Equivalent Dwelling Units (10)		17,350
<b>Future Sewer Connection Fee per EDU</b>		<b>\$423</b>
<b>Total Sewer Connection Fee per EDU</b>		<b>\$6,222</b>

**NOTES:**

- (1) Asset list based on June 30, 2018.
- (2) Net of assets that are not connection fee eligible. Vehicles and General Plant were not included.
- (3) Based on specific "in service" date of asset and Aug, 2018 Engineering News Record, 20 City construction cost index.
- (4) Department of Water Resources grant for T-TSA wastewater treatment facility 11-30-01.
- (5) Principal balance as of June 30, 2017. See Exhibit 2.
- (6) Cash reserves as of March 31 2018 which are connection fee eligible. See Exhibit 3.
- (7) Existing and projected equivalent dwelling units. See Exhibit 5.
- (8) Based on "buy in" and "incremental" methodology established in AWWA M1, Sixth Edition, Table VI.2-4, page 269 & 270.
- (9) Based on CIP plan. See Exhibit 4.
- (10) Based on projected equivalent dwelling units. See Exhibit 5.

Tahoe-Truckee Sanitation Agency

Exhibit 2

Development of Outstanding Debt Principal

Debt Name	State Revolving Fund Principal (1)	Total Principal
<b>I. Debt Status:</b>		
Original Debt		
# of Years/Rate		
Connection Fee Eligible	0.00%	
<b>II. Outstanding Principal Payments:</b>		
FY 2018	\$2,512,321	<b>\$2,512,321</b>
FY 2019	2,577,641	<b>2,577,641</b>
FY 2020	2,644,660	<b>2,644,660</b>
FY 2021	2,713,421	<b>2,713,421</b>
FY 2022	2,783,970	<b>2,783,970</b>
FY 2023	2,856,353	<b>2,856,353</b>
FY 2024	2,930,618	<b>2,930,618</b>
FY 2025	3,006,814	<b>3,006,814</b>
FY 2026	3,084,992	<b>3,084,992</b>
FY 2027	3,165,201	<b>3,165,201</b>
<b>Total</b>	<b>\$28,275,991</b>	<b>\$28,275,991</b>
	<b>% of Rate Funded</b>	<b>26.8%</b>
	<b>\$ Funded from Rates</b>	<b>\$7,577,966</b>

**NOTES:**

(1) Based on June 2017 audited financials.

**Tahoe-Truckee Sanitation Agency**  
**Exhibit 3**  
**Development of Cash Reserves**

<b>Reserve Fund Balance (1)</b>			
	<b>March 31, 2018</b>	<b>% Eligible</b>	<b>\$ Eligible</b>
Wastewater Cash and Equivalents	\$5,271,379	100%	\$5,271,379
Upgrade & Rehab	25,562,134	0%	0
Wastewater Cap Reserve	19,210,916	0%	0
SRF Wastewater Cap Reserve	<u>2,940,888</u>	0%	<u>0</u>
	-		
<b>Total</b>	<b>\$52,985,317</b>		<b>\$5,271,379</b>

**NOTES:**

(1) Based on March 31, 2018 balances.



Tahoe-Truckee Sanitation Agency  
Exhibit 4  
Development of Future Capital Improvements

Page 1 of 1

Proj. #	Project Listing	2018/2019	2019/2020	2020/2021	2021/2022	2022/2023	Total	% Eligible (3)	\$ Growth Related
	Clarifier Coating Improvement	\$375,000	\$300,000				\$675,000	36.1%	\$243,675
	Lab Equipment Replacement	50,000	35,000	25,000	25,000		135,000	0.0%	0
	Lab Improvement			75,000			75,000	0.0%	0
	Vehicle Replacement		30,000	30,000	30,000	30,000	120,000	0.0%	0
	Admin. Office Improvement	125,000	250,000				375,000	0.0%	0
	WWTP Pilot Study Rehabilitation			75,000			75,000	0.0%	0
	Communications Network Replacement					200,000	200,000	0.0%	0
	Accounting Software Upgrade	75,000					75,000	0.0%	0
	Bldg. #27 Switchgear Improvement	575,000					575,000	0.0%	0
	EPDM Roof Replacement	150,000	100,000	100,000			350,000	0.0%	0
	Translucent Panel Rehabilitation	50,000		50,000		50,000	150,000	0.0%	0
	RAS AFD Upgrades	30,000					30,000	0.0%	0
	TRI Improvements (1)	1,375,000			2,250,000		3,625,000	0.0%	0
	Facilities Security System		25,000				25,000	0.0%	0
	Lime System Improvements				150,000		150,000	0.0%	0
	Portable PD Pump	75,000					75,000	0.0%	0
	Wasting Pumps Upgrade		350,000				350,000	36.1%	126,350
	Clino & AWT Improvements		125,000				125,000	0.0%	0
	Ballast Pond Repair		150,000				150,000	36.1%	54,150
	Centrifuge Rebuild	50,000	50,000				100,000	36.1%	36,100
	Robicon Drive Upgrade	100,000					100,000	0.0%	0
	Admin. MCC Panel Improvements	50,000					50,000	0.0%	0
	Facility Asphalt Sealing			100,000			100,000	0.0%	0
	Joerger Drive Reconstruction	100,000					100,000	0.0%	0
	Telephone Upgrade			30,000			30,000	0.0%	0
	2 Water System Improvement					500,000	500,000	0.0%	0
	2 Water Vault Improvement			50,000			50,000	0.0%	0
	<b>Total Upgrade and Rehab Project Description (1)</b>	<b>\$3,180,000</b>	<b>\$1,415,000</b>	<b>\$535,000</b>	<b>\$2,455,000</b>	<b>\$780,000</b>	<b>\$8,365,000</b>		<b>\$460,275</b>
	<b>Capital Outlay Project Description (2)</b>								
	Equipment/Vehicle Warehouse	\$0	\$0	\$0	\$0	\$2,250,000	\$2,250,000	0.0%	\$0
	Digester & Plant Heating Improvements	0	3,500,000	0	0	0	3,500,000	36.1%	1,263,500
	Barscreens, Washers, Compactors	1,500,000	0	0	0	0	1,500,000	36.1%	541,500
	TRI Improvements (1)	1,375,000	0	0	2,250,000	0	3,625,000	100.0%	3,625,000
	Operation and Maintenance Carts	25,000	25,000	25,000	25,000	25,000	125,000	0.0%	0
	BNR Improvements	0		1,750,000	0	0	1,750,000	0.0%	0
	Emergency Bypass Pump	0	200,000	0	0	0	200,000	0.0%	0
	Flow Equalization Basin	0	0	0		4,000,000	4,000,000	36.1%	1,444,000
	<b>Total Capital Outlay Project Description (2)</b>	<b>\$2,900,000</b>	<b>\$3,725,000</b>	<b>\$1,775,000</b>	<b>\$2,275,000</b>	<b>\$6,275,000</b>	<b>\$16,950,000</b>		<b>\$6,874,000</b>
	<b>Total Capital Projects</b>	<b>\$6,080,000</b>	<b>\$5,140,000</b>	<b>\$2,310,000</b>	<b>\$4,730,000</b>	<b>\$7,055,000</b>	<b>\$25,315,000</b>		<b>\$7,334,275</b>
	Less Developer Funding	0	0	0	0	0	0	100.0%	0
	<b>Net Capital Projects</b>	<b>\$6,080,000</b>	<b>\$5,140,000</b>	<b>\$2,310,000</b>	<b>\$4,730,000</b>	<b>\$7,055,000</b>	<b>\$25,315,000</b>		<b>\$7,334,275</b>

NOTES:

- (1) The costs are based on T-TSA CIP plan, 2017-2018 Upgrade Rehab Fund (Final - Board Approved 06-14-17).
- (2) The costs are based on T-TSA CIP plan, 2017-2018 Wastewater Capital Reserve Fund (Final - Board Approved 06-14-17).
- (3) Connection fee eligible based on T-TSA input. Maintenance projects are not eligible.

Tahoe-Truckee Sanitation Agency

Exhibit 5

Development of Equivalent Dwelling Units For Year Ended June 30, 2015

Average Daily Flow,  
gallons per EDU (1) 200.0

	Yearly Max Flow	Max Flow Jun 21 to Sept 21
<b>WDR Permit (2)</b>		
<b>Existing Flow (MGD)</b>	13.00	7.40
Existing EDUs	65,000	37,000
<b>Expansion Flow (MGD)</b>	2.40	2.20
Expansion EDUs	12,000	11,000
<b>Total Flow (MGD)</b>	15.40	9.60
<b>Buildout EDU's</b>	77,000	48,000

Year	Total Gallons (MGD)	Total EDUs (3)	Additional EDUs	% Growth
2018	6.13	30,650		
Permit	9.60	48,000	17,350	
Total Change	3.47		17,350	36.1%

**NOTES:**

(1) From T-TSA definition of one equivalent Dwelling Unit as 200 gallons per unit. This is based on 189 gallons per EDU rounded up to 200.

(2) Based on Waste Discharge Requirements as of May 2002.

(3) EDUs calculated by maximum 87-day average flow at plant divided by gallons per EDU.

Tahoe-Truckee Sanitation Agency  
Exhibit 6  
Calculated Sewer Connection Fee

Item	Calculated Connection Fee
Existing Plant Sewer Connection Fee per EDU	\$5,799
Future Plant Sewer Connection Fee per EDU	423
Total Sewer Connection Fee per EDU	\$6,222
Existing Sewer Connection Fee	\$5,000

Type of Connection	Units	Equivalent EDU Ratio	Connection Fee
<b>Residential</b>			
<b>Single-Family, Multi-Family, Mobile Home</b>			
Minimum	Per living unit		\$1,500
Plus: Square footage	Per square footage		\$1.75
<b>Additions (Not an ADU)</b>			
Greater than 500 square feet	Per square footage		\$1.75
500 square feet or less			Exempt
<b>Accessory Dwelling Unit</b>			
Minimum	Per living unit		\$1,500
Plus: Square footage	Per square footage		\$1.75
500 square feet or less			Exempt
<b>Non-Residential</b>			
Motel without Kitchen or Hotel Unit	# of Units	0.50	\$2,500
Motel with Kitchen	# of Units	0.66	\$3,300
Campsite with Sewer Connection	# of Sites	0.50	\$2,500
Campsite without Sewer Connection	# of Sites	0.38	\$1,875
Dump Stations	# of Stations	1.00	\$5,000
Restaurants & Bars	# of Seats Inside	0.10	\$500
Restaurants & Bars	# of Seats Outside	0.04	\$175
Banquet Facilities	# of Seats	0.04	\$175
Laundromats	# of Machines	1.00	\$5,000
Grocery	# of Plumbing Fixture Unit Count	0.15	\$750
Assembly Hall	# of Seats	0.01	\$50
Beauty Shops & Barber Shops	# of Service Chairs	0.50	\$2,500
Other Commercial	# of Plumbing Fixture Unit Count	0.10	\$500
Police and Fire Stations	# of Plumbing Fixture Unit Count	0.10	\$500
Pools	Minimum (up to 72,999 gallons)	1.00	\$5,000
	> than 72,999 gallons, per 1,000 gallons		\$68
Spas	Minimum (up to 1,000 gallons)	0.40	\$2,000
	> than 1,000 gallons, per 1,000 gallons		\$27
<b>Car Washes</b>			
Automatic	# of Bays	1.50	\$7,500
Automatic - Recycled	# of Bays	1.20	\$6,000
Self-Serve	# of Bays	1.00	\$5,000
Self-Serve - Recycled	# of Bays	0.80	\$4,000
Private School	# of Plumbing Fixture Unit Count	0.05	\$250
Boarding Schools	# of Plumbing Fixture Unit Count	0.10	\$500
<b>Industrial/SIU</b>	The maximum of EDU values		\$5,000/EDU

Asset #	Contributed	Description	Date Acquired	Original Cost	Accumulated Depreciation	Net Book Value	ENR-CCI 8/1/2018 11,124 ENR Factor	Repl. Cost	% Depr.	% Eligible	Replacement Cost
Land		Land Shift from Collection & Treatment	6/30/1988	\$2,174,726	\$0	\$2,174,726	1.00	\$2,174,726	0.0%	100%	\$2,174,726
Collection		Collection System	1/1/1979	7,114,905.40	5,478,477.16	1,636,428	3.70	26,356,874	77.0%	100%	26,356,874
Treatment		Treatment Facility Built	1/1/1979	26,029,700.41	20,042,869.05	5,986,831	3.70	96,425,955	77.0%	100%	96,425,955
Collection		Addition	1/1/1980	1,131.28	848.46	283	3.44	3,888	75.0%	100%	3,888
Treatment		Addition	1/1/1980	42,348.38	31,761.29	10,587	3.44	145,537	75.0%	100%	145,537
Collection		Addition	1/1/1981	7,600.00	5,548.00	2,052	3.15	23,917	73.0%	100%	23,917
Treatment		Addition	1/1/1981	1,957.00	1,428.61	528	3.15	6,159	73.0%	100%	6,159
Collection		Addition	1/1/1982	34,854.00	24,746.34	10,108	2.91	101,368	71.0%	100%	101,368
Treatment		Addition	1/1/1982	615,207.75	436,797.50	178,410	2.91	1,789,248	71.0%	100%	1,789,248
Collection		Addition	1/1/1983	5,082.00	3,506.58	1,575	2.74	13,904	69.0%	100%	13,904
Treatment		Addition	1/1/1984	10,887,244.16	7,294,453.59	3,592,791	2.68	29,212,503	67.0%	100%	29,212,503
Treatment		Treatment, Transformers, 25 Flowmeters	1/1/1985	149,802.37	97,371.54	52,431	2.65	397,253	65.0%	100%	397,253
Treatment		Treatment, Addition	1/1/1986	208,223.68	131,180.92	77,043	2.59	539,321	63.0%	100%	539,321
Treatment		Treatment	1/1/1987	76,907.80	46,913.76	29,994	2.52	194,181	61.0%	100%	194,181
Treatment		Capitalize CIP	1/1/1987	88,015.35	53,689.36	34,326	2.52	222,226	61.0%	100%	222,226
Treatment		Addition	1/1/1988	13,587.77	8,016.78	5,571	2.46	33,449	59.0%	100%	33,449
Treatment		Roofing,Elect.Building,Effl. Pumps,Engineering	1/1/1989	1,003,921.58	572,235.30	431,686	2.41	2,419,960	57.0%	100%	2,419,960
Collection		Addition	1/1/1990	75,640.56	41,602.31	34,038	2.35	177,824	55.0%	100%	177,824
Treatment		Asphalt, Eval. Building, Acid Storg.	1/1/1990	297,114.63	163,413.05	133,702	2.35	698,489	55.0%	100%	698,489
Treatment		Disposal Facility - Green Acres	1/1/1990	25,000.00	13,800.00	11,200	2.35	58,773	55.2%	100%	58,773
Treatment		Addition, Roof Rehab	1/1/1991	281,114.62	148,990.75	132,124	2.30	646,796	53.0%	100%	646,796
Treatment		Disposal Facility - Phos. Movement Eval.	1/1/1991	25,620.00	13,578.60	12,041	2.30	58,947	53.0%	100%	58,947
Collection		Addition	1/1/1992	2,579,531.72	1,315,561.18	1,263,971	2.23	5,756,464	51.0%	100%	5,756,464
Treatment		Plant Expansion Construction	1/1/1992	2,238,913.72	1,141,846.00	1,097,068	2.23	4,996,344	51.0%	100%	4,996,344
Treatment		Disposal Facility - Gen. & Phos Eval	1/1/1992	6,899.00	3,518.49	3,381	2.23	15,396	51.0%	100%	15,396
Treatment		TRI Imprv., Asphalt, Addition	1/1/1993	89,190.50	43,703.35	45,487	2.14	190,441	49.0%	100%	190,441
Collection		Addition	1/1/1994	210,745.88	99,050.56	111,695	2.06	433,513	47.0%	100%	433,513
Treatment		Addition	1/1/1994	297,607.44	139,875.50	157,732	2.06	612,191	47.0%	100%	612,191
Treatment		Disposal Facility - Redistribute CIP	1/1/1994	50,431.00	23,702.57	26,728	2.06	103,739	47.0%	100%	103,739
Collection		Addition	1/1/1995	320.95	144.43	177	2.03	653	45.0%	100%	653
Treatment		Border Modifications	1/1/1995	115,540.19	51,993.09	63,547	2.03	234,934	45.0%	100%	234,934
Treatment		Addition	1/1/1996	1,565,617.33	673,215.45	892,402	1.98	3,099,056	43.0%	100%	3,099,056
Treatment		Addition	1/1/1997	1,882,777.38	771,938.73	1,110,839	1.91	3,595,080	41.0%	100%	3,595,080
Treatment		Addition question 397,625.	1/1/1998	1,260,038.81	491,415.14	768,624	1.88	2,367,785	39.0%	100%	2,367,785
Treatment		Clino Reblid., Concrete, Addition	1/1/2000	604,789.00	211,676.15	393,113	1.79	1,081,493	35.0%	100%	1,081,493
Treatment		Addition	1/1/2001	646,097.24	213,212.09	432,885	1.76	1,134,749	33.0%	100%	1,134,749
Treatment		Concrete/Basins, Digester Gas Mix, Addition	1/1/2002	465,416.66	144,279.16	321,137	1.70	791,912	31.0%	100%	791,912
Collection		Addition	1/1/2003	3,240.00	939.60	2,300	1.66	5,384	29.0%	100%	5,384
Treatment		SCADA, PLC, Addition	1/1/2003	66,343.00	19,239.47	47,104	1.66	110,253	29.0%	100%	110,253
Collection		Vactor Pad Construction	1/1/2004	47,814.20	12,909.83	34,904	1.56	74,759	27.0%	100%	74,759
Treatment		TRI Flowmeter, SCADA, PLC, Addition	1/1/2004	157,507.28	42,526.97	114,980	1.56	246,267	27.0%	100%	246,267
Plant Fencing		Plant Fencing	1/1/2005	180,679.93	112,924.96	67,755	1.49	269,941	62.5%	100%	269,941
Treatment		PLC, TRI, Addition	1/1/2005	71,672.74	17,918.19	53,755	1.49	107,081	25.0%	100%	107,081
Treatment		Addition	1/1/2006	24,602.26	5,658.52	18,944	1.44	35,309	23.0%	100%	35,309
Treatment	Grant	10 MGD Expansion Construction Capitalized	1/1/2007	60,356,081.29	12,674,777.07	47,681,304	1.40	84,273,824	21.0%	100%	84,273,824
Treatment		10 MGD Expansion Construction Capitalized	1/1/2007	11,600,000.00	2,436,000.00	9,164,000	1.40	16,196,816	21.0%	100%	16,196,816
Plant Fencing		Gate/Security	1/1/2008	7,775.39	3,693.31	4,082	1.34	10,407	47.5%	100%	10,407
Treatment		Capitalize Imprvmnts to Electrical, MPPS, CL2	1/1/2008	589,412.31	111,988.34	477,424	1.34	788,933	19.0%	100%	788,933
Treatment		10 MGD Expansion Construction Capitalized	1/1/2008	1,312,946.26	249,459.79	1,063,486	1.34	1,757,388	19.0%	100%	1,757,388
Treatment		10 MGD Expansion Construction Capitalized	1/1/2009	162,317.02	27,593.89	134,723	1.30	210,580	17.0%	100%	210,580
Collection		TRI Improvements	1/1/2010	76,221.67	11,433.25	64,788	1.26	96,329	15.0%	100%	96,329
Plant Fencing		Gate Electronics Improvements	1/1/2010	4,920.84	1,845.32	3,076	1.26	6,219	37.5%	100%	6,219

Asset #	Contributed	Description	Date Acquired	Original Cost	Accumulated Depreciation	Net Book Value	ENR-CCI 8/1/2018 11,124 ENR Factor	Repl. Cost	% Depr.	% Eligible	Replacement Cost
Treatment		Addition: Scada,Filtration Imp.,BNR Pilot sys.	1/1/2010	383,579.22	57,536.88	326,042	1.26	484,768	15.0%	100%	484,768
Collection		TRI Improvements TV Inspection	1/1/2011	19,559.28	2,542.71	17,017	1.23	23,979	13.0%	100%	23,979
Treatment		Lime sys, Chem pumpstn,Blower, SCADA, PLC mods	1/1/2011	64,681.36	8,408.58	56,273	1.23	79,297	13.0%	100%	79,297
Collection		Bypass pump system, insulate, tv inspect	1/1/2012	331,685.88	36,485.45	295,200	1.20	396,409	11.0%	100%	396,409
Plant Fencing		Plant Fencing	1/1/2012	4,979.95	1,369.49	3,610	1.20	5,952	27.5%	100%	5,952
Treatment		Filter rehab, Chem pumps	1/1/2012	258,963.87	28,486.03	230,478	1.20	309,497	11.0%	100%	309,497
Collection		TRI TV, Emerg. Bypass sys, piping insulation	1/1/2013	89,482.77	8,053.45	81,429	1.17	104,273	9.0%	100%	104,273
Plant Fencing		Camera/Security Equip	1/1/2013	37,262.77	8,384.12	28,879	1.17	43,422	22.5%	100%	43,422
Treatment		Chem pumpstn, PLC upgr, Thickner rm/BW tank	1/1/2013	391,368.71	35,223.18	356,146	1.17	456,055	9.0%	100%	456,055
Collection		TRI Scan, TRI rehab	1/1/2014	191,382.97	13,396.81	177,986	1.13	217,104	7.0%	100%	217,104
Plant Fencing		Camera/Security Equip	1/1/2014	781.52	136.77	645	1.13	887	17.5%	100%	887
Treatment		Chem pump, SCADA Imp, PLC upg, Basin wrk, Dig Imp,	1/1/2014	56,085.16	3,925.96	52,159	1.13	63,623	7.0%	100%	63,623
Collection		TRI Scan, TRI rehab, pipe locator, insulation, TRI imp	1/1/2015	2,724,373.56	136,218.68	2,588,155	1.11	3,013,778	5.0%	100%	3,013,778
Plant Fencing		Gates/Security Equip	1/1/2015	8,331.71	1,041.46	7,290	1.11	9,217	12.5%	100%	9,217
Treatment		Chem pumps, grit pumps, SCADA imp, PLC upgr	1/1/2015	126,280.95	6,314.05	119,967	1.11	139,696	5.0%	100%	139,696
Collection		TRI Improvements, TRI rehab	1/1/2016	381,566.68	11,447.00	370,120	1.08	410,564	3.0%	100%	410,564
Treatment		Chem & grit pmps, clarifier repair, digester, scada, plc	1/1/2016	231,511.08	6,945.33	224,566	1.08	249,105	3.0%	100%	249,105
Collection		TRI improvements, digital scanning, Heiser property	1/1/2017	273,291.63	2,732.92	270,559	1.04	284,659	1.0%	100%	284,659
Treatment		Clarifier Repairs, CIPP Project, Centrifuge, Modules	1/1/2017	271,123.65	2,711.24	268,412	1.04	282,400	1.0%	100%	282,400
Vehicles		1986 Ford Pick-Up	1/1/1986	-	-	0	2.59	0	0.0%	0%	0
Vehicles		1989 IHC F 5070 Chasses	1/1/1989	-	-	0	2.41	0	0.0%	0%	0
Vehicles		1990 Chevy Pick-Up	1/1/1991	-	-	0	2.30	0	0.0%	0%	0
Vehicles		1993 Chevy 4x4 super cab	1/1/1993	-	-	0	2.14	0	0.0%	0%	0
Vehicles		1996 Chevy Pick-Up4x4	1/1/1996	19,705.00	19,705.00	0	1.98	39,005	100.0%	0%	0
Vehicles		Peabody Myers Vactor from TSD	1/1/2000	-	-	0	1.79	0	0.0%	0%	0
Vehicles		3/4 ton Chevy Pick Up	1/1/1995	22,421.00	22,421.00	0	2.03	45,590	100.0%	0%	0
Vehicles		Cat 950F Wheel Loader	1/1/1995	194,058.00	194,058.00	0	2.03	394,589	100.0%	0%	0
Vehicles		Oasis Golf Cars	1/1/1998	6,968.00	6,968.00	0	1.88	13,094	100.0%	0%	0
Vehicles		1998 Mack Dump Truck	1/1/1999	91,994.00	91,994.00	0	1.84	168,904	100.0%	0%	0
Vehicles		1998 Backhoe Loader	1/1/1999	86,690.00	86,690.00	0	1.84	159,165	100.0%	0%	0
Vehicles		Dodge Durango 2001	1/1/2000	28,290.00	28,290.00	0	1.79	50,589	100.0%	0%	0
Vehicles		2001 Ford F150 Pick Up / cell & radio	1/1/2001	4,006.85	4,006.85	0	1.76	7,037	100.0%	0%	0
Vehicles		2002 Ford F250 Ext Cab Truck	1/1/2002	24,196.00	24,196.00	0	1.70	41,170	100.0%	0%	0
Vehicles		Replace skid loader	1/1/2002	37,800.00	37,800.00	0	1.70	64,317	100.0%	0%	0
Vehicles		Dodge Durango	1/1/2004	25,920.00	25,920.00	0	1.56	40,527	100.0%	0%	0
Vehicles		Dodge Durango	1/1/2004	25,920.00	25,920.00	0	1.56	40,527	100.0%	0%	0
Vehicles		Chevy-Plow & Dump Truck	1/1/2005	25,805.00	25,805.00	0	1.49	38,553	100.0%	0%	0
Vehicles		Dump Bed vehicle 7 Snow Plow	1/1/2006	13,846.00	13,846.00	0	1.44	19,872	100.0%	0%	0
Vehicles		2006 Ford Expedition	1/1/2006	26,048.00	26,048.00	0	1.44	37,384	100.0%	0%	0
Vehicles		2007 Ford F150 4x4	1/1/2007	20,653.00	20,653.00	0	1.40	28,837	100.0%	0%	0
Vehicles		2007 Ford F150 4x4	1/1/2007	20,653.00	20,653.00	0	1.40	28,837	100.0%	0%	0
Vehicles		2009 Chev. Traverse	1/1/2009	27,574.25	27,574.25	0	1.30	35,773	100.0%	0%	0
Vehicles		2009 Chev. Trailblazer	1/1/2009	25,437.25	25,437.25	0	1.30	33,001	100.0%	0%	0
Vehicles		Golf Cart	1/1/2010	9,265.19	9,265.19	0	1.26	11,709	100.0%	0%	0
Vehicles		Vactor Truck	1/1/2010	323,793.00	323,793.00	0	1.26	409,210	100.0%	0%	0
Vehicles		2012 Ford F250 4 X 4, 2012 Chevy, Snow Plow	1/1/2012	80,806.44	80,806.44	0	1.20	96,575	100.0%	0%	0
Vehicles		Lite Trax; lab vehicle	1/1/2013	18,210.35	18,210.35	0	1.17	21,220	100.0%	0%	0
Vehicles		2014 Jeep Grand Cherokee 4x4, registration	1/1/2014	29,139.00	25,496.63	3,642	1.13	33,055	87.5%	0%	0
Vehicles		2014 Ford F-150	1/1/2014	23,714.22	20,749.94	2,964	1.13	26,901	87.5%	0%	0
Vehicles		Lite Trax; lab vehicle (retention)	1/1/2015	3,659.26	2,287.04	1,372	1.11	4,048	62.5%	0%	0
General Plant		Additions	1/1/1983	0.00	-	0	2.74	0	0.0%	0%	0
General Plant		Additions	1/1/1984	0.00	-	0	2.68	0	0.0%	0%	0
General Plant		Computers	1/1/1985	0.00	-	0	2.65	0	0.0%	0%	0
General Plant		Additions	1/1/1986	0.00	-	0	2.59	0	0.0%	0%	0
General Plant		Additions	1/1/1987	0.00	-	0	2.52	0	0.0%	0%	0
General Plant		New Copier & Additions	1/1/1988	0.00	-	0	2.46	0	0.0%	0%	0
General Plant		Additions	1/1/1989	19,548.68	19,548.68	0	2.41	47,122	100.0%	0%	0
General Plant		Additions	1/1/1990	75,000.00	75,000.00	0	2.35	176,318	100.0%	0%	0
General Plant		Office Equip, Motorola Intral 2000 Sys, & General	1/1/1991	138,354.81	138,354.81	0	2.30	318,330	100.0%	0%	0

Asset #	Contributed	Description	Date Acquired	Original Cost	Accumulated Depreciation	Net Book Value	ENR-CCI 8/1/2018 11,124 ENR Factor	Repl. Cost	% Depr.	% Eligible	Replacement Cost
General Plant		General Equipment	1/1/1992	81,047.16	81,047.16	0	2.23	180,864	100.0%	0%	0
General Plant		Pump Truck, Lab Equip, & General	1/1/1993	135,626.16	135,626.16	0	2.14	289,592	100.0%	0%	0
General Plant		Additions	1/1/1994	53,751.97	53,751.97	0	2.06	110,570	100.0%	0%	0
General Plant		Additions	1/1/1995	32,285.19	32,285.19	0	2.03	65,647	100.0%	0%	0
General Plant		Equip, Crackfill, Upgrades	1/1/1996	124,031.64	124,031.64	0	1.98	245,514	100.0%	0%	0
General Plant		Additions	1/1/1996	69,146.85	69,146.85	0	1.98	136,872	100.0%	0%	0
General Plant		Additions	1/1/1997	222,170.67	222,170.67	0	1.91	424,225	100.0%	0%	0
General Plant		Lab Equip, Addl Office Heat/Cool, & General	1/1/1998	98,989.00	98,989.00	0	1.88	186,014	100.0%	0%	0
General Plant		Additions	1/1/1999	40,889.00	40,889.00	0	1.84	75,073	100.0%	0%	0
General Plant		Additions	1/1/2000	33,900.00	33,900.00	0	1.79	60,621	100.0%	0%	0
General Plant		Capital Outlay Proj, Equipment	1/1/2001	83,776.63	83,776.63	0	1.76	147,138	100.0%	0%	0
General Plant		Misc Projects, & Lab Equip.	1/1/2002	129,124.95	129,124.95	0	1.70	219,708	100.0%	0%	0
General Plant		Additions	1/1/2003	103,108.00	103,108.00	0	1.66	171,351	100.0%	0%	0
General Plant		Lab Equip, Stationary Equip, Misc Proj	1/1/2004	115,779.92	115,779.92	0	1.56	181,025	100.0%	0%	0
General Plant		Additions	1/1/2005	156,568.42	156,568.42	0	1.49	233,917	100.0%	0%	0
General Plant		Additions	1/1/2006	282,473.16	282,473.16	0	1.44	405,404	100.0%	0%	0
General Plant		Additions	1/1/2007	595,048.76	595,048.76	0	1.40	830,853	100.0%	0%	0
General Plant		Translucent Panels, AS 400 Upgrade, Elect Test Equip, Misc.	1/1/2008	134,358.56	134,358.56	0	1.34	179,840	100.0%	0%	0
General Plant		Lab Meters, Chopper Pump, Computers, Test Eq., Pipe	1/1/2009	65,219.55	65,219.55	0	1.30	84,612	100.0%	0%	0
General Plant		Fuel Tank, Windows, Lab Eq, snowblow, Site Imp, Furn.	1/1/2010	207,614.65	194,638.73	12,976	1.26	262,384	93.8%	0%	0
General Plant		Doors, Lab Eq, Phone, Computers, Asphalt	1/1/2011	184,113.34	149,592.09	34,521	1.23	225,716	81.3%	0%	0
General Plant		Equip, Computers, doors, Chem Trench	1/1/2012	180,622.94	124,178.27	56,445	1.20	215,869	68.8%	0%	0
General Plant		Lighting, Instruments, scada, hvac, doors, equip, computers	1/1/2013	132,151.76	74,335.37	57,816	1.17	153,994	56.3%	0%	0
General Plant		Lighting, Instruments, scada, hvac, doors, equip, computers	1/1/2014	164,164.80	71,822.10	92,343	1.13	186,228	43.8%	0%	0
General Plant		Lighting, Instruments, sump pumps, lab equip, computers	1/1/2015	205,625.57	64,257.99	141,368	1.11	227,469	31.3%	0%	0
General Plant		Doors, Lab Eq, Comp supply, circuit breaker, pis sftwr	1/1/2016	80,190.61	15,035.74	65,155	1.08	86,285	18.8%	0%	0
General Plant		Doors, furniture, computers, radios	1/1/2017	98,603.69	12,325.46	86,278	1.04	102,705	12.5%	0%	0
General Plant		Deletions	5/1/2018	(31,338.46)	0.00	(31,338)	1.01	(31,686)	0.0%	0%	0
				<b>\$146,909,969</b>	<b>\$60,741,608</b>	<b>\$86,168,361</b>		<b>\$304,968,284</b>			<b>\$296,879,221</b>
											<b>RCN</b>
Land											\$2,174,726
Plant Fencing											346,044
Treatment											256,862,807
Collection											37,495,644
Vehicles											0
General Plant											0
<b>Total</b>											<b>\$296,879,221</b>
Land											\$0
Plant Fencing											0
Treatment											16,196,816
Collection											0
Vehicles											0
General Plant											0
<b>Total</b>											<b>\$16,196,816</b>