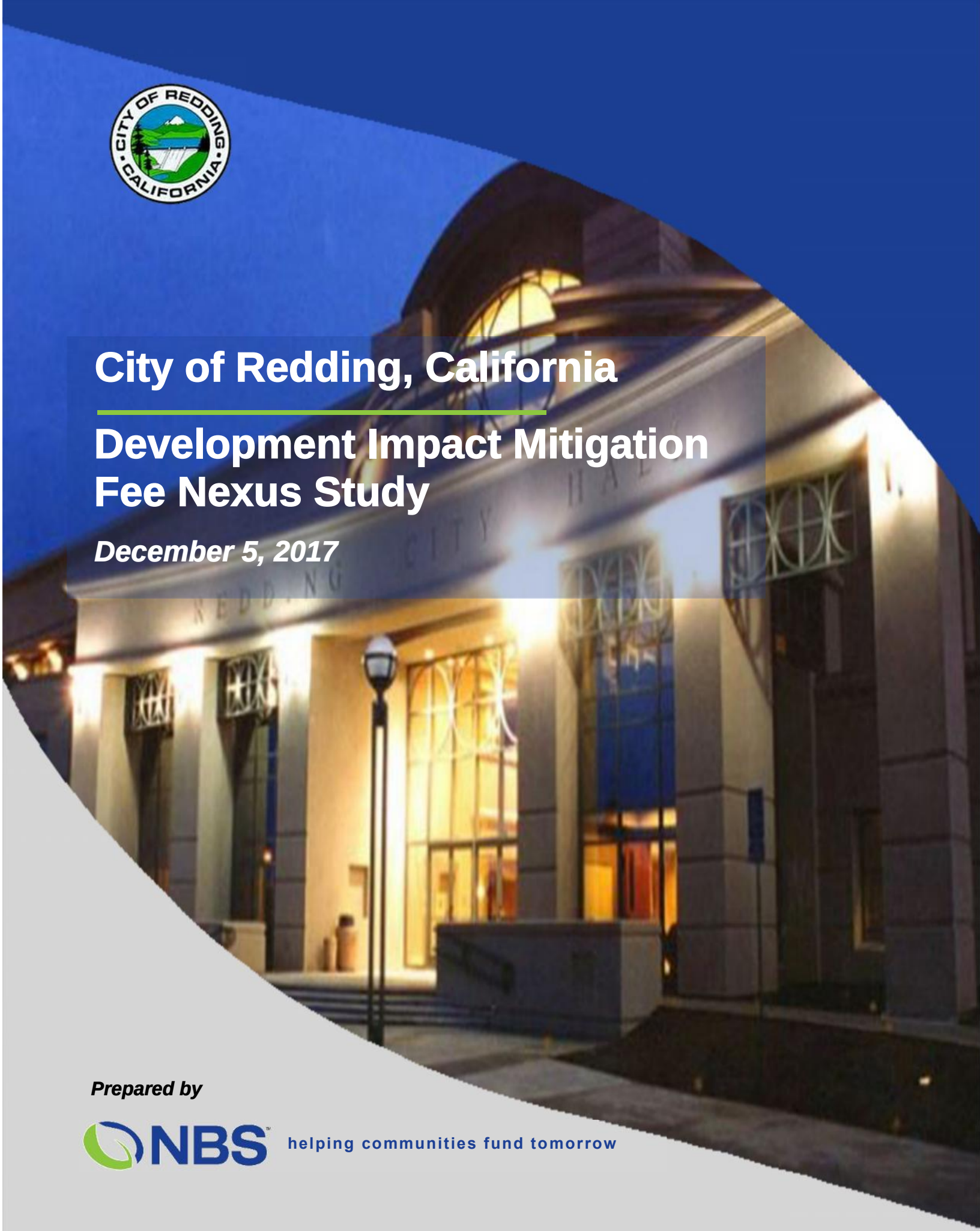

City of Redding, California

Development Impact Mitigation Fee Nexus Study

December 5, 2017

Prepared by

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EXECUTIVE SUMMARY

This fee nexus report presents the results of a comprehensive update of the City of Redding's impact fee programs for the following four types of facilities:

- Fire protection
- Citywide transportation
- Water
- Wastewater[1]

This report also fully documents the findings necessary for compliance with State of California's Mitigation Fee Act (Government Code 66000 et seq.), which prescribes the means by which public agencies may impose development impact fees, in order to adopt the proposed impact fees.

Background and Study Objectives

The City of Redding adopted a Comprehensive Impact Fee Program in 2000, establishing impact fees for fire, parks, water, wastewater, storm drain and transportation. The impact fees have been updated since then. In 2004, as part of the Parks, Trails and Open Space Master Plan, park fees were reviewed and updated to reflect the community's investment in park and recreation facilities and to further refine the park level of service. In 2007, the North Redding Traffic Benefit District was created to fund transportation improvement costs for the Oasis Road Specific Plan Area, and to establish the fair share cost of improvements applicable to the rest of the City. Also in 2007, the Fire Facilities Impact Fee Update was adopted. The most recent update to impact fees for the four types of facilities that are subject of this report was completed in 2013.

The City continues to face challenges funding public facilities to accommodate growth. Since the passage of Proposition 13, property tax revenues have been insufficient for capital funding, and federal and state assistance have not replaced the decline in local revenue sources. These funding shortfalls have caused declining facility standards (i.e., the ratio of facility capacity to service population), which have accelerated the rate of facility deterioration, increased operating costs, and reduced efficiency of the City's operating departments. Given these funding difficulties and the impacts new growth has on infrastructure, the City requires new development to pay fees to fund the facilities necessary to maintain City services at current levels.

This report documents the relationship between new development in Redding and the related cost of public facilities to serve growth in the community. It also provides estimates of the cost of facilities necessary for growth and calculates the updated public facilities fees by land use or customer type that would generate revenues equal to these costs. The estimates of public facilities that would be required to serve growth assume that new development will provide facilities that ensure the City can maintain its current level of service standards for these facilities.

The City relies on its authority to levy public facilities impact fees under the police powers granted by the State Constitution which provides that cities and counties may make and enforce ordinances which are not in conflict with state law. This report provides the documentation and findings necessary for the adoption of proposed public facilities impact and capacity fees.

Population, Housing, and Employment Projections

The existing population and employment numbers for this report were obtained from U.S. Census Bureau 2016 Community Survey 1-Year Estimates and Center for Economic Studies. It is noted that traffic analysis

[1] This report uses "wastewater" and "sewer" interchangeably.

used a 20-year planning horizon, while 10-year planning horizons were used for the water and wastewater utilities, as explained later in this report. Population metrics are summarized in **Table 1.**

Table 1. Existing Population and Employment Summary

City of Redding	2016
Population[1]	91,808
Employment[2]	44,070

[1] Current population for City of Redding is the U.S. Census Bureau, 2016 American Communities Survey 1-Year Estimates

[2] Current employment is from the U.S. Census Bureau, Center for Economic Studies.

Fee Schedules and Revenues

Table 2 depicts the proposed City-wide impact fees for several different development types which provide a snapshot of the updated fees resulting. For simplicity and illustrative purposes, it is assumed that both residential and non-residential development types reflect a typical residential home, or a household equivalent unit (HE), which is a 5/8-inch meter for water connections. Non-residential fees for fire protection reflect commercial shopping centers, general office buildings, and general light industrial buildings. Fees for actual development projects will be based on their specific uses, square footages, and water meter sizes.

Table 2. Proposed Citywide Impact Fees

Land Use	Fire Protection	Traffic[1]	Water[2]	Sewer[3]	Total
Residential, fee per unit					
Single Family	$909	$5,782	$4,300	$5,100	$16,091
Multi-family (2 to 4 units)	$782	$3,469	$3,225	$3,825	$11,301
Multi-family (5+ units)	$615	$3,469	$4,300	$5,100	$13,484
Non-residential, fee per 1,000 square feet					
Commercial	$628	$7,285	$4,300	$5,100	$17,313
Office	$929	$9,193	$4,300	$5,100	$19,522
Industrial	$502	$8,384	$4,300	$5,100	$18,286

[1] Citywide traffic impact fee program, additional nonresidential land use types not shown in this table.

[2] Water system impact fees apply to residential and non-residential.

[3] Sewer fees are based on a Houshold Equivalent (HE or standard 5/8 inch water meter).

For comparison purposes, the City's current impact fees are shown in **Table 3**. The proposed fee levels are lower than the previous fees.

Table 3. Current Citywide Impact Fees

Land Use/Customer Class	Fire Protection	Traffic[1]	Water[2]	Sewer[3]	Total
Residential, fee per unit					
Single Family	$1,016	$6,013	$5,893	$7,368	$20,290
Multi-family	$816	$3,608	$5,893	$7,368	$17,685
Non-residential, fee per 1,000 square feet					
Commercial	$668	$9,561	$5,893	$7,368	$23,490
Office	$989	$8,719	$5,893	$7,368	$22,969
Industrial	$535	$7,576	$5,893	$7,368	$21,372

[1] Citywide traffic impact fee program includes city-wide portion of North Redding Traffic Benefit District fee; actual fee will vary based on the use.

[2] Water system capacity fee based on a standard 5/8-3/4 inch meter; not including any additional charges such as per foot frontage charges.

[3] Wastewater system impact fee is for one Household Equivalent (HE) service connection.

Source: City of Redding

Accessory Dwelling Units

The State of California has developed new legislation[2] that encourages the development of Accessory Dwelling Units (ADUs) to help address the lack of housing inventory and affordability throughout the State. An ADU is "an attached or a detached residential dwelling unit which provides complete independent living facilities for one or more persons. It shall include permanent provisions for living, sleeping, eating, cooking, and sanitation on the same parcel as the single-family dwelling is situated".

ADUs are commonly referred to as second units, granny flats, or in-law units; they can be detached, attached, or a repurposed existing space that has been converted into an independent living unit. ADUs include efficiency units and manufactured homes. Recent legislation[3] removed some barriers for the development of ADUs. An ADU must meet the following criteria[4]:

- One ADU per single-family lot.
- Lot must be a in a single-family or multifamily residential zone.
- An ADU must have independent exterior access from the existing residence.
- An ADU must have side and rear setbacks that are sufficient for fire safety.

Most notably for the purpose of collecting impact fees, ADUs are not to be considered a new residential connection to a utility.[5] If the ADU does not meet the criteria list above, an agency may require a new or separate utility connection and charge an impact fee, provided that the impact fee is proportionate to the burden the ADU places on the utility (i.e. water or sewer). Such fees can be based on the unit's size or number of plumbing fixtures and, as with similar fees, it must not exceed the reasonable cost of providing service.[6]

[2] CA Government Code, Section 65852.2 (i) (4).

[3] *Senate Bill 1069*, approved September 27, 2016 and *Senate Bill 229*, approved October 8, 2017. See: https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill_id=201520160SB1069 and https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill_id=201720180SB229.

[4] *Senate Bill 229*, Amending Section 65852.2 of the Government Code, Section 65852.2 (e).

[5] Also referred to as connection fees, capacity charges, or buy-in fees.

[6] *Senate Bill 229*, Amending Section 65852.2 of the Government Code, Section 65852.2 (f) (2) (B).

Other Potential Mitigation Programs

This study does not address the full impact of every development project in the City of Redding. Any given project due to its size, density, intensity of activity, and location may impose additional burdens upon the City's facilities and services. Based on the findings of a project-specific impact analysis, an applicant for such a development project may be required to construct other improvements, develop or participate in other fee, assessment, and/or special tax programs, or otherwise provide or fund mitigation(s) for those additional impacts. These additional mitigations are independent of the fees set forth in this study, and are designed to address different project-specific impacts. Consequently, payment of the fees set forth in this study may not reduce or eliminate these additional mitigations, and conversely, fulfillment of these additional mitigations may not reduce or eliminate the fees set forth herein.

Authority to Impose Other Mitigation Measures

Impact Fees and Other Development Project Mitigation and Funding Measures

The adoption of an impact fee program does not preclude the City's ability to levy other additional fees, taxes, or special assessments or to impose project-specific mitigation measures or exactions including those measures found to be necessary to mitigate ongoing fiscal impacts or impacts to public facilities, if the project-specific mitigation measures provide and/or fund facility improvements or ongoing public services that are not or will not be funded by the impact fee program.

Fee Updates

This impact fee study update and the recommended fees assume a given level of development activity over the study period. The development that actually occurs will result in both different impacts and fee revenues than those that are projected in this study. For that reason, regular updates are recommended to adjust the growth impact fees to match the needs created by the rate of actual development.

SECTION 1. INTRODUCTION

This impact fee nexus report presents an overview of the analysis process for development impact fees in the City of Redding. The report is intended to explain the methods used to determine the need for and cost of public facilities to accommodate new development in Redding. This introduction provides the general background and purpose of impact fees and how the fees will be established in Redding. The following topics are included in this section:

- Public Facilities Financing in California
- Authority to Impose Impact Fees
- Mitigation Fee Act and Required Findings
- Organization of the Report
- Facility Standards, Levels of Service, and Deficiencies

Public Facilities Financing in California

The changing fiscal landscape in California during the past four decades has steadily undercut the financial capacity of local governments to fund infrastructure needed for growth. Three dominant trends stand out:

- The passage of a string of tax limitation measures, starting with Proposition 13 in 1978 and continuing through the passage of Proposition 218 in 1996.
- Declining popular support for bond measures to finance infrastructure for the next generation of residents and businesses and related public support for the development community to mitigate impacts of their development projects on community infrastructure.
- Steep reductions in federal and state assistance.

Faced with these trends, many cities and counties have shifted the burden of funding infrastructure expansion from existing rate and tax payers to new development. This funding shift has been partly accomplished by the imposition of development impact fees, also known as public facility, capital facility, and mitigation fees. A majority vote of the City Council is required for adoption.

Most local agencies have implemented impact fee programs that charge new development close to the full cost required to preserve the existing level of service standards as growth occurs. When local agencies do not collect the full amount, the effect is often a decline in facility standards, though some communities are able to increase other revenue sources such as grants, utility rates, etc., to compensate.

In another typical situation, a city's General Plan may state that, as a policy, a specified level of service shall be maintained for a particular facility. However, the current level of service for that facility may be less than the stated General Plan policy. In that case the city will have, in effect, a "deficiency" that cannot be remedied exclusively through development impact fees. It is a fundamental principle of impact fee analyses that any existing deficiencies be remedied using funds other than impact fee revenues.

Authority to Impose Impact Fees

The authority for the City of Redding to impose fees for mitigation of impacts to public facilities generated by land development is rooted in its fundamental police powers under Article XI Section 7 of the California Constitution, which provides that cities and counties may make and enforce ordinances which are not in conflict with state law. The City, under its broad authority to protect the public's health and safety, may regulate land development including the right to impose conditions on development which may require direct provision of public improvements, land dedications, and in-lieu fees. The State of California Mitigation Fee Act, discussed below, established the procedures and findings necessary to impose generally applicable development impact fees.

Mitigation Fee Act and Required Findings

As a result of the growing use of impact fees after passage of Proposition 13 and concern over inconsistencies in their application, the State Legislature passed the Mitigation Fee Act, ("Act") starting with Assembly Bill 1600 in 1988. The Act, contained in California Government Code Section 66000 et seq., establishes ground rules for the imposition and ongoing administration of impact fee programs. The Act became law in April 1989 and requires local governments to document the following when adopting an impact fee. Together, these items constitute a "nexus study" when documented and presented in a report to the City Council that:

- Identifies the purpose of the fee.
- Identifies the use of fee revenues.
- Determines there is a reasonable relationship between the fee's use and the type of development paying the fee.
- Determines there is a reasonable relationship between the need for the fee and the type of development paying the fee.
- Determines there is a reasonable relationship between the amount of the fee and the cost of the facility attributable to development paying the fee.

This impact fee nexus study and report comply with California Government Code Section 66000 et seq. by providing the required documentation for the above findings and the determinations that establish the basis for the recommended fees. *It is important to note that the City is not required to establish the fee levels documented in the nexus study and may choose to adopt a lower (but not a higher) fee.*

Another fundamental premise of impact fees is that the burden of the fees cannot total more than the actual cost of the public facility needed to serve the development paying the fee, including costs associated with administering the fee program. Also, fee revenues can only be used for their intended purposes, and the Act has specific accounting and reporting requirements both annually and after every five-year period for the use of fee revenues. These requirements are outlined in Section 8 of this report.

Impact fee revenues may not be used for staffing, operations, and maintenance of either existing or new facilities. Because of this, the cost of the public facilities analyzed does not consider the operational costs of any of these facilities, which, over their life-cycle, will be quite substantial.

Organization of the Report

This report includes a discussion of the population and employment assumptions used in the fee analyses. The facility categories included in this report are:

- Fire Protection
- Citywide Transportation
- Water
- Wastewater

The nexus study for each facility category is generally organized using the following sections to clearly document the requirements of the Mitigation Fee Act discussed above:

- ***The Purpose of the Fee***.
- ***The Existing Facilities Inventory***. Where applicable (in fire protection) the current investment in these facilities is identified.
- ***The Service Population***. Defines what type of development requires this type of facility, whether (1) only residents, or (2) residents and businesses (measured by employment). It also projects the service population growth or demand for facility capacity anticipated to occur over the study period – out to the year 2027 or 2037, depending on the particular fee category.

- ***The Facility Standards and Unit Costs***. Establishes a reasonable relationship between the need for the fee and the type of development paying the fee. Using common factors such as facility costs per capita, this analysis ensures that each development project pays its fair share of total facility costs.
- ***The Facility Costs to Accommodate Growth***. Establishes a reasonable relationship between the use of fee revenues and the type of development paying the fee. This section estimates the total facilities costs associated with new development over the study period. The revenues that would be collected through the impact fee should be approximately equal to the total cost of the facilities needed for growth.
- ***The Fee Schedule***. Establishes a reasonable relationship between the amount of the fee and the cost of the facility attributable to development paying the fee by basing the fee on the facility's cost per capita, then using household occupancy rates, employment density rates, or dwelling unit equivalence to calculate the fee per development unit.

Facility Standards, Level of Service, and Deficiencies

Throughout this report the words "standard" and "level of service" are used (at times interchangeably) to describe the level of investment in capital facilities that are needed to serve the community. A standard is defined as the adopted policy, or benchmark, that the City would like to achieve for any particular facility. For example, the City of Redding General Plan includes a goal to achieve 10 acres of improved parkland per 1,000 residents. This is the standard set by the City. On the other hand, level of service (LOS) refers to the actual level of benefit that the current population experiences. Level of service may be different from the standard for a given facility. When the existing LOS is less than the standard, a deficiency exists for that facility.

New development alone cannot be asked to improve the LOS provided by those facilities which serve both new and existing development. State law limits impact fees to the cost of maintaining services for new development at the same level as existing development.

Level of Service Methodologies – The methods used to establish the LOS for each facility category fall into three broad headings: the "General Plan LOS" used for traffic, the "Existing Inventory Method" used in the fire protection fee study, and the "System Capacity Method" for water and wastewater systems.

Traffic Level of Service – To determine the applicable LOS standard for the transportation impact fees, the existing roadways contained in the City of Redding General Plan Transportation Element were analyzed to establish the current and forecasted LOS terms of volume to capacity ratio (V/C) or intersection delay. The General Plan specifies a LOS C (at the transition between LOS C and D) as the minimum for the majority of transportation element roadways and intersections. Exceptions specifically include "Downtown" streets, the State highway system, and river crossing street corridors. The 2010 update of the Shasta County Travel Demand Model determines the 2015 LOS and 2035 LOS, from which two categories of roadways are identified relative to LOS:

1. Roadways that are currently acceptable (those that operate above LOS C) and will fall below the acceptable LOS with new development (by 2035).
2. Roadways that currently operate below LOS C and will fall farther below the acceptable LOS with new development.

The procedure for assigning the costs to the transportation impact fee program is described in the Transportation Facilities, Section 4 of this report.

Fire Protection Level of Service – The fee study for fire protection uses what is called the "Existing Inventory Method" to establish the LOS standards. With this method, new development funds the expansion of facilities at the same level of service, or current standard, enjoyed by the service population (residents and/or workers) in existing development. By definition, this approach results in no facility deficiencies

attributable to existing development. The advantage of the existing inventory method is that it assures new development will fund a LOS that is equivalent to the existing population's LOS.

Use of the existing LOS in the nexus study does not establish them as City policy, which may only occur through the General Plan process. Indeed, many jurisdictions consider their existing levels of service to be deficient compared to the policies stated in their General Plans.

Water and Wastewater Level of Service – In contrast to other services, most notably transportation, both water and wastewater "level of service" are not dependent on the area of the City in which residents and businesses are located. In other words, the water and sewer utilities provide a consistent level of service to all customers in their systems: (1) clean, potable water under acceptable levels of pressure, and (2) wastewater effluent collection, treatment and disposal. Rather than focusing on the facilities needed to, for example, meet a traffic level of service, the only real question for water and sewer services is whether there is adequate capacity available in the system for new customers.

New water and sewer customers typically cover 100 percent of any specific infrastructure needed to "extend" service to them. For example, a water or sewer main may need to be extended to those new customers and may be solely for the purpose of serving that specific new development. If additional growth is expected to occur in the future, and the size of pipes installed needed to be larger than is needed to meet the immediate needs of new development, future customers would typically reimburse either the City or the current development for some portion the costs of oversizing that pipeline[7], depending on which one paid the initial cost of oversizing the pipeline.

Additionally, water and wastewater impact fees are based on an equivalent level of capacity, or a household equivalent (HE) unit. Water capacity fees are based on meter service sizes (e.g., 5/8-inch, 3/4-inch, 1-inch, 2-inch meters, etc.), which correspond to the number of EDU's served by each meter size. Sewer capacity fees rely on HE's, which correspond to the expected effluent generated by a typical residential customer with a 5/8-inch water meter.

[7] Adjustments are typically made to these reimbursements to account for depreciation of the asset being reimbursed.

SECTION 2. POPULATION, EMPLOYMENT, AND HOUSING ESTIMATES

Introduction

The estimate of existing population is a critical factor in the Existing Inventory Method for determining the need for future transportation, water, and sewer capacities. Redding's current residential population is taken from the US Census Bureau, 2016 American Communities Survey 1-Year Estimates. Current employment (jobs within the city as opposed to employed residents who live in the city but may work elsewhere) are based on data from the U.S. Census Bureau, Center for Economic Studies, and used by the Shasta Regional Transportation Planning Agency for its travel demand model. **Table 4** below presents the current estimates.

Table 4. Existing Population

City of Redding	2016
Population[1]	91,808
Employment[2]	44,070

[1] Current population for City of Redding is the U.S. Census Bureau, 2016 American Communities Survey 1-Year Estimates

[2] Current employment is from the U.S. Census Bureau, Center for Economic Studies.

Occupancy Rates

Occupancy rates measure the number of persons in a typical dwelling unit or the number of employees in a certain floor area; in this study, that floor area is 1,000 square feet. The use of occupancy rates ensures a reasonable relationship between the increase in service population and amount of the fee. For residential development, it is commonly considered that single-family units impose a greater impact on public facilities than multi-family units, especially if census data is available that documents a higher rate of persons per household in single-family homes. If the data shows a differential in occupancy, and the level of service is stated in per capita terms (i.e., park acreage per 1,000 residents), then the fee charged must vary according to the estimated service population generated by a particular development project.

The various nonresidential land uses in this study each have a different employee occupancy rate, and therefore impose a different burden on public facilities. Developers pay the fee based on the number of additional housing units or building square feet, so the fee analysis must convert service population estimates to these measures of project size to derive a fee per unit of development. This conversion is done with the occupancy factors by land use category, shown below. The occupancy rates used in this study are shown in **Table 5.** This table shows only three of the City's nonresidential uses. See Appendix A for the complete list.

Table 5. Occupant Density Assumptions

Land Use	Occupancy/Density Factor		Employees per 1,000 sf
Residential[1]			
Single Family	2.50	persons per dwelling unit	~
Multi-family (2 to 4 units)	2.15	persons per dwelling unit	~
Multi-family (5+ units)	1.69	persons per dwelling unit	~
Non-residential[2]			
Commercial	400	building square feet per worker	2.50
Office	270	building square feet per worker	3.70
Industrial	500	building square feet per worker	2.00

[1] Persons per dwelling unit based on data from the American Community Survey, 2011 for Redding (US Census Bureau) and the California Department of Finance estimate Table E-5.

[2] Non-residential floor area per worker factors are based on "Employment Density Summary Report, Oct, 2001" prepared by the Natelson Company for Southern California Association of Governments. This report is widely cited throughout the state and remains one of the best sources of data for employment density factors; these factors were also used in the 2007 Fire Impact Fee update.

Use of Current and Future Estimates

These estimates are used as follows:

- Estimates of future growth are used to provide an estimate of the total amount of public facilities required to accommodate growth over the study period.
- Estimates of existing population and land development are used to determine current facility standards. For example, in this report the value of fire protection assets per capita are relevant to current facility standards.
- Future employment estimates are used to establish the level of service and facilities that are applicable to future nonresidential development.

Land Use Categories

Measuring the impact of growth requires an identification of land use categories for summarizing the many different types of new development. The general land use categories used in this analysis are defined below.

- **Single-family:** Detached one-family dwelling units.
- **Multi-family:** Attached dwelling units such as condominiums, duplexes, and apartments. For fire protection multi family has been broken into two categories including 2 to 4 unity multi-family housing and 5 unit and above multi-family housing. It is noted that for fire protection multi-family also includes mobile homes, senior housing, and recreational homes and that these types of residential uses are separate in the transportation, water, and wastewater sections.
- **Commercial:** Includes but is not limited to: service commercial, retail, retail-warehouse, educational, and hotel/motel development. In the transportation section, these uses are separate.
- **Office:** All general, professional, and medical office development.
- **Industrial:** All manufacturing, fabrication, food processing, warehousing, truck yards, terminals, and distribution centers. This category may also encompass business parks, and research and development space.

Applying the Impact Fees to Development Projects Involving More Than One Land Use

Some developments may include more than one land use category, such as mixed-use development with both residential and commercial uses. In these cases, the impact fee would be calculated, following the City's adopted fee methodology for mixed-use development. The Redding City Council has adopted Administrative Guidelines for the Calculation and Determination of Development Impact Fees that provides additional detail on this methodology and other impact fee administration direction.

Service Population

Different types of development use public facilities at different rates in relation to each other, depending on the services provided. For each facility type, a specific service population is identified. The service population is calculated by weighting one land use category against another based on each category's demand for services.

Different service populations are used to estimate impacts for different types of fees. In this report, the following service populations apply:

- Citywide residents and workers for fire protection.
- Citywide homes and businesses for transportation, water, and wastewater.

The specific service population for each facility category is shown separately in each section of this report. When residents and workers are part of the same service population, it is reasonable to assume that one resident places greater demand on public services and associated facilities than one worker who commutes to his/her job in Redding. Therefore, workers are "factored" for purposes of determining their relative demand and the demand nonresidential development has on public facilities included in this study.

SECTION 3. FIRE PROTECTION FACILITIES

This section summarizes the analysis of the need for fire facilities to accommodate new development and to maintain the current level of protection and emergency services. This section will document a reasonable relationship between new development and the recommended impact fee for funding of such facilities.

Existing Fire Facilities

The Fire Department provides fire protection services, emergency medical services (EMS), rescue services, fire prevention services, and public education services to residential and nonresidential populations within the Redding city limits.

The City of Redding owns and operates the fire stations, firefighting vehicles, and equipment listed below. Firefighting vehicles and equipment are included in the facility costs because they represent integral capital investments needed to provide fire protection services and they have at least a five-year service life.

- 8 fire stations, 1 administrative office, and 1 storage building
- 2 ladder trucks
- 17 engines
- 15 support and response vehicles
- 1 fire rescue boat
- Equipment on apparatus
- Other equipment, including protective clothing, breathing apparatus, fixed air refill station, fire hose radio/communications equipment, office equipment, and fire station contents.

The total estimated value of all fire protection assets is summarized in **Table 6.**

Table 6. Fire Protection Facilities Valuation

Item	Total Valuation in 2017 Dollars
Total Existing Stations	$25,911,893
Insured Contents	$1,832,256
Fire station sites (land value)	$3,131,211
Fire protection Vehicles and Equipment on Vehicles, current value	$11,292,736
New Communications Repeater Stations (3)	$245,520
Other Equipment	$2,051,556
Total Valuation	**$44,465,172**

Fire Facilities Service Population

The Fire Department serves both residents and workers in the City of Redding. **Table 7** below shows the estimated service population for 2016. Nonresidential buildings are occupied less intensively than dwelling units, so it is reasonable to assume that average per-worker demand for fire and EMS services is less than the average demand per-resident. Therefore, in calculating the service population, residents are given a weight of 1.0 and workers are factored at 0.69 to reflect lower per capita service demand.

This factor, which is widely used in California and Arizona, is based on a study done by the City of Phoenix in 2000, which analyzed the number of fire and EMS calls originating from various land uses. The Phoenix analysis, and the factor, is considered generally applicable to urban fire departments.

Table 7. Fire Protection Service Population

	Residents	Workers	Adjusted Workers	Service Population[1]
Current (2016)	91,808	44,070	30,408	122,216
service population weighting factor	*1.00*	*0.69*		

[1]Service population is the sum of residents and workers adjusted by the weighting factor used in the prior Fire Impact Fee study dated August 2013.

Per Capita Standards and Unit Costs

To ensure equity between the level of existing facilities and the facilities that new development should be responsible for, a per capita facility standard is used. For fire protection, the standard is the total per capita cost of the City's current fire protection assets based on the current asset values. This method uses the existing level of service in terms of per capita asset value. This approach assumes that fire protection facilities and equipment will be needed to serve new development at the current ratio of fire facilities to the total residential and worker populations in terms of total cost per individual.

This method is appropriate when the current facilities are deemed adequate to serve the current population. Use of the existing cost per capita to calculate the impact fee ensures that new development pays only for the facilities that are equivalent to those provided to existing development. The fire protection cost per capita is calculated in **Table 8**.

Table 8. Fire Protection Cost per Capita

Factor	Cost/Value
Current value of fire protection assets	$44,465,172
2017 Service Population[1]	122,216
Current fire protection standard (cost) per capita	**$363.82**

[1] Includes the current estimated residential and worker populations.

Fire Facilities for New Development/Use of Fee Revenue

A long-range plan for fire protection facilities is currently being developed by the City and is expected to be completed by December 2018. Until adoption of the plan, the fire protection impact fee revenues will be placed into a separate fund account for potential future purchases of land for new stations and equipment. Funds may also be used immediately to: upgrade existing facilities, contribute to the purchase of new equipment that serves future development, and to enhance the utility of existing fire protection systems and/or perform refurbishment within the parameters allowed by Government Code Section 66000.

Fee Schedule

Table 9 calculates the fire protection facilities impact fee for new development based on the facilities cost per capita shown in Table 7 and Table 8 above.

The fee represents the amount required to fund the facilities needed to accommodate growth based on the existing inventory standard. Citywide residential and nonresidential development would pay the fee based

on the service population for the facilities. The potential fee is shown side-by-side with the current impact fee for fire.

Table 9. Fire Protection Fee Schedule

Land Use[1]	Costs per Capita	Density[1]	Proposed Fees[2]	Current Fees	% Change
Residential					
Single Family	$363.82	2.50	$909.56	$1,016	-10.5%
Multi-family (2 to 4 units)	$363.82	2.15	$782.22	$816	-4.1%
Multi-family (5+ units)	$363.82	1.69	$614.86	$816	-24.6%
Non-residential[3]					
Commercial	$251.04	2.50	$627.60	$668	-6.0%
Office	$251.04	3.70	$928.84	$989	-6.1%
Industrial	$251.04	2.00	$502.08	$535	-6.2%

[1] Density factor is persons per dwelling unit for residential land uses and workers per 1,000 square feet for non-residential land uses.

[2] Per dwelling unit for residential uses and per 1,000 square feet for non-residential land uses.

[3] Cost per capita for non-residential is adjusted for workers at 69%.

In all categories above, the proposed fire protection fees are lower than the current fees. For Single Family the fees decreased 10.5%, for Multi-family (2-4 units land use) the fees decreased 4.1%, for the new Multi-family (5+ units) category the fees decreased 24.7% over the previous standalone “Multi-family” category. On non-residential land uses, the proposed fire protection fee decreased by 6.1% for each of the corresponding categories (Commercial, Office, Industrial).

SECTION 4. TRANSPORTATION FACILITIES

This section summarizes an analysis of the need for roadway and intersection improvements in the City of Redding. These transportation facilities are needed specifically and exclusively to accommodate new development for the analysis period 2015–2035. This section documents a reasonable relationship between new development and the proposed impact fee for funding of these road improvements**.**

Background

The City of Redding adopted the current Citywide Transportation Development Impact Fee Program (TIF) as part of the comprehensive fee study in 2000. Between 2000 and 2009 the transportation fees were increased to reflect inflation and the projects prioritized for construction scheduling. In 2013, the TIF Program was updated through a comprehensive fee study along with the other city development impact fees. This nexus study represents an update to the 2013 Study to account for changes in population growth rates and the expected intensity of future development within the City. The program was updated through the following:

- The Shasta County Travel Demand Model (Traffic Model) was utilized to determine the Level of Service (LOS) for City roadways based on anticipated growth and general plan land use;
- Roadways not meeting accepted LOS standards were identified and improvements to roadways and intersections were developed to mitigate;
- The road improvement projects included in the current TIF program were reviewed to determine continued need for the projects based on current and future traffic demand;
- Project cost estimates were prepared for new projects or updated for the current program projects to reflect the general increase in construction costs over the last four years;
- The anticipated growth in land development has changed substantially since the last update of the transportation fee both in the amount, location and nature of expected future development;
- Recently completed Traffic Impact Analysis Reports from recently proposed developments.

There are a number of issues related to the calculation of the TIF that generally do not apply to other types of impact fees. These include peak versus average daily traffic volumes, trip diversion, trip substitution, trip length, vehicle miles travelled, and the sources of trip generation data. Most land uses generate traffic throughout the day, but it is the traffic that is generated during peak hours when adjacent roads are least able to accommodate additional trips that is critical to determining the demand for additional roadway or intersection capacity created by new development for which the impact fee will be charged. With the exception of safety improvements, new trips generated during off-peak hours when capacity is ample will have little impact, create no need for additional capital improvements, and do not enter the calculation of impact fees in this study.

Transportation Level of Service

The transportation improvements needed to accommodate new development are based on a LOS analysis that involves the modeling of traffic operations on existing roadways and intersections throughout the City of Redding. As stated in the introduction, this nexus study must show a reasonable relationship between impact fees on new development and the demand for new or upgraded facilities generated by the development paying the fee. For traffic facilities, this relationship is shown by comparing the current LOS of specific roadways with the LOS that would result by adding the growth in vehicle trips associated with the projected new land development.

This “before and after” comparison indicates where improvements are needed to mitigate the impacts of the projected development. In the traffic modeling process impact mitigation measures in the form of road widening, intersection improvements, or new road segments added to the existing road network to achieve the adopted LOS standard for all modes of travel including pedestrian and bicycle facilities. This procedure ensures that the measures result in the adopted LOS standard, or in the maintenance of the LOS, that the

City generally experiences today. By identifying these specific mitigation measures, and basing the impact fee on the cost of these measures, this procedure also maintains the relationship between the impact fee and the purpose of the fee revenues.

Transportation Demand from New Development

The first step in the transportation fee nexus study is to estimate the traffic generated by new development and the "demand" for transportation facilities by that new development. Traffic demand is based on the following factors:

- Total trips generated by given land uses based on evening peak-hour trip generation rates (the rates which were used in the traffic impact modeling process and consequent impact mitigation measures required during the 2015–2035 study period).
- Net "new" trips are calculated for each land use category. Net new trips are determined by taking the trip ends determined by the Traffic Model and applying a factor that accounts for the percentage of primary trips to the land use as opposed to those that stop as they are passing by ("pass-by" trips) a use on the way to a final destination. Because the vast majority of trips that end at the home are primary trips, all residential uses are given a primary trip factor of 1.00.
- Each land use is associated with an average trip length, or the distance from the trip generator, typically the home, and the given land use type that is a final destination. These trip length factors have been adjusted to mirror the rates used in the Traffic Model, in order to reflect localized conditions. For this study, trip lengths for each trip purpose were calculated for the travel model transportation analysis zones (TAZ) within the City of Redding only, rather than using averages applicable on a county wide basis. In land uses in the Downtown Specific Plan area, the trip generation rates and trip lengths were further adjusted downward to reflect the higher density, mixed land use, and related variety of transportation options.

These factors vary by land use type. To estimate the total demand for new transportation facilities across all land use types a dwelling unit equivalent (DUE) factor is calculated that sets the demand from a single-family dwelling unit at 1.00 DUE. DUE factors for all other land uses are calculated relative to the demand of a single-family unit by dividing the average vehicle miles traveled for each land use by the vehicle miles traveled by a single-family unit. Vehicle miles traveled is calculated by multiplying the PM Peak Hour trip rate by the percentage of new trips (pass by rate) by the average trip length for the land use as produced by the Traffic Model. The trip rate and pass by percentages are based on industry standard data contained in the Institute of Transportation Engineers (ITE) Trip Generation Manual. This calculation generates a DUE rate per unit of development for each land use. For example, multi-family units generate approximately 64% of the afternoon peak-period vehicle-miles traveled that a single-family home does (based on ITE data); therefore, the DUE of a multi-family unit is 0.64.

Base Level Land Development and 2035 Projection

A base-level 2015 land use for Redding was developed based on control totals from the United States Census (for population and housing) and the California Economic Development Department (for employment), combined with a detailed parcel-level land use inventory that was originally created in 2004 for the Shasta County travel demand model and updated to 2010 for population. There were an estimated 38,600 housing units in the City of Redding in 2015 (including approximately 1,960 mobile home units and recreational units, numbers which are not expected to increase by 2035). Nonresidential floor area was estimated to be approximately 16.7 million square feet in 2015.

The change in land use projected to occur between 2015 and 2035 is based on information of known and potential development projects provided by the City of Redding Development Services Department, and updated in 2017. The amount of each development included in the 2035 forecast was adjusted so that total growth in the city would match overall population and employment growth forecasts as derived from economic forecasts by the California Department of Finance and the 2017 California County-Level Economic Forecast published by the California Department of Transportation (Caltrans). Total housing units

in 2035 are projected to be 43,508, or an increase of 3,914 units. Nonresidential uses are projected to grow by approximately 2.5 million square feet to 19.3 million square feet by 2035.

Table 10 summarizes the traffic demand estimated to be generated by new development from 2015 to 2035. The table shows only the three housing types and the ten broad nonresidential categories of land use that are projected in the travel demand model to increase between 2015 and 2035. To implement this fee program, the City will develop a comprehensive list of land uses that further breakdown these broad categories consistent with the ITE and the Shasta County Travel Demand model to establish individual DUE's.

Table 10. Transportation Demand Projection (2015-2035)

Land Use[1]	Existing Dwelling Units or 1,000 Square Feet (2015)	Total 2035 (units or 1,000 sq. ft.)	Growth 2015-2035 (Units or 1,000 sq. ft.)	DUE Factor[2]	New DUEs
Residential (in units)					
Single Family	25,882	28,749	2,867	1.00	2,867
Multi-family (2-4)	4,103	4,543	440	0.64	283
Multi-Family (5+)	6,778	7,255	477	0.64	305
Mobile Homes	1,831	1,961	130	0.61	79
Sub-total	38,594	42,508	3,914		3,534
Non-residential (in thousand sq. ft. units)					
Industrial	2,899	3,312	413	1.35	560
Retail	3,521	4,490	969	1.84	1,778
Office	2,651	2,898	248	2.27	561
School	2,011	2,244	233	0.96	223
Hospital	2,162	2,548	386	1.10	426
Service (incl. Hotel)	2,017	2,190	173	2.27	392
Restaurant	527	595	69	5.19	356
Government	916	1,001	85	0.92	79
Sub-total	16,703	19,278	2,575		4,375
Total	**55,297**	**61,786**	**6,489**		**7,909**

[1] See Section 2 for land use type definitions. Growth is measured in dwelling units for residential uses and 1,000 square feet for non-residential uses.

[2] DUE means "dwelling unit equivalent," or traffic generation by land use per unit compared to a single-family dwelling unit (approximately 6.2 peak-period vehicle-miles per unit). Multi-family generates approximately four peak-period vehicle-miles per unit. Factor for non-residential is per 1,000 square feet.

Transportation Facilities Needed by New Development

The needed transportation improvements are directly related to the increase in peak-period vehicle-miles generated by projected growth through 2035. The travel demand model indicates which road segments and intersections in the existing City of Redding road network will be significantly impacted by the growth in vehicle trips, and will exceed the City's adopted LOS threshold for vehicle/capacity and intersection delay as well as non-motorized uses. An initial set of road improvements that would restore the modeled network to the adopted LOS standard was then added to the 2035 network conditions.

This initial list of road improvements was presented to a Public Works Advisory Group at a series of workshops between June and November 2017 for its review and discussion. Several proposed roadway improvements were deleted because a lower level of service on these particular segments was considered acceptable; the improvements would be primarily of benefit to existing development, or to development

within the North Redding Traffic Benefit District or the Dana Drive Benefit District; or the improvements would require substantial and unlikely acquisition of additional right-of-way in already developed areas of the city.

The advisory group recommended the final list of improvements for inclusion in the Citywide transportation impact fee program shown in **Table 11**.

Table 11. Citywide Transportation Impact Fee Program Recommended Improvements

Project ID	Roadway	Limits of Project	Cost	Project Description
BIX	I-5 Northbound Ramp	Interchange at South Bonnyview	$8,000,000	Placeholder project for capacity related work at the Interchange of I-5 with South Bonnyview. May include all or parts of interchange (ie ramps, roundabouts, divergent diamond) and likely to be an initial and future phase. Ultimate cost is $21M .
CC2	Churn Creek Rd	Intersection with Rancho and Victor	$ 4,313,000	Construct a roundabout to improve the intersection of Churn Creek Road, Victor Avenue, and Rancho Road.
CIX	Churn Creek Interchange with 299	Intersection of WB Ramps	$4,000,000	Placeholder project for ramp or intersection improvements for capacity related work at westbound intersection of the interchange at SR 299 with Churn Creek Rd.
CC1	Churn Creek Rd	Browning St to Bodenhamer Blvd	$ 1,450,000	Widen Churn Creek Road between Bodenhamer Blvd and Browning Street (approximately 2700 LF). A 96' Right-of-Way is proposed. However a reduced section of 3 - 12' lanes and 2 - 8' shoulders and completion of ped facilities is proposed.
VC1	Victor Ave	Mistletoe Ln to East Cypress Ave	$1,775,000	Widen Victor Avenue between E. Cypress Avenue and Mistletoe Lane (approximately 2700 LF). A 84' Right-of-Way is proposed for this segment of Victor Avenue. However a reduced section of 3 - 12' lanes and 2 - 8' shoulders and completion of ped facilities is proposed.
VC2	Victor Ave	Hartnell to Cypress	$2,413,000	Widen Victor Avenue between Hartnell Avenue and E. Cypress Avenue (approximately 2500 LF). An ultimate 100' Right-of-Way is proposed for this segment of Victor Avenue, but only 70' of improvements are needed at this point: 2 - 11' lanes, center turn lane, 1 - 10' parking, 1 - 6' bike lane and 1 - 10' paved path.
VC3	Victor Ave	Highway 44 to Old Alturas	$ 1,475,000	Widen Victor Avenue between State Route 44 and Old Alturas Road (approximately 2500 LF). A 96' Right-of-Way is proposed for this segment of Victor Avenue. However a reduced section of 3 - 12' lanes and 2 - 8' shoulders with ped facilities is proposed.
OLD	Old Alturas Rd	Victor Ave to Shasta View Dr	$5,500,000	An 84' Right-of-Way is proposed for this segment of Old Alturas and an Interim Arterial will be constructed with seperated ped facilities. Add Roundabouts at Victor Ave, Lema Rd and Edgewood Dr.
PL	Placer Street	Pleasant to Airpark	$1,800,000	Widen to complete the 2nd westbound lane, shoulder and sidewalk.
RA	Railroad Ave	Sheridan St. to Grandview	$2,203,000	Widen Railroad Avenue between Sheridan Street and Grandview Avenue (approximately 3100 LF). An 84' Right-of-Way is proposed: 3 - 12' lanes, 2 - 6' bike lanes and 1 - 8' parking.
HIL	Hilltop Dr	River Bend Rd to I-5	$1,650,000	Realign Palisades Ave to the west to provide queing space for a turn lane on Hilltop Drive. This will delay the need to construct another structure over I-5.
MIN	Minor Projects	Various Roadway, Bike and Ped capacity enhancement projects	$6,000,000	Minor capacity related roadway widening, bike and ped facilities, and grant match
DT1	Debt Service	Bond Debt	$3,647,000	Repayment of Bond Debt for Bonnyview
RAM	Ramp Metering	Mitigation to prevent impacts to Main Line freeways	$1,500,000	Includes placeholder to meter ramps at Twin View, Lake and Cypress
Total City-wide TIF Program Cost Estimate: $45,726,000				

Transportation Development Impact Fee Program Cost

The total estimated cost of the recommended Citywide TIF improvements is $45,726,000 and the cost per DUE is $5,782 ($45,726,000/7,909). Using the cost per DUE ensures that the various types of land development will pay the transportation impact fee in direct proportion to each land use's relative impact on the road network, on the basis of its single-family unit equivalence.

Fee Schedule

A partial fee schedule for the Citywide TIF is shown on **Table 12**. This table includes proposed fees on the two predominant residential types and the three broad non-residential uses based on the cost per equivalent dwelling unit for the city-wide program. The proposed non-residential fees reflect the following specific uses: Retail shopping center; general office building; and general light industrial building. As indicated above, the final fee schedule for transportation has been expanded to aid in the administration of the fee program by providing rates for a broad range of typical land uses. The expanded table is included in Appendix A of this report.

Table 12 Proposed Citywide Transportation Impact Fee Schedule

Land Use	TIF Program Cost Per DUE	Peak-Hour Trips	Average Trip Length	Primary Trip Factor[1]	Peak-Hour VMT (Primary Trips)	DUE[2] factor	Fee[3]
Residential							
Single Family	$5,782	1.00	6.15	1.00	6.15	1.00	$5,782
Multi-family	$5,782	0.62	6.00	1.00	3.72	0.60	$3,469
Non-residential							
Industrial	$5,782	0.97	8.00	1.00	7.76	1.26	$7,285
Commercial	$5,782	3.71	4.00	0.66	9.79	1.59	$9,193
Office	$5,782	1.49	6.00	1.00	8.94	1.45	$8,384

[1] The Original Trip Factor deducts the percentage of pass-by trips

[2] DUE means "dwelling unit equivalent", or the impact by land use per unit compared to a single family dwelling unit.

[3] Fee per dwelling unit for residential land uses and per 1,000 square feet for nonresidential uses.

SECTION 5. WATER FACILITIES

Introduction

The following background on the City's water system summarizes the analysis of, need for, and funding related to new water facilities in order to accommodate growth and new development in the City.

Water Supply. The City of Redding uses both surface-water and groundwater supplies. The surface-water supply is governed under two separate contracts with Bureau of Reclamation (USBR) and one with Anderson Cottonwood Irrigation District (ACID). Water is diverted from either the penstocks dropping from Whiskeytown Lake to Spring Creek tributary of Keswick Lake or the Sacramento River at PS1. The City also has two groups of groundwater wells: the Enterprise wells and the Cascade wells. On average, the City gets approximately 74 percent of its total annual supply from surface water and 26 percent from groundwater. Surface water is used seasonally throughout the year and groundwater is used minimally in the winter but peaks along with surface-water use in the summer.

Water Treatment and Distribution. The system infrastructure includes two Water Treatment Plants (WTP), 16 groundwater wells, approximately 2.93 million feet (560 miles) of conveyance and distribution pipelines, ten pump stations, and twelve reservoirs providing a total of 33.5 million gallons (MG) of storage. In 2016, the City water system had an average of 28,983 connections serving a population of approximately 92,000 people.

The City's two surface-water treatment plants (WTP) are the Foothill WTP and the Buckeye WTP. The City's two groups of groundwater wells include the twelve Enterprise wells, which supply most of the City's groundwater, and the four Cascade wells, which constitute a relatively minor supply. The City's water system is divided into six primary pressure zones: Foothill, Hill 900, Cascade, Enterprise, Hilltop-Dana, and Buckeye. Small sub-zones exist for Mary Lake and Summit City.

Existing Water Demand. During 2016, the Average Daily Demand (ADD) and Maximum Daily Demand were 19.0 mgd and 35.9 mgd, respectively. The relative mix of customer types (residential, commercial, industrial) and the percentage of total water use by each customer group has remained fairly constant over the last decade. Residential and commercial water service connections make up 89 percent and 7 percent of the connections, and represent 73 percent and 14 percent of the total water demand, respectively. The remaining 13 percent of the water demands are for a mix of public facilities, industrial, and irrigation users. Key factors related to existing and future water demands include the following:

- The City-wide average water use is 209 gallons per person per day[8].
- The average ratio of population per water service connection has remained relatively constant at 3.2 persons per connection[9].
- The City-wide ratio of MDD/ADD is 1.9.
- The City-wide maximum month to average month ratio is 1.7.

Establishing Water Impact Fees. Similar to other citywide facilities, the water impact fees[10] imposed by the City on new or upsized connections to the systems are subject to California's Mitigation Fee Act (G.C.66000 et seq.). The impact fees presented in this report are calculated using the same methodology the City has historically used to calculate water system impact fees. This includes an incremental cost component covering planned capital improvements, but does not include a buy-in component, or a share

8 *CITY OF REDDING 2015 URBAN WATER MANAGEMENT PLAN*, TABLE ES-1, INTERIM 2015 WATER USE TARGET.

9 City of Redding, *Water Utility Master Plan Update 2016*, Section 6.0, Page ES-9.

10 Otherwise known as system development charges, capacity fees, or connection fees.

of existing infrastructure. Continuing to exclude a buy-in component was recommended by the citizen advisory group assisting the City staff in this study for four reasons:

1) The City currently lacks adequate data to establish the value of existing facilities relative to the remaining capacity of those facilities;
2) The City's fee program has historically not included a "buy–in" component;
3) The current practice of not including a "buy-in" is used elsewhere within the utility industry, and
4) The proposed fee fully accounts for all growth-related infrastructure costs identified in the study.

The planning period covered by capacity fee calculations extends to FY 2027/28, which reflects a shorter period than covered by the City's existing water master plan (updated in 2016). Infrastructure costs beyond FY 2027/28 are somewhat speculative at this time and City has determined that water impact fees will be updated periodically as future projects and costs are better known. The sections below summarize the analysis used to determine the new water impact fees along with the recommended fees, and documents a reasonable relationship between new development and a capacity fee for funding those facilities. Appendix B includes the quantitative analysis used to derive the fees.

General Water Impact Fee Methodology

Calculating water impact fees uses the cost of planned, future improvements as the cost basis, which is then allocated between existing and future users. The total costs attributable to future users is then divided by the expected number of future customers, as measured in housing equivalent units (which corresponds to a 5/8-inch water meter). The water impact fees are then adjusted based on the size of the water meter at the connection, as this best represents the proportionate system capacity requirements of the new connection.

Water Impact Fees for Multi-Family Accounts. Multi-family accounts (i.e., duplex, triplex and more than four-unit developments) are different than typical single-family residential and commercial accounts. For example, there is no established standard for whether they should be master metered (i.e., a single meter or single compound meter) or individually metered. Although building codes and engineering standards must be applied, existing and future multi-family developments may be configured differently. These differences warrant special treatment when assigning water impact fees.

Typically, new water connections are proportional to single-family residential units (equivalent dwelling unit or household equivalent). NBS' experience is that multi-family (four units or more) use less than single-family accounts on average. For some apartment units, use may be as low as 50-percent of a typical single-family account. In contrast, duplexes, triplexes may use as much a 90-percent of a single-family account.

Because the City's billing records do not have precise data on the number of units in multi-family connections, precise water consumption estimates are not obtainable. In light of this, NBS' opinion is that using an average of 75-percent of a single-family equivalent for each unit of a multi-family is a reasonable estimate and would comply with industry standards of what is "fair and equitable" for allocating growth-related costs through impact fees to new multi-family accounts. This is the approach used in developing new impact fees for the City's water utility.

Demographics and Water Infrastructure

In its simplest form, water impact fees are calculated by dividing the total value of assets allocated to growth by the total units available to growth (or in other words, the capacity in the system available for new customers). **Table 13 Table 13.** below summarizes the current population and growth through the planning period (FY 2027/28) and indicates four percent growth in population over that period. Estimates of existing and future population is critical in determining the need for future water capacities. These estimates of future growth are used to provide an estimate of the total amount of water infrastructure required to

accommodate growth over the study period. **Table 14.** and **Table 15** summarize the growth in equivalent meters through the planning period.

Table 13. Estimated Population Through FY 2027/28

Year	Population[1]	Change in Population	%Change[2]
2017-18	92,282	--	--
2027-28	**95,656**	**3,374**	**4%**

1. Projections From ITRON as reported by City Staff.

2. Rounded to nearest %.

Table 14. Projected Water System Growth Through FY 2027/28

EXISTING AND PROJECTED NUMBER OF METER EQUIVALENT UNITS:					
Meter Size	Existing Meters[1]	Current Equivalent Meters		Projected Equivalent Meters	
		Equivalency Relative to 5/8 inch Meter[1]	Equivalent Meters (EM's)	%Population Increase 2017/18-2027/28 [2]	Projected No. of EM's *(FY 2027/28)*
			(1)	*(2)*	*(3) = (1)x(2)*
5/8 inch	25,751	1.00	25,751	4.0%	26,781
3/4 inch	865	1.50	1,298	4.0%	1,349
1 inch	1,424	2.50	3,560	4.0%	3,702
1 1/2 inch	328	5.00	1,640	4.0%	1,706
2 inch	526	8.00	4,208	4.0%	4,376
3 inch	51	16.00	816	4.0%	849
4 inch	22	25.00	550	4.0%	572
6 inch	13	50.00	650	4.0%	676
8 inch	3	80.00	240	4.0%	250
10 inch	0	210.00	0	4.0%	0
12 inch	0	265.00	0	4.0%	0
Total	**28,983**	**--**	**38,713**	**--**	**40,261**

1. Source: City's billing records and meter factors (as of February 2016).
12" meter is estimated based on AWWA M6, Table 5-3 increase from 10" to 12" meters.

2. Projections From ITRON. City Staff to confirm data source.

Table 15. Water System Demographics

Allocation Factors for Existing and Future Water System Customers						
Demographic Statistics	Existing Total *(1)*	Projected Service Total in FY 2027/28 *(2)*	Cumulative Change		Allocation Factors	
			Number of Equivalent Meters	%Increase	Existing Customers	Future Customers
Equivalent Meters	**38,713**	**40,261**	1,549	4%	96%	**4%**

1. Per the City of Redding's utility billing data as of February 2016.

2. The projected equivalent meters is based on population growth estimates through FY 2027/28.

The system improvement costs are allocated to existing and future users based on various allocation factors for individual types of assets as estimated by the City. The water master plan identifies approximately $123.6 million in necessary improvements to both maintain the existing system ($116.9 million) and provide

expanded facilities to accommodate growth ($6.7 million, excluding share of debt payments). In general terms, the water system can be broken down into two categories.

Water Distribution System Costs. Distribution system costs include the vast network of reservoirs and pipes that provide water to the treatment plants, and deliver water to customers, as well as the pump houses necessary ensure adequate water pressure throughout the system. The cost to replace aging pipes is typically borne by utility rate payers, with any increase in size needed to accommodate new development included in the connection (impact) fee program. Pipes needed to serve new development are assumed to be paid for by development.

Water System Treatment Plants/Wells. The existing treatment plants and system of wells currently have sufficient capacity to provide for future growth within the planning horizon. Given the age of the Foothill Treatment Plant however, significant improvements will need to be made over the next 10 years to ensure that the system is reliable and meets regulatory standards.

Table 16 summarizes the planned facility costs that are allocated to future development and provide the basis for water impact fees. A more detailed listing of capital projects is provided in Appendix B.

Table 16. Planned Water System Capital Improvements

Project Category[1]	Costs of Planned System Development ($2017) through FY 2027/28	Allocation Basis (%)		Distribution of Cost Basis ($)	
		Existing Services	Future Services	Existing Services	Future Services
Miscellaneous Projects	$ 1,866,427	21%	79%	$ 395,245	$ 1,471,182
Piping	77,603,187	97%	3%	75,547,469	2,055,718
Pumps and Control Valves	5,524,269	100%	0%	5,524,269	-
Services	425,284	25%	75%	106,321	318,963
Tanks	7,226,827	61%	39%	4,402,902	2,823,925
Treatment Plants	22,261,464	100%	0%	22,261,464	-
Wells	8,668,011	100%	0%	8,668,011	-
Total Project Costs	**$ 123,575,469**	**95%**	**5%**	**$116,905,680**	**$ 6,669,788**

1. Project descriptions and cost data were provided by City Staff in the proforma for the Water utility.

Calculated Water Impact Fees

The impact fees have been calculated based on the growth projections show in Table 13. , which projects a 4 percent increase in the number of customers that will connect to the water and sewer systems by the end of Fiscal Year 2027/28. NBS' analysis estimates that the 4 percent growth rate translates to an additional 1,549 SFR equivalent connections to the water utility during this time period.

Although the City Staff and the Advisory Group evaluated several impact fee alternatives, they recommended that water impact fees be based on a reduced CIP alternative that includes the delay of several projects to outside of the planning period (FY 2027/28), and resulted in the lowest water impact fee of the alternatives considered.

Based on the results of this analysis, the calculation of the water impact fee is shown in **Table 17**; the impact fees for various meter sizes recommended in this report are summarized in **Table 18**.

Table 17. Calculation of Water Impact Fees

System Asset Values Allocated to Future Development and Calculated New Water Impact Fee	Impact Fee w/o Buy-In Component[7]	Comments
System Asset Values Allocated to New Development		
Existing System Buy-In[1]	$ -	
Future System Expansion[2]	$ 6,669,000	*7.0% Allocation to Growth (per City Proforma)*
Total: Existing & Future System Costs	$ 6,669,000	
Adjustments to Cost Basis:		
Future Customer's Share of Outstanding Debt[3]	$ -	*Excluded because these are existing system (a buy-in costs - which is excluded from this analysis)*
Cash Reserves[4]	$ -	
Total: Adjustments to Cost Basis	$ -	
Total Adjusted Cost Basis for New Development	**$ 6,669,000**	
Projected New Equivalent Meters (through FY 2027/28)[5]	*1,549*	
Calculated New Water Impact Fee ($/Equivalent 5/8 in Meter)[6]	**$ 4,300**	

1. *Buy-In component excluded in this analysis. This is consistent with the City's previous impact fee methodology.*
2. *Refer to Exhibits 4 & 5 for a detailed list of planned capital projects.*
3. *Refer to Exhibit 3. The City assumes that 51% of the debt service will be paid using impact fee revenues, so this amount is an additional asset cost that should be included in the impact fee calculation.*
4. *Available cash reserves allocated to future customers. Refer to Exhibit 3.*
5. *Allocation Basis: Refer to Exhibit 1.*
6. *Adjusted System Costs divided by Equivalent 5/8" Meters, rounded down to nearest $100 increment.*
7. *Existing System Buy-In and Cash Reserves (less unspent Impact Fees) were excluded. This is consistent with the City's previous impact fee methodology.*

Table 18. Summary of Updated Water Impact Fees

Meter Size	Equivalency to Base Meter Size	Unit Cost	Updated Impact Fee Per Meter
5/8 inch	1.00	$4,300	**$4,300**
3/4 inch	1.50	$4,300	**$6,450**
1 inch	2.50	$4,300	**$10,750**
1 1/2 inch	5.00	$4,300	**$21,500**
2 inch	8.00	$4,300	**$34,400**
3 inch	16.00	$4,300	**$68,800**
4 inch	25.00	$4,300	**$107,500**
6 inch	50.00	$4,300	**$215,000**
8 inch	80.00	$4,300	**$344,000**
10 inch	145.00	$4,300	**$623,500**
12 inch	215.00	$4,300	**$924,500**

As shown in these tables, City staff and the citizen advisory group working with City staff on this update recommended a fee of $4,300 per 5/8-inch meter or equivalent for water, although the City Council could adopt lower fees. These calculated impact fees are projected to be valid through the end of Fiscal Year 2027/28, and include the planned capital improvements and the expected growth in the customer base for

the next nine years. However, they should be periodically reviewed and adjusted as needed to reflect changes in growth rates, needed projects to accommodate growth, capital improvement costs and/or other assumptions.

It should be noted that the fees indicated above are lower than the current impact fee. This is primarily the result of the City's decision to use lower capital improvement project costs allocated to growth related system improvements.

Water Capacity Fee Findings Statements

This study submits the following findings, which have been substantiated and quantified by the technical analysis in this section, further documented in Appendix B, and reflect accepted industry standards as well as prevailing practices of the City:

- The purpose of the water impact fee is to ensure that new and upsized water system connections reimburse and/or mitigate a reasonable portion of the capital investments in the water utility made and/or planned by the City. These are investments which benefit or are necessary to accommodate increased demand for water service.
- The City uses impact fee proceeds to fund capital investments in the water system, which include the future design and construction of planned facilities.
- All parcels seeking permission to connect to the City's water system are subject to the water impact fee, payment of which is a condition of connection approval. Appendix B identifies the total number of projected future water customers. In addition to the 38,713 equivalent meter service units currently in service, the City expects to add approximately 1,549 additional equivalent meter service units by FY 2027/28.
- Impact fees for new water customers vary depending on the size of the water meter serving the connection. Meter size is directly proportionate to the demands a parcel places on the water utility system. Once connected, the City must meet those demands, specifically the peaking requirements related to the meter size. Appendix B illustrates the equivalency factors differentiating meter sizes, based on their maximum continuous flow. Of 28,983 meters currently connected to the system, 89% are 5/8-inch meters, representing an equivalency factor of 1.0, from which the number of equivalent meters for all larger meters are calculated.
- The City has made past investments in water infrastructure, and plans to invest further in expanded and upgraded facilities. These investments make possible the availability and continued reliable provision of utility service sufficient to meet water demands inclusive of growth within the City's service area.
- Without additional capital investment in existing facilities, the water system capacity available to serve the needs of future connections would be uncertain. Without planned investments in future facilities, water service would not be sustainable at the level of service enjoyed by current users. Appendix B identifies the total value of planned water system capital improvements which are attributable to serving future connections, which amounts to approximately $6.7 million.
- The City's impact fees are derived directly from the value of capital investments in existing and planned water facilities. Table 17. derives and identifies the water infrastructure cost per equivalent dwelling unit for a new connection. A unit cost of $4,300 per housing equivalent unit (HEU) was calculated.
- Upon payment of an impact fee, a new customer incurs the obligation to pay the same ongoing service rates as existing customers, regardless of the date of connection to the systems or the actual start of service. Assessment of impact fees ensures that over time, ongoing service rates are not disproportionately burdened by the accommodation of system growth.

SECTION 6. WASTEWATER FACILITIES

Introduction

The following background on the City's wastewater system and summarizes the analysis of the need for and funding of new wastewater facilities in order to accommodate future growth and development.

Existing Wastewater Facilities. The City operates two wastewater treatment facilities serving the two service basins in the City – the Clear Creek and Stillwater Basins:

- **Clear Creek Basin:** The Clear Creek Basin encompasses areas west of the Sacramento River, the western portion of the Enterprise area, and areas served upstream of the North Market Street Lift Station. The Clear Creek Basin collection system includes 11 lift stations for pumping wastewater across the Sacramento River or over ridges. The collection system terminates at the Clear Creek Wastewater Treatment Plant (WWTP), and treated effluent is discharged to the Sacramento River.

- **Stillwater Basin:** The Stillwater Basin encompasses areas east of the Sacramento River, including: Boulder Creek and Churn Creek drainage basins upstream of the Churn Creek Lift Station, and the Clover Creek Interceptor which terminates at the Stillwater WWTP. The Stillwater Basin collection system includes three lift stations, including the Churn Creek Lift Station. The Stillwater service area covers approximately one third of the current population of the City. This portion of the City is expected to experience a higher growth rate than the Clear Creek Collection System side and at buildout is expected to serve approximately half of the population. The area serves the eastern and northern portions of the City in regions referred to in prior planning efforts and engineers reports as Twin View, Eastern Enterprise, and Stillwater Creek Service Areas. The service area contains approximately 20% commercial and industrial connections and serves the Stillwater Business Park.

The impact fees imposed by the City's Wastewater Utility on new or upsized connections to the systems are calculated in a very similar manner to water impact fees. These sewer impact fees follow the City's historical calculation methodology, which includes an incremental cost component, and does not include a "buy-in" component. The following sections document a reasonable relationship between new development and the impact fees used for funding these facilities. The planning period is through fiscal year 2027/28. Appendix C includes the quantitative analysis used to derive the fees.

General Sewer Impact Fee Methodology

In the past, the City established impact fees based on a "Household Equivalent" (HE). Essentially, a typical single-family residence represents a single HE. The impact fee for other uses was increased or decreased based on the amount of effluent discharged into the system (i.e., the "flow") relative to a single-family residence. While this method is widely used in the industry, it is very difficult to obtain accurate data on effluent discharge for each use and the program is cumbersome to administer.

As a result of the 2012 Development Impact Fee Nexus Study, the City opted to establish sewer impact fees primarily based on the size of the water meter for each new development project. However, sewer impact fees for single-family residences would, on average, be the same regardless of the size of water meter. Non-residential sewer impact fees would be based strictly on meter size.

Also, the City's Water Efficient Landscape Ordinance (Chapter 16.70 of the Redding Municipal Code) requires virtually all new multiple family and commercial developments to provide separate meters for landscape purposes and, because of this, the City believes relying on the water meter capacity for new connections provides a reasonable relationship between water meter size and the amount of effluent produced by a given customer – landscape meters would be excluded from sewer impact fees. Furthermore, it was determined that effluent strength from such uses as restaurants do not represent a measurable additional cost to the sewer collection system and a less-than-significant component of sewer

treatment plant costs. Therefore, it is more appropriate to capture any additional treatment costs from new development through sewer utility rates rather than sewer impact fees.

City Staff and the Advisory Group evaluated several alternatives calculating impact fees and, similar to water impact fees, recommended using an alternative that assumes several projects are delayed beyond the planning period (FY 2027/28). This alternative resulted in fees that are lower than current impact fees.

Sewer Impact Fees for Multi-Family Accounts. Similar to the water system, multi-family sewer accounts (i.e., duplex, triplex and more than four-unit developments) are different than typical residential and commercial accounts. For example, there is no established standard for whether they should be master metered (i.e., a single meter or single compound meter) or individually metered. Although building codes and engineering standards must be applied, existing and future multi-family developments may be configured differently. These differences warrant special treatment when assigning sewer impact fees.

As noted above, although sewer impact fees are based on their water meter size, multi-family units should consider the number of "housing equivalent" units, or HEs. It is not uncommon in the industry for sewer fees to be based on water consumption, as water use is sometimes used as a proxy for sewer effluent. For example, commercial customer sewer bills often have a volumetric component, and many utilities set fixed monthly sewer bills for single-family residential customers based on their average winter water use.

Because of the relationship between water consumption and sewer bills, sewer impact fees are calculated in a similar manner to water impact fees: a multi-family unit is set at 75-percent of the single-family fee. This simplifies the connection fees for the combined water and sewer connections – both will follow the standard of 0.75 HE per new dwelling unit for multi-family connections.

Demographics and Wastewater Infrastructure

The sewer impact fees have been calculated based on the same population growth projections used for the water utility through FY 2027/28; see **Table 13**. NBS' analysis estimates that the sewer utility will see approximately 1,840 new housing equivalent unit connections during this time period. **Table 19** and **Table 20** below summarizes the projected number of equivalent sewer service units to FY 2027/28, and indicates 4 percent growth over that period.

Table 19. Projected Wastewater System Growth Through FY 2027/28

Current and Projected Number of Sewer HE's through FY 2027/28					
Sewer Customer Class	**No. of Accounts[1]** *(2016)*	**No. of Sewer HE Units[1]** *(2016)*	**% Population Increase FY 2017/18 - FY 2027/28[2]**	**Projected No. of Sewer HE Units** *(2022)*	
Residential		*(1)*	*(2)*	*(3) = (1)x(2)*	*(Add'l HE's)*
Single-Family Residential	22,976	22,976	4%	23,895	*919*
Multi-Family Residential	11,639	11,639	4%	12,105	*466*
Non-Residential					
Commercial, No Food	2,543	8,276	4%	8,607	*331*
Commercial, Food Prep	223	1,576	4%	1,639	*63*
Industrial	137	305	4%	317	*12*
Other	67	1,215	4%	1,264	*49*
Unknown	1	1	4%	1	*0*
Total Number of Accounts	**37,586**	**45,988**	**--**	**47,828**	*1,840*

1. Number of accounts and household equivalent units (HE's) as of April 2016, per the City's utility billing data.

2. Projections From ITRON. City Staff to confirm data source.

Table 20. Sewer System Demographics

Allocation Factors for Existing and Future Sewer System Service Units						
Demographic Statistics	Existing Total	Projected Service Total[1]	Cumulative Change		Allocation Factors	
			Number of HEs	%Increase	Existing Services	Future Services
Household Equivalents (HEs)	**45,988**	**47,828**	1,840	4%	96%	**4%**

1. Projected FY 2027/28 service total based on based on population growth estimates through FY 2027/28.

Wastewater System Infrastructure. The sewer infrastructure costs included in the impact fees are allocated to existing and future users based on various allocation factors as estimated by the City, such as the level of service future improvements provide to future users. The wastewater master plan identifies approximately $132.2 million in necessary improvements to both maintain the existing system (approximately $122.8 million) and provide expanded facilities to accommodate growth (approximately $9.4 million, excluding share of debt payments). In general terms, the wastewater system can be broken down into two categories: collection and treatment systems.

Wastewater Collection System. The collection system includes the vast network of collection pipes and "lift stations" necessary to collect and move wastewater from customers to the treatment plants. The cost to replace aging pipes is typically borne by utility rate payers, with any increase in size needed to accommodate new development included in the connection (impact) fee program. Pipes needed to serve new development are paid for by development. Approximately 89% of costs attributable to future users is for collection system improvements.

Wastewater System Treatment Plants/Equipment. Given recent upgrades, the two existing treatment plants currently have sufficient capacity to provide for future growth within the planning horizon. Future users will have to shoulder their portion of planned projects, which represents approximately 11% of costs attributable to future users.

Table 21 summarizes the planned future sewer system assets and their percentage allocation to growth.

Table 21. Planned Sewer System Capital Improvements

Summary of Planned Sewer Capital Facilities and Equipment						
System Asset Description[1]	Costs of Planned System Development *(in $2017)* [2]	Allocation Basis (%)			Distribution of Cost Basis ($)	
		Existing Services	Future Services	( )	Existing Services	Future Services
Collection System Division Projects	$ 123,607,736	93%	7%	*3*	$ 115,137,951	$ 8,469,785
Collection Capital Equipment	688,813	100%	0%	*3*	688,813	-
Treatment Plant Improvements	7,657,794	87%	13%	*3*	6,679,856	977,938
Treatment Capital Equipment	340,662	100%	0%	*3*	340,662	-
Total System Costs	**$ 132,295,004**	**92.9%**	**7.1%**		**$ 122,847,282**	**$ 9,447,723**

1. Individual project descriptions and costs were provided by City (see Wastewater Utility Proformas).

2. These System Development Costs are in 2017 dollars (i.e., the inflation factors the City applied were removed from future cost estimates).

3. The costs of planned assets are allocated to existing and future users based on City allocations from the Wastewater Utility Proformas.

Calculated Sewer Impact Fees

Based on the results of the sewer impact fee analysis, the calculation of the sewer impact fee for one HE (or a 5/8-inch residential water meter) is shown in **Table 22**. While this fee is based on a household equivalent (HE) unit, individual new connections would be assessed based on the total number of

calculated HE's as represented by water meter size (see Table 18. for equivalency factors). Typical single-family residential customers, by definition, are one HE while multi-family units are set at 75-percent of a single-family unit. **Table 23** summarizes the sewer impact fees for each water meter size.

Table 22. Allocated Sewer System Costs and Impact Fee Calculation

Assets Allocated to Future Development and Calculated New Sewer Impact Fee	Calculated Impact Fee[6]	*Comments*
System Asset Values Allocated to New Development		
Existing System Buy-In (less Outstanding Debt Principal)	$0	
Future System Expansion[1]	$9,447,000	*7% Allocation to Growth*
Total: Existing & Future System Costs	*$9,447,000*	
Adjustments to Cost Basis:		
Future Customer's Share of Outstanding Debt[2]	$0	*Excluded because these are existing system (a buy-in costs - which is excluded from this analysis)*
Cash Reserves (less Unspent Impact Fees)[3]	$0	
Total: Adjustments to Cost Basis	*$0*	
Total Adjusted Cost Basis for New Development	**$9,447,000**	
Projected Increase in Connections (HEU's) to Sewer System[4]	1,840	
Impact Fee - Base Fee ($/HE)[5]	**$5,100**	

1. Refer to details of planned capital projects on Exhibit 5 & 6.
2. Future customer's share of outstanding debt principal, net present value of interest payments, less unspent impact fee reserves.
3. Available cash reserves allocated to future customers. Refer to Exhibit 3.
4. Allocation based on projected growth.
5. Adjusted System Costs divided by HE's, rounded down to nearest $100 increment.
6. Consistent with the City's historical impact fee methodology, Existing System Buy-In and Cash Reserves are excluded.

Table 23. Summary of Updated Sewer Impact Fees

Water Meter Size	No. of Equivalent Meters *(Housing Equivalent Ratio) (a)*	Unit Cost *(b)*	Updated Impact Fee Per Connection (c)
5/8 inch	1.00	$5,100	**$5,100**
3/4 inch	1.50	$5,100	**$7,650**
1 inch	2.50	$5,100	**$12,750**
1 1/2 inch	5.00	$5,100	**$25,500**
2 inch	8.00	$5,100	**$40,800**
3 inch	16.00	$5,100	**$81,600**
4 inch	25.00	$5,100	**$127,500**
6 inch	50.00	$5,100	**$255,000**
8 inch	80.00	$5,100	**$408,000**
10 inch	145.00	$5,100	**$739,500**
12 inch	215.00	$5,100	**$1,096,500**

a. Source: City's current meter factors, as directed by City staff. 12" meter is estimated based on AWWA M6, Table 5-3.
b. Existing Asset Costs Allocated to Existing & Future Users Based on Growth Projections.
c. Multi-family units, including duplex, triplex, and more than four-unit developments, are set at 0.75 HE's per unit.

Wastewater Impact Fee Findings Statements

This study submits the following findings, which have been substantiated and quantified by the technical analysis presented in this section and Appendix C, which reflect accepted industry standards as well as the prevailing practices of the City:

- The purpose of the sewer impact fee is to ensure that new and upsized connections to the systems reimburse and/or mitigate a reasonable portion of the capital investments made and planned by the City, which benefit or are necessary to accommodate increased demand for sewer service.
- The City uses sewer impact fee proceeds to fund capital investments in the sewer system, which include the future design and construction of planned facilities.
- All parcels seeking permission to connect to the City's sewer system are subject to the sewer impact fees, payment of which is a condition of connection approval. Appendix C identifies the total number of projected future sewer customers in terms of household equivalents (HE's). In addition to the 45,988 housing equivalent units currently in service, the City expects to add approximately 1,840 additional HEs by FY 2027/28.
- Impact fees for new sewer customers vary depending on the type of user that is connecting to the system. Type of use is directly proportionate to the demands a parcel potentially places on the sewer utility system. The sewer impact fees are based on housing equivalent units; therefore, a single-family residential user would pay an impact fee for one housing equivalent unit, and other user types would pay a fee based on the number of single-family equivalent units of each new connection based on the size of their water meter.
- The City has made past investments in sewer infrastructure and plans to invest further in expanded and upgraded facilities. These investments make possible the availability and continued reliable provision of utility service sufficient to meet demands inclusive of growth within the City's service area.
- Without additional capital investment in existing facilities, the sewer system capacity available to serve the needs of future connections would be uncertain. Without planned investments in future facilities, sewer service would not be sustainable at the level of service enjoyed by current users. Appendix C identifies the total value of planned system assets that are attributable to serving future connections, which amounts to approximately $9.4 million.
- Impact fees are derived directly from the value of capital investments in planned sewer facilities. Table 22. derives and identifies the sewer infrastructure cost per household equivalent unit for a new connection. A unit cost of $5,100 per household equivalent unit was calculated, which is attributed to future planned facilities.
- Upon payment of an impact fee, new sewer customers incur the obligation to pay the same ongoing service rates as existing customers, regardless of the date of connection to the systems or the actual start of service. Assessment of impact fees ensures that over time, ongoing service rates are not disproportionately burdened by the accommodation of system growth.

SECTION 7. IMPLEMENTATION

This section identifies tasks that pursuant to California Government Code Section 66000 et seq., the City should complete when implementing and/or updating any impact fee program.

Impact Fee Program Adoption Process

Impact fee program adoption procedures are found in the California Government Code Section 66000 et seq. Adoption of an impact fee program requires the City Council to follow certain procedures including holding a public hearing (California Government Code Section 6062a). Mailed notice 14 days prior to the public hearing is required only for those individuals who request such notification. Data, such as this impact fee report, and referenced material must be made available at least 10 days prior to the public hearing.

The City's legal counsel should inform the City of any other procedural requirements as well as advice regarding adoption of an enabling ordinance and/or a resolution. After adoption, there is a mandatory 60-day waiting period before the fees go into effect, unless an Urgency Ordinance, valid for 30 days, is adopted making certain findings regarding the urgency being claimed. The ordinance must be readopted at the end of the first period (and possibly at the end of the second period depending on City Council meeting dates) to cover the next 30 days and therefore the entire 60-day waiting period. Fees adopted by urgency go into effect immediately. This procedure must also be followed for fee increases and updates.

Programming Revenues and Capital Improvement Projects

The City should adjust its Capital Improvement Plan on an on-going basis to identify specific projects and program fee revenues to those projects. Use of the Capital Improvement Plan in this manner documents a reasonable relationship between new development and the use of impact fee revenues.

For the planning period of the Capital Improvement Plan, the City should allocate all existing fund balances and projected fee revenue to facilities projects. The City should plan its Capital Improvement Plan expenditures at least five years in advance and show where all collected development impact fee revenues will be spent. The impact fee revenue can be held in a project account for longer than five years if necessary to collect sufficient funds to complete a given project.

Rate-Revenue Needed to Complement Impact Fee Program

In adopting the fees as presented in this report, additional revenue from utility rates or other sources should be identified to fund the share of costs not related to new development.

Inflation Adjustment

The costs in this report are shown in 2017 dollars (unless otherwise noted) based on information provided by the City and researched sources. To ensure that the fee program stays current with the prevailing cost of construction, the City should periodically adjust the costs by an inflation index, or by a factor based on experience with actual local construction projects. The Engineering News Record Construction Cost Index 20-City average or other suitable index may be used to adjust impact fees. However, for specific cost categories, the City may apply a factor that is more appropriate to the type of facility.

Combining Fees

Impact fee revenues may be combined into two or more fee categories at the City's discretion, to facilitate administration, as long as an accounting is kept as to the revenues generated by each facility category (see "Earmarking of fee revenues" below).

Compliance Requirements

The California Mitigation Fee Act (Government Code Section 66000 et seq.) mandates procedures for administration of impact fee programs, including collection, accounting, refunds, updates, and reporting. The City should comply with the annual and five-year reporting requirements. For facilities to be funded with a combination of impact fees and other revenues, the City must identify the source and amount of the other revenues. The City must also identify when the other revenues are anticipated to be available to fund the project. The City's compliance obligations vis-à-vis the Act include but are not limited to the following specific requirements:

Collection of Fees – Section 66007 provides that a local agency shall not require payment of fees by developers of residential projects prior to the date of final inspection, or issuance of a certificate of occupancy, whichever comes first. In a residential development of more than one dwelling unit, the local agency may choose to collect fees either for individual units or for phases upon final inspection, or for the entire project upon final inspection of the first dwelling unit when it is completed. The local agency may require the payment of those fees at an earlier time if: (A) the local agency determines that the fees or charges will be collected for public improvements or facilities for which an account has been established and funds appropriated and for which the local agency has adopted a proposed construction schedule or plan prior to final inspection or issuance of the certificate of occupancy, or (B) the fees or charges are to reimburse the local agency for expenditures previously made. "Appropriated" as used in this subdivision, means authorization by the governing body of the local agency for which the fee is collected to make expenditures and incur obligations for specific purposes.

Fee Exemptions, Reductions and Waivers – In the event that a development project is found to have no impact on facilities for which fees are charged, such project must be exempted from the fees. If a project has characteristics that indicate its impacts on a particular public facility or infrastructure system will be significantly and permanently smaller than the average impact used to calculate impact fees in this study, the fees should be reduced accordingly.

In some cases, the City may desire to voluntarily waive or reduce impact fees that would otherwise apply to a project to promote goals such as affordable housing or economic development. Such a waiver or reduction may not result in increased costs to other development projects, and are allowable only if the City offsets the lost revenue from other fund sources.

Credit for Improvements by Developers – If the City requires a developer, as a condition of approval, to construct facilities or improvements for which impact fees have been or will be charged, the impact fee imposed on that development project for that type of facility must be adjusted to reflect a credit for the cost of facilities or improvements constructed or otherwise provided by the developer. If the reimbursement would exceed the amount of the fee to be paid by the development for that type of facility, the City may seek to negotiate a reimbursement agreement with the developer.

Earmarking of Fee Revenues – Government Code Section 66006 mandates that the City shall: "deposit …. fees for the improvement in a separate capital facilities account or fund in a manner to avoid any commingling of the fees with other revenues and funds of the City, except for temporary investments" ... Fees must be expended solely for the purpose for which they were collected. Interest earned on the fee revenues must also be placed in the capital account and used for the same purpose. The Act is not clear as to whether depositing fees "for the improvements" refers to a specific capital improvement or a class of improvements (e.g., fire protection, traffic or park facilities). Recommended practice is for the City is to maintain separate funds or accounts for impact fee revenues by facility category, but not necessarily for individual projects.

Reporting – Government Code Section 66006 requires that once each year, within 180 days of the close of the fiscal year, the City must make available to the public the following information for each account established to receive impact fee revenues:

1. The amount of the fee.
2. The beginning and ending balance of the account or fund.
3. The amount of the fees collected and interest earned.
4. Identification of each public improvement on which fee revenues were expended and the amount of the expenditures on each improvement, including the percentage of the cost of the public improvement that was funded with fee revenues.
5. Identification of the approximate date by which the construction of a public improvement will commence, if the City determines sufficient funds have been collected for the financing of an incomplete public improvement.
6. A description of each inter-fund transfer or loan made from the account or fund, including interest rates, repayment dates, and a description of the improvements on which the transfer or loan will be expended.
7. The amount of any refunds or allocations made pursuant to Government Code Section 66001, paragraphs (e) and (f).

The above information must be reviewed by the City Council at its next regularly scheduled public meeting, but not less than 15 days after the statements are made public.

Findings and Refunds – Government Code Section 66001 requires that, for the fifth fiscal year following the first deposit of any impact fee revenue into an account or fund as required by Government Code Section 66006, and every five years thereafter, the City shall make all of the following findings for any fee revenues that remain unexpended, whether committed or uncommitted:

1. Identify the purpose to which the fee will be put.
2. Demonstrate the reasonable relationship between the fee and the purpose for which it is charged.
3. Identify all sources and amounts of funding anticipated to complete financing of incomplete improvements for which the impact fees are to be used.
4. Designate the approximate dates on which the funding necessary to complete financing of those improvements will be deposited into the appropriate account of fund.

Annual Update of Capital Improvement Program – Government Code Section 66002 provides that if a local agency adopts a Capital Improvement Plan to identify the use of impact fees, that program must be adopted and annually updated by a resolution of the governing body at a noticed public hearing. The alternative is to identify improvements in other public documents.

The City's current Capital Improvement Program is structured around a two-year update cycle. While the City also identifies the improvements in other documents (master plans, budget documents, fee nexus studies, etc.) the City should move to the annual approval of the CIP per Sec. 66002, or, alternately, re-describe the purpose of the CIP.

Local Implementation

Local administrative procedures will be necessary to ensure that the on-going application and collection of the impact fees on a project-specific basis meets the direction and intent of CGC Section 66000 et seq. The City of Redding has adopted such procedures, and they should be updated prior to full implementation of the fee program. The City's local administrative procedures will address topics such as a change in use or the demolition of a building, calculation of fees for specific types of uses, the transfers of credits from one property to another, the calculation of fees for mixed-use projects, and similar issues. The full range of these topics is beyond the scope of this nexus study, but they must be consistent with the requirements of Government Code Section 66000.

Principal Assumptions and Considerations

In assisting the City of Redding in preparing this report and the opinions and recommendations included herein, NBS has relied on a number of principal assumptions and considerations with regard to financial matters, conditions, and events that may occur in the future as well as materials wholly prepared by the City. These assumptions, considerations, and materials, including the City's budgets, planning information, and technical direction from City staff, were provided by sources we believe to be reliable. Additionally, the City has co-authored this report and has, at their sole discretion, included statements that should not be consider to be the opinions of NBS.

While we believe NBS' use of City-provided information and assumptions is reasonable for the purpose of this report, some assumptions will invariably not materialize as stated herein and may vary significantly due to unanticipated events and circumstances. Therefore, the actual results can be expected to vary from those projected to the extent that actual future conditions differ from those assumed by NBS or provided to NBS by others.

Appendix A – Transportation

Citywide Transportation Impact Fee

City of Redding

Department of Public Works

ITE Code	Description	Peak Hour Trips	Unit	Proportion of New Trips	Average Trip Length	Vehicle Miles Traveled	Dwelling Unit Equivalent	Impact Fee	Impact Fee within Downtown Specific Plan
		ITE Rate		ITE	SCTDM	VMT	DUE's per Unit	Fee per Unit	Fee per Unit
Industrial									
110	General Light Industrial	0.97	per 1000 SF	1.00	8.0	7.76	1.26	$7,285	$5,100
120	General Heavy Industrial	0.19	per 1000 SF	1.00	8.0	1.52	0.25	$1,446	$1,012
130	Industrial Park	0.85	per 1000 SF	1.00	8.0	6.80	1.11	$6,418	$4,493
140	Manufacturing	0.73	per 1000 SF	1.00	8.0	5.84	0.95	$5,493	$3,845
150	Warehousing	0.32	per 1000 SF	1.00	8.0	2.56	0.42	$2,428	$1,700
151	Mini-Warehouse	0.26	per 1000 SF	1.00	8.0	2.08	0.34	$1,966	$1,376
Residential									
210	Single-Family Detached Housing	1.00	per DU	1.00	6.15	6.15	1.00	$5,782	$4,047
220	Apartment	0.62	per DU	1.00	6.0	3.72	0.60	$3,469	$2,428
240	Mobile Home Park	0.59	per DU	1.00	6.0	3.54	0.58	$3,354	$2,347
252	Senior Adult Housing - Attached	0.27	per DU	1.00	6.0	1.62	0.26	$1,503	$1,052
253	Congregate Care Facility	0.17	per DU	1.00	6.0	1.02	0.17	$983	$688
254	Assisted Living	0.22	per Bed	1.00	6.0	1.32	0.21	$1,214	$850
Lodging									
310	Hotel	0.60	per Room	1.00	4.0	2.40	0.39	$2,255	$1,578
320	Motel	0.47	per Room	1.00	4.0	1.88	0.31	$1,792	$1,255
Recreational									
411	City Park	1.59	per Ac	1.00	5.0	7.95	1.29	$7,459	$5,221
435	Multipurpose Recreational Facility	3.58	per 1000 SF	1.00	5.0	17.90	2.91	$16,826	$11,778
437	Bowling Alley	1.71	per 1000 SF	1.00	5.0	8.55	1.39	$8,037	$5,626
444	Movie Theater with Matinee	3.80	per 1000 SF	1.00	5.0	19.00	3.09	$17,866	$12,506
492	Health/Fitness Club	4.06	per 1000 SF	0.39	5.0	7.92	1.29	$7,459	$5,221
Institutional									
520	Elementary School	1.21	per 1000 SF	1.00	6.0	7.26	1.18	$6,823	$4,776
530	High School	0.97	per 1000 SF	1.00	6.0	5.82	0.95	$5,493	$3,845
536	Private School (K-12)	0.65	per 1000 SF	1.00	6.0	3.87	0.63	$3,643	$2,550
540	Junior/Community College	2.54	per 1000 SF	1.00	6.0	15.24	2.48	$14,339	$10,038
550	University/College	1.40	per 1000 SF	1.00	6.0	8.39	1.36	$7,864	$5,504
560	Church	0.55	per 1000 SF	1.00	4.0	2.20	0.36	$2,082	$1,457
565	Day Care Center	12.34	per 1000 SF	0.39	4.0	19.25	3.13	$18,098	$12,668
Medical									
610	Hospital	0.93	per 1000 SF	1.00	7.0	6.51	1.06	$6,129	$4,290
620	Nursing Home	0.74	per 1000 SF	1.00	8.0	5.92	0.96	$5,551	$3,886
630	Clinic	3.78	per 1000 SF	1.00	7.0	26.46	4.30	$24,863	$17,404
640	Animal Hospital/Veterinary Clinic	4.72	per 1000 SF	1.00	7.0	33.04	5.37	$31,049	$21,735
Office									
710	General Office Building	1.49	per 1000 SF	1.00	6.0	8.94	1.45	$8,384	$5,869
720	Medical-Dental Office Building	3.57	per 1000 SF	1.00	5.0	17.85	2.90	$16,768	$11,737
730	Government Office Building	1.21	per 1000 SF	1.00	4.0	4.84	0.79	$4,568	$3,197
770	Business Park	1.26	per 1000 SF	1.00	8.0	10.08	1.64	$9,482	$6,638
Retail									
812	Building Materials and Lumber Store	4.49	per 1000 SF	0.74	4.0	13.29	2.16	$12,489	$8,742
814	Variety Store	6.82	per 1000 SF	0.66	4.0	18.00	2.93	$16,941	$11,859
815	Free-Standing Discount Store	4.98	per 1000 SF	0.83	4.0	16.53	2.69	$15,554	$10,888
816	Hardware/Paint Store	4.84	per 1000 SF	0.74	4.0	14.33	2.33	$13,472	$9,430
817	Nursery (Garden Center)	6.94	per 1000 SF	0.66	4.0	18.32	2.98	$17,230	$12,061
820	Shopping Center	3.71	per 1000 SF	0.66	4.0	9.79	1.59	$9,193	$6,435
826	Specialty Retail Center	2.71	per 1000 SF	0.64	4.0	6.94	1.13	$6,534	$4,574
841	New Car Sales	2.62	per 1000 SF	1.00	4.0	10.48	1.70	$9,829	$6,881
843	Automobile Parts Sales	5.98	per 1000 SF	0.57	4.0	13.63	2.22	$12,836	$8,985
848	Tire Store	4.15	per 1000 SF	0.72	4.0	11.95	1.94	$11,217	$7,852
850	Supermarket	9.48	per 1000 SF	0.64	3.0	18.20	2.96	$17,115	$11,980
852	Convenience Market (Open 15-16 Hours)	34.57	per 1000 SF	0.44	3.0	45.63	7.42	$42,902	$30,032
854	Discount Supermarket	8.34	per 1000 SF	0.77	3.0	19.27	3.13	$18,098	$12,668
857	Discount Club	4.18	per 1000 SF	0.77	3.0	9.66	1.57	$9,078	$6,354
861	Sporting Goods Superstore	1.84	per 1000 SF	0.66	4.0	4.86	0.79	$4,568	$3,197
862	Home Improvement Superstore	2.33	per 1000 SF	0.52	4.0	4.85	0.79	$4,568	$3,197
863	Electronics Superstore	4.50	per 1000 SF	0.60	4.0	10.80	1.76	$10,176	$7,123
875	Department Store	1.87	per 1000 SF	0.66	4.0	4.94	0.80	$4,626	$3,238
876	Apparel Store	3.83	per 1000 SF	0.66	4.0	10.11	1.64	$9,482	$6,638
880	Pharmacy/Drugstore w/o Drive-Thru	8.40	per 1000 SF	0.47	4.0	15.79	2.57	$14,860	$10,402
881	Pharmacy/Drugstore w/ Drive-Thru	9.91	per 1000 SF	0.51	4.0	20.22	3.29	$19,023	$13,316
890	Furniture Store	0.45	per 1000 SF	0.47	4.0	0.85	0.14	$809	$567

Citywide Transportation Impact Fee

City of Redding

Department of Public Works

ITE Code	Description	Peak Hour Trips ITE Rate	Unit	Proportion of New Trips ITE	Average Trip Length SCTDM	Vehicle Miles Traveled VMT	Dwelling Unit Equivalent DUE's per Unit	Impact Fee Fee per Unit	Impact Fee within Downtown Specific Plan Fee per Unit
Services									
911	Walk-in Bank	12.13	per 1000 SF	0.49	4.0	23.70	3.85	$22,261	$15,582
912	Drive-in Bank	24.30	per 1000 SF	0.53	4.0	51.52	8.38	$48,453	$33,917
918	Hair Salon	1.45	per 1000 SF	0.66	4.0	3.83	0.62	$3,585	$2,509
925	Drinking Place	11.34	per 1000 SF	0.56	3.0	19.05	3.10	$17,924	$12,547
931	Quality Restaurant	7.49	per 1000 SF	0.56	5.0	20.97	3.41	$19,717	$13,802
932	High-Turnover (Sit-Down) Restaurant	9.85	per 1000 SF	0.57	5.0	28.07	4.56	$26,366	$18,456
932D	High-Turnover Restaurant w/Drive Thru	11.33	per 1000 SF	0.62	5.0	35.04	5.70	$32,957	$23,070
933	Fast-Food Restaurant w/o Drive-Thru	26.15	per 1000 SF	0.37	4.0	38.56	6.27	$36,253	$25,377
934	Fast-Food Restaurant w/ Drive-Thru	32.65	per 1000 SF	0.40	4.0	52.24	8.49	$49,089	$34,362
936	Coffee/Donut Shop w/o Drive-Thru	40.75	per 1000 SF	0.37	4.0	60.09	9.77	$56,490	$39,543
937	Coffee/Donut Shop w/ Drive-Thru	42.80	per 1000 SF	0.40	4.0	68.48	11.13	$64,354	$45,048
941	Quick Lubrication Vehicle Shop	5.19	per Serv Pos	0.57	4.0	11.83	1.92	$11,101	$7,771
942	Automobile Care Center	3.11	per 1000 SF	0.56	4.0	6.97	1.13	$6,534	$4,574
944	Gasoline/Service Station	13.87	per Fuel Pos	0.58	3.0	24.13	3.92	$22,665	$15,866
945	Gas Station w/ Con Market	13.51	per Fuel Pos	0.44	3.0	17.83	2.90	$16,768	$11,737
946	Gas Station w/ Con Market & Wash	13.86	per Fuel Pos	0.44	3.0	18.30	2.97	$17,173	$12,021
947	Self-Service Car Wash	5.54	per Stall	0.58	3.0	9.64	1.57	$9,078	$6,354
948	Automated Car Wash	14.12	per 1000 SF	0.58	3.0	24.57	3.99	$23,070	$16,149

Note: Use Latest Edition ITE PM Peak Hour of Adjacent Street Traffic Rates for other Land Uses not Referenced Above

Impact Fee = DUE's per Unit x Fee per Single Family DUE ($5816), where

DUE's per Unit = VMT (land use) / VMT (Single Family), where

VMT = ITE Peak Hr Trips per Unit x Proportion of New Trips x Average Trip Length

Downtown: 30 percent fee reduction for all land uses within the Downtown Specific Plan Area

Appendix B – Water

Exhibit Number	Pages	Function
1		Demographic Data
2		Growth Projections
3		Debt Allocation, Cash Reserves and Adjustments to System Buy-In Cost Basis
4		Summary of Planned Capital Facilities and Equipment for Consideration and Allocation (System Development)
5		Detail of Planned Capital Facilities and Equipment for Consideration and Allocation (System Development)
6		Unit Cost Calculation
7		Fee Classification and Calculation of Impact Fee

CITY OF REDDING
WATER IMPACT FEE STUDY UPDATE
Demographic Data

EXHIBIT 1

EXISTING AND PROJECTED NUMBER OF EQUIVALENT METERS:					
Meter Size	Existing Meters[1]	Current Equivalent Meters		Projected Equivalent Meters	
		Equivalency Relative to 5/8 inch Meter[1]	Equivalent Meters (EM's)	% Population Increase 2017/18-2027/28 [2]	Projected No. of EM's *(FY 2027/28)*
			(1)	*(2)*	*(3) = (1)x(2)*
5/8 inch	25,751	1.00	25,751	4.0%	26,781
3/4 inch	865	1.50	1,298	4.0%	1,349
1 inch	1,424	2.50	3,560	4.0%	3,702
1 1/2 inch	328	5.00	1,640	4.0%	1,706
2 inch	526	8.00	4,208	4.0%	4,376
3 inch	51	16.00	816	4.0%	849
4 inch	22	25.00	550	4.0%	572
6 inch	13	50.00	650	4.0%	676
8 inch	3	80.00	240	4.0%	250
10 inch	0	210.00	0	4.0%	0
12 inch	0	265.00	0	4.0%	0
Total	**28,983**	**--**	**38,713**	**--**	**40,261**

1. Source: City's billing records and meter factors (as of February 2016).
12" meter is estimated based on AWWA M6, Table 5-3 increase from 10" to 12" meters.
2. Projections From ITRON. City Staff to confirm data source.

BASIS FOR EXISTING AND PROJECTED SERVICE NUMBERS:

Allocation Factors for Existing and Future Water System Customers						
Demographic Statistics	Existing Total *(1)*	Projected Service Total in FY 2027/28 *(2)*	Cumulative Change		Allocation Factors	
			Number of Equivalent Meters	% Increase	Existing Customers	Future Customers
Equivalent Meters	**38,713**	**40,261**	1,549	4%	96%	**4%**

1. Per the City of Redding's utility billing data as of February 2016.
2. The projected equivalent meters is based on population growth estimates through FY 2027/28.

CITY OF REDDING
WATER IMPACT FEE STUDY UPDATE
Growth Projections

EXHIBIT 2

CITY OF REDDING WATER SERVICE AREA POPULATION ESTIMATES
From Redding Population Forecast (Table 1)

Year	Population[1]	Change in Population	% Change[2]
2017-18	92,282	--	--
2027-28	**95,656**	**3,374**	**4%**

1. Projections From ITRON as reported by City Staff.

2. Rounded to nearest %.

CITY OF REDDING **EXHIBIT 3**

WATER IMPACT FEE STUDY UPDATE

Debt and Cash Reserves Allocation to Existing and Future Services

OUTSTANDING DEBT SERVICE FOR WATER SYSTEM INFRASTRUCTURE & ASSETS:

Redding Joint Powers Financing Authority

Water Refunding Revenue Bonds, 2003 Series A

Fiscal Year	Principal	Interest	Total Annual Debt Service	NPV of Interest Payments[1]
2017/18	$ 555,000	$ 156,900	$ 711,900	$ 156,900
2018/19	570,000	134,700	704,700	130,777
2019/20	625,000	106,200	731,200	100,104
2020/21	650,000	81,200	731,200	74,310
2021/22	675,000	55,200	730,200	49,044
2022/23	705,000	28,200	733,200	24,326
Total	**$ 3,780,000**	**$ 562,400**	**$ 4,342,400**	**$ 535,460**

1. The Net Present Value of interest payments discounted at 3% per year.

Purpose of bonds:

The purpose of these bonds was to prepay the 1993 Water Installment Sale Agreement (for the Water Utility)

also to - refunds a portion of the Authority's Solid Waste & Corporation Yard Revenue Bonds 1993 Series A (the "Corporation Yard Bonds")

ALLOCATION OF DEBT TO EXISTING AND FUTURE USERS:

Issue: Water Refunding Revenue Bonds, 2003 Series A	Total Amount	Allocation %			Total	Allocation $			Total	( )
		Exclude from Analysis	Existing Users	Future Users		Exclude from Analysis	Existing Users	Future Users		
Outstanding Principal	$ 3,780,000	0%	49%	51%	100%	$ -	$ 1,834,812	$ 1,945,188	$ 3,780,000	1
Net Present Value of Future Interest Payments	$ 535,460	0%	49%	51%	100%	$ -	$ 259,912	$ 275,548	$ 535,460	2
Total	**$ 4,315,460**	**0%**	**49%**	**51%**	**100%**	**$ -**	**$ 2,094,724**	**$ 2,220,736**	**$ 4,315,460**	

1. Per City Staff estimates, the bond proceeds were used to fund capital projects that benefit exiting users 49% and future users (expansion related) 51%.

2. A portion of the outstanding debt is allocated to future customers connecting to the system, therefore, future customers percentage of outstanding principal and the NPV of outstanding interest payments are a cost added to the cost basis of the impact fee.

CASH RESERVES AND ALLOCATION TO EXISTING AND FUTURE USERS:

Cash Reserves	Balance as of 6/30/2017	% Allocation		$-Amount Allocation	
		Existing Services	Future Services	Existing Services	Future Services
Cash	$ 8,825,752	100%	0%	$ 8,825,752	$ -
Unrestricted Cash	18,138,752	100%	0%	18,138,752	-
Impact Fees	1,547,991	100%	0%	1,547,991	-
Total Cash Reserves	**$ 28,512,495**	**--**	**--**	**$ 28,512,495**	**$ -**

1. Ending FY 2016/17 Cash Balances provided by City Staff in the Water Proforma Working Version.xls file.

CITY OF REDDING **EXHIBIT 4**
WATER IMPACT FEE STUDY UPDATE
Summary of Planned Capital Facilities and Equipment for Consideration (System Development)

Project Category[1]	Costs of Planned System Development ($2017) through FY 2027/28	Allocation Basis (%)		Distribution of Cost Basis ($)	
		Existing Services	Future Services	Existing Services	Future Services
Miscellaneous Projects	$ 1,866,427	21%	79%	$ 395,245	$ 1,471,182
Piping	77,603,187	97%	3%	75,547,469	2,055,718
Pumps and Control Valves	5,524,269	100%	0%	5,524,269	-
Services	425,284	25%	75%	106,321	318,963
Tanks	7,226,827	61%	39%	4,402,902	2,823,925
Treatment Plants	22,261,464	100%	0%	22,261,464	-
Wells	8,668,011	100%	0%	8,668,011	-
Total Project Costs	**$ 123,575,469**	**95%**	**5%**	**$ 116,905,680**	**$ 6,669,788**

1. Project descriptions and cost data were provided by City Staff in the proforma for the Water utility.

CITY OF REDDING **EXHIBIT 5** **EXHIBIT 5**
WATER IMPACT FEE STUDY UPDATE
Detail of Planned Capital Facilities and Equipment for Consideration (System Development)

WATER CAPITAL OUTLAY
Division 869

Inflation Factor:	3.1%	*CCI 10 year average*
	0.0%	*No inflation factor used for Fee Update*

CIP Funding Choice: **Alternative #2: Reduced CIP**

Projects in Current Year Dollars ($2017) (1)	Proposed 17-18	Proposed 18-19	Projected 19-20	Projected 20-21	Projected 21-22	Projected 22-23	Projected 23-24	Projected 24-25	Projected 25-26	Projected 26-27	Projected 27-28	Projected 28-29	Projected 29-30	Projected 30-31	TOTAL (FY 2017/18 - 2030/31)	TOTAL (FY 2017/18 - 2027/28)
Projects allocated to Rates																
Miscellaneous Projects	42,500	41,600	42,077	27,965	41,241	27,965	40,454	27,965	47,548	27,965	27,965	45,834	27,965	27,965	**497,008**	**395,245**
Piping	6,966,440	4,422,969	1,870,505	2,147,500	6,420,472	5,584,840	6,242,375	7,664,307	11,339,547	10,861,432	12,027,081	13,514,126	15,017,799	16,333,761	**120,413,155**	**75,547,469**
Pumps and Control Valves	3,086,290	250,611	250,162	235,580	249,741	235,580	248,902	235,580	248,505	235,580	247,739	235,580	235,580	235,580	**6,231,009**	**5,524,269**
Services	9,665	9,665	9,666	9,666	9,666	9,666	9,666	9,666	9,666	9,666	9,666	9,666	9,666	9,666	**135,318**	**106,321**
Tanks	575,000	-	-	1,465,326	1,421,267	-	-	-	-	580,671	360,637	-	-	-	**4,402,902**	**4,402,902**
Treatment Plants	4,361,310	1,043,899	1,043,888	1,043,888	1,043,888	1,043,888	2,723,990	2,673,473	3,582,645	3,481,510	219,088	2,628,816	219,088	219,088	**25,328,455**	**22,261,464**
Wells	4,805,823	249,564	152,588	282,352	152,588	274,666	1,917,188	267,435	152,588	260,632	152,588	254,233	152,588	248,212	**9,323,044**	**8,668,011**
Total	*19,847,028*	*6,018,308*	*3,368,885*	*5,212,276*	*9,338,862*	*7,176,604*	*11,182,575*	*10,878,426*	*15,380,497*	*15,457,456*	*13,044,764*	*16,688,254*	*15,662,685*	*17,074,271*	**166,330,891**	**116,905,680**
Projects allocated to Fees																
Miscellaneous Projects	246,180	122,502	122,500	122,500	122,500	122,500	122,500	122,500	122,500	122,500	122,500	122,500	122,500	122,500	**1,838,682**	**1,471,182**
Piping	-	-	-	113,139	611,925	415,926	-	-	-	914,728	-	-	-	1,052,311	**3,108,029**	**2,055,718**
Pumps and Control Valves	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**	**-**
Services	28,995	28,996	28,997	28,997	28,997	28,997	28,997	28,997	28,997	28,997	28,997	28,997	28,997	28,997	**405,953**	**318,963**
Tanks	-	-	-	-	-	-	-	-	-	1,742,013	1,081,912	-	-	-	**2,823,925**	**2,823,925**
Treatment Plants	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**	**-**
Wells	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**	**-**
Total	*275,175*	*151,498*	*151,497*	*264,636*	*763,422*	*567,423*	*151,497*	*151,497*	*151,497*	*2,808,238*	*1,233,409*	*151,497*	*151,497*	*1,203,808*	**8,176,590**	**6,669,788**
Grand Total	**20,122,203**	**6,169,806**	**3,520,381**	**5,476,912**	**10,102,284**	**7,744,027**	**11,334,072**	**11,029,923**	**15,531,994**	**18,265,694**	**14,278,172**	**16,839,751**	**15,814,182**	**18,278,079**	**174,507,481**	**123,575,469**

1. Projects were reported in future year dollars. NBS has assumed that all projects will be calculated in current year dollars using the 10 year CCI inflation factor average. Data source: *Water Proforma Working Version.xls* .

CITY OF REDDING **EXHIBIT 5** **EXHIBIT 5**
WATER IMPACT FEE STUDY UPDATE
Detail of Planned Capital Facilities and Equipment for Consideration (System Development)

FUTURE YEAR DOLLARS

Object	CIP#	Project Type	Project Title	Rates	Fees	Proposed 17-18	Proposed 18-19	Projected 19-20	Projected 20-21	Projected 21-22	Projected 22-23	Projected 23-24	Projected 24-25	Projected 25-26	Projected 26-27	Projected 27-28	Projected 28-29	Projected 29-30	Projected 30-31	TOTAL (FY 2017/18 - 2030/31)
DISTRIBUTION SYSTEM																				
2111-01		Miscellaneous Projects	ILMS Permit Tracking	100%	0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3010-01		Miscellaneous Projects	Structures and Improvements	100%	0%	15,000	15,000	16,439	16,948	17,474	18,015	18,574	19,150	19,743	20,355	20,986	21,637	22,308	22,999	264,628
3020-01		Wells	Well Pumping Equipment	100%	0%	100,000	26,570	27,398	28,247	29,123	30,026	30,956	31,916	32,905	33,926	34,977	36,062	37,179	38,332	517,617
3020-02		Pumps and Control Valves	Pump Station Equipment	100%	0%	185,580	191,330	197,264	203,379	209,684	216,184	222,886	229,796	236,919	244,264	251,836	259,643	267,692	275,990	3,192,449
3020-03		Pumps and Control Valves	Pump House No. 1 Improvements	100%	0%	115,730	51,550	53,148	54,796	56,494	58,246	60,051	61,913	63,832	65,811	67,851	69,954	72,123	74,359	925,858
3020-04		Pumps and Control Valves	Pump House 1 Replacement Environmental	100%	0%	1,500,000	-	-	-	-	-	-	-	-	-	-	-	-	-	1,500,000
3030-01		Piping	Transmission and Distribution Mains	100%	0%	100,000	100,000	32,877	33,897	34,947	36,031	37,148	38,299	39,487	40,711	41,973	43,274	44,615	45,998	669,256
3040-01		Services	Services	25%	75%	7,730	7,970	8,219	8,474	8,737	9,008	9,287	9,575	9,872	10,178	10,493	10,818	11,154	11,500	133,014
3050-01		Services	Meters	25%	75%	30,930	31,890	32,877	33,897	34,947	36,031	37,148	38,299	39,487	40,711	41,973	43,274	44,615	45,998	532,076
3060-01		Piping	Hydrants	100%	0%	6,000	6,180	6,378	6,575	6,779	6,989	7,206	7,430	7,660	7,897	8,142	8,395	8,655	8,923	103,209
3065-01		Piping	Buckeye Hydrants	100%	0%	2,000	2,060	2,126	2,192	2,260	2,330	2,402	2,477	2,553	2,632	2,714	2,798	2,885	2,974	34,403
3100-01		Miscellaneous Projects	Land Acqu	0%	100%	123,680	-	-	-	-	-	-	-	-	-	-	-	-	-	123,680
3999-01		Miscellaneous Projects	Admin	0%	100%	60,000	61,860	63,778	65,755	67,793	69,895	72,061	74,295	76,599	78,973	81,421	83,945	86,548	89,231	1,032,154
4212-01		Wells	Electrical Control System Upgrade	100%	0%	93,040	69,080	71,234	73,443	75,719	78,067	80,487	82,982	85,554	88,206	90,941	93,760	96,667	99,663	1,178,842
4226-02		Piping	Placer St Waterline	100%	0%	281,390	-	-	-	-	-	-	-	-	-	-	-	-	-	281,390
4226-05		Miscellaneous Projects	Project Coordination	0%	100%	50,000	51,550	53,148	54,796	56,494	58,246	60,051	61,913	63,832	65,811	67,851	69,954	72,123	74,359	860,128
4285-04	W-2005-17	Piping	Twinview: 16" Oasis to Caterpillar	25%	75%	-	-	-	-	-	-	-	-	-	-	-	-	-	151,250	151,250
4286-01		Piping	Water Line Replacement	100%	0%	2,695,770	1,743,001	1,946,893	2,007,246	3,849,804	5,588,608	7,450,492	9,442,174	11,570,698	13,843,450	16,268,176	18,852,998	21,606,430	22,276,229	139,141,969
4286-02		Piping	Hill 900 PZ Waterline-Magnolia	100%	0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4286-03		Piping	Buckeye Area Water Main	100%	0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4286-07	CONV-07	Piping	24" Hill 900 to Buenaventura Conv7	100%	0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4286-13		Piping	Railroad Area Replacement	100%	0%	1,268,720	-	-	-	-	-	-	-	-	-	-	-	-	-	1,268,720
4286-14		Piping	Victor Ave Replacement	100%	0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4286-15		Wells	Keswick Dam Emergency Repair	100%	0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4286-16		Wells	Goodwater/Churn Creek	100%	0%	200,000	-	-	-	-	-	-	-	-	-	-	-	-	-	200,000
4287-2		Treatment Plants	MS4 System Maintenance	100%	0%	218,330	114,270	117,811	121,463	125,228	129,110	133,113	137,239	141,493	145,880	150,402	155,065	159,872	164,828	2,014,102
4338-02	W-2009-14	Wells	Existing Wells- Redevelop (well 10)	100%	0%	162,210	100,000	-	142,210	-	142,210	-	142,210	-	142,210		142,210		142,210	1,115,470
4338-03		Wells	Well Upgrades	100%	0%	1,376,580	61,650	63,563	65,533	67,565	69,659	71,819	74,045	76,341	78,707	81,147	83,663	86,256	88,930	2,345,459
4338-04		Wells	Wellhead Treatment	100%	0%	2,873,993	-	-	-	-	-	-	-	-	-	-	-	-	-	2,873,993
4397-01	W-2007-05	Miscellaneous Projects	Master Water Plan Update	50%	50%	25,000	25,780	26,574	27,398	28,247	29,123	30,026	30,956	31,916	32,905	33,926	34,977	36,062	37,179	430,069
44920-1	W-2009-10	Treatment Plants	Foothill Upgrades	100%	0%	3,713,290	850,370	876,730	903,909	931,930	960,820	990,605	1,021,314	-	-	-	-	-	-	10,248,968
4600-02	W-2009-04	Pumps and Control Valves	Cypress Ave Booster Pump Station (2348)	100%	0%	1,269,480	-	-	-	-	-	-	-	-	-	-	-	-	-	1,269,480
4606-01	W-2009-08	Treatment Plants	Buckeye Treatment Plant	100%	0%	429,690	111,620	115,071	118,638	122,316	126,108	130,017	134,047	138,203	142,487	146,904	151,458	156,154	160,994	2,183,708
4733-02	W-2009-16	Piping	S Bonnyview Bridge pipe realignment	100%	0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4733-03		Pumps and Control Valves	PR Valve Relocate	100%	0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4775-03		Piping	Old Alturas Widening	100%	0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4795-05	W-2009-20	Tanks	Reservoir Maintenance	100%	0%	475,000	-	-	-	-	-	-	-	-	-	-	-	-	-	475,000
4795-03	S-01	Tanks	Hill 900 Storage - New 3.0 MG Reservoir	100%	0%	-	-	-	1,605,870	1,605,870	-	-	-	-	-	-	-	-	-	3,211,740
5711-01		Pumps and Control Valves	PC Equipment	100%	0%	15,500	15,500	15,500	-	16,000	-	16,000	-	16,500	-	16,500	-	-	-	111,500
5889-01		Miscellaneous Projects	Equipment	100%	0%	15,000	15,000	15,000	-	15,000	-	15,000	-	25,000	-	-	25,000	-	-	125,000
		Tanks	Enterprise Reservoir Repairs	100%	0%	100,000	-	-	-	-	-	-	-	-	-	-	-	-	-	100,000
	CONV-13	Piping	16" Twin View - B8-V24 to Oasis Cntr 5630'	70%	30%	-	-	-	-	-	-	-	-	-	-	-	-	-	2,392,350	2,392,350
	CONV-04	Piping	24" Lake - Oasis to Northpoint 9090'	100%	0%	2,612,560	2,708,840	-	-	-	-	-	-	-	-	-	-	-	-	5,321,400
	CONV-02	Piping	20" Oasis - UPRR to Beltline 1225'	80%	20%	-	-	-	-	1,026,635	-	-	-	-	-	-	-	-	-	1,026,635
	CONV-14	Tanks	New Buckeye Tank 3.5 MG at Herbscenta	25%	75%	-	-	-	-	-	-	-	-	-	1,957,570	1,957,570	-	-	-	3,915,140
	CONV-15	Tanks	30" New Buckeye Tank to Quartz Hill Rd 3275'	25%	75%	-	-	-	-	-	-	-	-	-	1,099,589	-	-	-	-	1,099,589
	CONV-03	Piping	20" Oasis - Calexico to A6-V1 1600'	57%	43%	-	-	-	-	-	807,862	-	-	-	-	-	-	-	-	807,862
	CONV-01	Piping	20" Beltline - Oasis to Mtn Lakes 1013'	75%	25%	-	-	-	-	-	548,548	-	-	-	-	-	-	-	-	548,548
	EWT-02.2	Piping	Construct blending pipeline for EW13 & EW14	100%	0%	-	-	-	-	2,377,278	-	-	-	-	-	-	-	-	-	2,377,278
	CONV-16	Piping	24" Quartz Hill to Keswick Dam Rd 1485'	25%	75%	-	-	-	-	-	-	-	-	-	1,605,310	-	-	-	-	1,605,310
	CONV-09	Piping	20" Lake - Northpoint to Masonic 1220'	71%	29%	-	-	-	427,552	-	-	-	-	-	-	-	-	-	-	427,552
	EWT-03	Treatment Plants	Install oxidation/filtration at EW14 - Manganese	100%	0%	-	-	-	-	-	-	2,017,845	2,017,845	-	-	-	-	-	-	4,035,690
	CONV-10	Piping	16" Masonic to Hilltop	25%	75%	-	-	-	-	648,105	-	-	-	-	-	-	-	-	-	648,105
	EWT-05	Piping	Construct pipeline from EW12 to EW14 to blend	100%	0%	-	-	-	-	-	-	-	-	2,856,150	-	-	-	-	-	2,856,150
	W-01	Wells	Rehab EW11 or construct new well	100%	0%	-	-	-	-	-	-	2,119,328	-	-	-	-	-	-	-	2,119,328
	CONV-17	Piping	16" Caterpillar - Twin View under I-5 650'	25%	75%	-	-	-	-	-	-	-	-	-	-	-	-	-	978,440	978,440
	EWT-06	Treatment Plants	Expand Treatment at EW14 to treat EW12 flows	100%	0%	-	-	-	-	-	-	-	-	-	-	-	3,371,424	-	-	3,371,424
	FH-13	Treatment Plants	Foothill WTP	100%	0%	-	-	-	-	-	-	-	-	4,294,060	4,294,060	-	-	-	-	8,588,121
Subtotal Replacement Projects - Rates						**19,847,028**	**6,204,876**	**3,580,993**	**5,712,200**	**10,551,850**	**8,360,116**	**13,430,550**	**13,470,283**	**19,635,397**	**20,345,389**	**17,702,022**	**23,348,352**	**22,592,808**	**25,392,462**	**210,174,326**
Subtotal Expansion Projects - Impact Fees						**275,175**	**156,195**	**161,035**	**290,017**	**862,580**	**660,998**	**181,952**	**187,592**	**193,407**	**3,696,255**	**1,673,762**	**211,958**	**218,528**	**1,790,275**	**10,559,730**
Total Water Utility Capital Projects						**20,122,203**	**6,361,070**	**3,742,028**	**6,002,218**	**11,414,430**	**9,021,115**	**13,612,502**	**13,657,875**	**19,828,805**	**24,041,644**	**19,375,784**	**23,560,309**	**22,811,336**	**27,182,738**	**220,734,056**

CITY OF REDDING **EXHIBIT 5** **EXHIBIT 5**
WATER IMPACT FEE STUDY UPDATE
Detail of Planned Capital Facilities and Equipment for Consideration (System Development)

CURRENT YEAR DOLLARS ($2017)

			Inflation Factor:			1	1.03	1.06	1.10	1.13	1.16	1.20	1.24	1.28	1.32	1.36	1.40	1.44	1.49	
Object	CIP#	Project Type	Project Title	Rates	Fees	Proposed 17-18	Proposed 18-19	Projected 19-20	Projected 20-21	Projected 21-22	Projected 22-23	Projected 23-24	Projected 24-25	Projected 25-26	Projected 26-27	Projected 27-28	Projected 28-29	Projected 29-30	Projected 30-31	TOTAL (FY 2017/18 - 2030/31)
DISTRIBUTION SYSTEM																				
2111-01	0	Miscellaneous Projects	ILMS Permit Tracking	100%	0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3010-01	0	Miscellaneous Projects	Structures and Improvements	100%	0%	15,000	14,549	15,465	15,465	15,465	15,465	15,465	15,465	15,465	15,465	15,465	15,465	15,465	15,465	215,129
3020-01	0	Wells	Well Pumping Equipment	100%	0%	100,000	25,771	25,775	25,775	25,775	25,775	25,775	25,775	25,775	25,775	25,775	25,775	25,775	25,775	435,071
3020-02	0	Pumps and Control Valves	Pump Station Equipment	100%	0%	185,580	185,577	185,580	185,580	185,580	185,580	185,580	185,580	185,580	185,580	185,580	185,580	185,580	185,580	2,598,117
3020-03	0	Pumps and Control Valves	Pump House No. 1 Improvements	100%	0%	115,730	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	765,730
3020-04	0	Pumps and Control Valves	Pump House 1 Replacement Environmental	100%	0%	1,500,000	-	-	-	-	-	-	-	-	-	-	-	-	-	1,500,000
3030-01	0	Piping	Transmission and Distribution Mains	100%	0%	100,000	96,993	30,930	30,930	30,930	30,930	30,930	30,930	30,930	30,930	30,930	30,930	30,930	30,930	568,153
3040-01	0	Services	Services	25%	75%	7,730	7,730	7,733	7,733	7,733	7,733	7,733	7,733	7,733	7,733	7,733	7,733	7,733	7,733	108,250
3050-01	0	Services	Meters	25%	75%	30,930	30,931	30,930	30,930	30,930	30,930	30,930	30,930	30,930	30,930	30,930	30,930	30,930	30,930	433,021
3060-01	0	Piping	Hydrants	100%	0%	6,000	5,994	6,000	6,000	6,000	6,000	6,000	6,000	6,000	6,000	6,000	6,000	6,000	6,000	83,994
3065-01	0	Piping	Buckeye Hydrants	100%	0%	2,000	1,998	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	27,998
3100-01	0	Miscellaneous Projects	Land Accqu	0%	100%	123,680	-	-	-	-	-	-	-	-	-	-	-	-	-	123,680
3999-01	0	Miscellaneous Projects	Admin	0%	100%	60,000	60,000	60,000	60,000	60,000	60,000	60,000	60,000	60,000	60,000	60,000	60,000	60,000	60,000	840,000
4212-01	0	Wells	Electrical Control System Upgrade	100%	0%	93,040	67,003	67,015	67,015	67,015	67,015	67,015	67,015	67,015	67,015	67,015	67,015	67,015	67,015	964,223
4226-02	0	Piping	Placer St Waterline	100%	0%	281,390	-	-	-	-	-	-	-	-	-	-	-	-	-	281,390
4226-05	0	Miscellaneous Projects	Project Coordination	0%	100%	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	700,000
4285-04	W-2005-17	Piping	Twinview: 16" Oasis to Caterpillar	25%	75%	-	-	-	-	-	-	-	-	-	-	-	-	-	101,703	101,703
4286-01	0	Piping	Water Line Replacement	100%	0%	2,695,770	1,690,592	1,831,575	1,831,575	3,407,250	4,797,449	6,203,445	7,625,377	9,063,381	10,517,593	11,988,151	13,475,196	14,978,869	14,978,869	105,085,093
4286-02	0	Piping	Hill 900 PZ Waterline-Magnolia	100%	0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4286-03	0	Piping	Buckeye Area Water Main	100%	0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4286-07	CONV-07	Piping	24" Hill 900 to Buenaventura Conv7	100%	0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4286-13	0	Piping	Railroad Area Replacement	100%	0%	1,268,720	-	-	-	-	-	-	-	-	-	-	-	-	-	1,268,720
4286-14	0	Piping	Victor Ave Replacement	100%	0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4286-15	0	Wells	Keswick Dam Emergency Repair	100%	0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4286-16	0	Wells	Goodwater/Churn Creek	100%	0%	200,000	-	-	-	-	-	-	-	-	-	-	-	-	-	200,000
4287-2	0	Treatment Plants	MS4 System Maintenance	100%	0%	218,330	110,834	110,833	110,833	110,833	110,833	110,833	110,833	110,833	110,833	110,833	110,833	110,833	110,833	1,659,154
4338-02	W-2009-14	Wells	Existing Wells- Redevelop (well 10)	100%	0%	162,210	96,993	-	129,764	-	122,078	-	114,847	-	108,044	-	101,645	-	95,624	931,205
4338-03	0	Wells	Well Upgrades	100%	0%	1,376,580	59,796	59,798	59,798	59,798	59,798	59,798	59,798	59,798	59,798	59,798	59,798	59,798	59,798	2,153,952
4338-04	0	Wells	Wellhead Treatment	100%	0%	2,873,993	-	-	-	-	-	-	-	-	-	-	-	-	-	2,873,993
4397-01	W-2007-05	Miscellaneous Projects	Master Water Plan Update	50%	50%	25,000	25,005	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	350,005
44920-1	W-2009-10	Treatment Plants	Foothill Upgrades	100%	0%	3,713,290	824,801	824,800	824,800	824,800	824,800	824,800	824,800	-	-	-	-	-	-	9,486,891
4600-02	W-2009-04	Pumps and Control Valves	Cypress Ave Booster Pump Station (2348)	100%	0%	1,269,480	-	-	-	-	-	-	-	-	-	-	-	-	-	1,269,480
4606-01	W-2009-08	Treatment Plants	Buckeye Treatment Plant	100%	0%	429,690	108,264	108,255	108,255	108,255	108,255	108,255	108,255	108,255	108,255	108,255	108,255	108,255	108,255	1,837,014
4733-02	W-2009-16	Piping	S Bonnyview Bridge pipe realignment	100%	0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4733-03	0	Pumps and Control Valves	PR Valve Relocate	100%	0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4775-03	0	Piping	Old Alturas Widening	100%	0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4795-05	W-2009-20	Tanks	Reservoir Maintenance	100%	0%	475,000	-	-	-	-	-	-	-	-	-	-	-	-	-	475,000
4795-03	S-01	Tanks	Hill 900 Storage - New 3.0 MG Reservoir	100%	0%	-	-	-	1,465,326	1,421,267	-	-	-	-	-	-	-	-	-	2,886,594
5711-01	0	Pumps and Control Valves	PC Equipment	100%	0%	15,500	15,034	14,582	-	14,161	-	13,322	-	12,925	-	12,159	-	-	-	97,682
5889-01	0	Miscellaneous Projects	Equipment	100%	0%	15,000	14,549	14,112	-	13,276	-	12,489	-	19,583	-	-	17,869	-	-	106,877
0	0	Tanks	Enterprise Reservoir Repairs	100%	0%	100,000	-	-	-	-	-	-	-	-	-	-	-	-	-	100,000
0	CONV-13	Piping	16" Twin View - B8-V24 to Oasis Cntr 5630'	70%	30%	-	-	-	-	-	-	-	-	-	-	-	-	-	1,608,652	1,608,652
0	CONV-04	Piping	24" Lake - Oasis to Northpoint 9090'	100%	0%	2,612,560	2,627,391	-	-	-	-	-	-	-	-	-	-	-	-	5,239,951
0	CONV-02	Piping	20" Oasis - UPRR to Beltline 1225'	80%	20%	-	-	-	-	908,618	-	-	-	-	-	-	-	-	-	908,618
0	CONV-14	Tanks	New Buckeye Tank 3.5 MG at Herbscenta	25%	75%	-	-	-	-	-	-	-	-	-	1,487,268	1,442,549	-	-	-	2,929,818
0	CONV-15	Tanks	30" New Buckeye Tank to Quartz Hill Rd 3275'	25%	75%	-	-	-	-	-	-	-	-	-	835,416	-	-	-	-	835,416
0	CONV-03	Piping	20" Oasis - Calexico to A6-V1 1600'	57%	43%	-	-	-	-	-	693,496	-	-	-	-	-	-	-	-	693,496
0	CONV-01	Piping	20" Beltline - Oasis to Mtn Lakes 1013'	75%	25%	-	-	-	-	-	470,892	-	-	-	-	-	-	-	-	470,892
0	EWT-02.2	Piping	Construct blending pipeline for EW13 & EW14	100%	0%	-	-	-	-	2,103,998	-	-	-	-	-	-	-	-	-	2,103,998
0	CONV-16	Piping	24" Quartz Hill to Keswick Dam Rd 1485'	25%	75%	-	-	-	-	-	-	-	-	-	1,219,638	-	-	-	-	1,219,638
0	CONV-09	Piping	20" Lake - Northpoint to Masonic 1220'	71%	29%	-	-	-	390,133	-	-	-	-	-	-	-	-	-	-	390,133
0	EWT-03	Treatment Plants	Install oxidation/filtration at EW14 - Manganese	100%	0%	-	-	-	-	-	-	1,680,103	1,629,585	-	-	-	-	-	-	3,309,688
0	CONV-10	Piping	16" Masonic to Hilltop	25%	75%	-	-	-	-	573,602	-	-	-	-	-	-	-	-	-	573,602
0	EWT-05	Piping	Construct pipeline from EW12 to EW14 to blend	100%	0%	-	-	-	-	-	-	-	-	2,237,236	-	-	-	-	-	2,237,236
0	W-01	Wells	Rehab EW11 or construct new well	100%	0%	-	-	-	-	-	-	1,764,600	-	-	-	-	-	-	-	1,764,600
0	CONV-17	Piping	16" Caterpillar - Twin View under I-5 650'	25%	75%	-	-	-	-	-	-	-	-	-	-	-	-	-	657,918	657,918
0	EWT-06	Treatment Plants	Expand Treatment at EW14 to treat EW12 flows	100%	0%	-	-	-	-	-	-	-	-	-	-	-	2,409,728	-	-	2,409,728
0	FH-13	Treatment Plants	Foothill WTP	100%	0%	-	-	-	-	-	-	-	-	3,363,557	3,262,422	-	-	-	-	6,625,979
Subtotal Replacement Projects - Rates						**19,847,028**	**6,018,308**	**3,368,885**	**5,212,276**	**9,338,862**	**7,176,604**	**11,182,575**	**10,878,426**	**15,380,497**	**15,457,456**	**13,044,764**	**16,688,254**	**15,662,685**	**17,074,271**	**166,330,891**
Subtotal Expansion Projects - Impact Fees						**275,175**	**151,498**	**151,497**	**264,636**	**763,422**	**567,423**	**151,497**	**151,497**	**151,497**	**2,808,238**	**1,233,409**	**151,497**	**151,497**	**1,203,808**	**8,176,590**
Total Water Utility Capital Projects						**20,122,203**	**6,169,806**	**3,520,381**	**5,476,912**	**10,102,284**	**7,744,027**	**11,334,072**	**11,029,923**	**15,531,994**	**18,265,694**	**14,278,172**	**16,839,751**	**15,814,182**	**18,278,079**	**174,507,481**

CITY OF REDDING
WATER IMPACT FEE STUDY UPDATE
Unit Cost Calculation

EXHIBIT 6

Alternative #2: Reduced CIP

System Asset Values Allocated to Future Development and Calculated New Water Impact Fee	Impact Fee w/o Buy-In Component[7]	*Comments*
System Asset Values Allocated to New Development		
Existing System Buy-In[1]	$ -	
Future System Expansion[2]	$ 6,669,000	*7.0% Allocation to Growth (per City Proforma)*
Total: Existing & Future System Costs	$ 6,669,000	
Adjustments to Cost Basis:		
Future Customer's Share of Outstanding Debt[3]	$ -	*Excluded because these are existing system assets, and buy-in costs are excluded from this analysis*
Cash Reserves[4]	$ -	
Total: Adjustments to Cost Basis	$ -	
Total Adjusted Cost Basis for New Development	**$ 6,669,000**	
Projected New Equivalent Meters (through FY 2027/28) [5]	*1,549*	
Calculated New Water Impact Fee ($/Equivalent 5/8 in Meter)[6]	**$ 4,300**	

1. *Buy-In component excluded in this analysis. This is consistent with the City's previous impact fee methodology.*
2. *Refer to Exhibits 4 & 5 for a detailed list of planned capital projects.*
3. *Refer to Exhibit 3. The City assumes that 51% of the debt service will be paid using impact fee revenues, so this amount is an additional asset cost that should be included in the impact fee calculation.*
4. *Available cash reserves allocated to future customers. Refer to Exhibit 3.*
5. *Allocation Basis: Refer to Exhibit 1.*
6. *Adjusted System Costs divided by Equivalent 5/8" Meters, rounded down to nearest $100 increment.*
7. *Existing System Buy-In and Cash Reserves (less unspent Impact Fees) were excluded. This is consistent with the City's previous impact fee methodology.*

CITY OF REDDING
WATER IMPACT FEE STUDY UPDATE
Updated Impact Fee

EXHIBIT 7

Fee Calculation

Meter Size	Equivalency to Base Meter Size	Unit Cost	Updated Impact Fee Per Meter	Existing Impact Fee Per Meter (2017)	$ Change	% Change
5/8 inch	1.00	$4,300	**$4,300**	$ 5,893.00	-$1,593	-27%
3/4 inch	1.50	$4,300	**$6,450**	$ 8,839.50	-$2,390	-27%
1 inch	2.50	$4,300	**$10,750**	$ 14,732.50	-$3,983	-27%
1 1/2 inch	5.00	$4,300	**$21,500**	$ 29,465.00	-$7,965	-27%
2 inch	8.00	$4,300	**$34,400**	$ 47,144.00	-$12,744	-27%
3 inch	16.00	$4,300	**$68,800**	$ 94,288.00	-$25,488	-27%
4 inch	25.00	$4,300	**$107,500**	$ 147,325.00	-$39,825	-27%
6 inch	50.00	$4,300	**$215,000**	$ 294,650.00	-$79,650	-27%
8 inch	80.00	$4,300	**$344,000**	$ 471,440.00	-$127,440	-27%
10 inch	145.00	$4,300	**$623,500**	$ 854,485.00	-$230,985	-27%
12 inch	215.00	$4,300	**$924,500**	$ 1,266,995.00	-$342,495	-27%

Appendix C – Wastewater

Exhibit Number	Pages	Function
1		Demographic Data
2		Growth Projections
3		Debt Allocation, Cash Reserves and Adjustments to System Buy-In Cost Basis
4		Detailed Debt Service Schedules for Outstanding Debt
5		Summary of Planned Capital Facilities and Equipment for Consideration and Allocation (System Development)
6		Detail of Planned Capital Facilities and Equipment for Consideration and Allocation (System Development)
7		Unit Cost Calculation
8		Fee Classification and Calculation of Impact Fee

CITY OF REDDING **EXHIBIT 1**

WASTEWATER IMPACT FEE STUDY UPDATE

Demographic Data and Projections

CUSTOMER STATISTICS:

Current and Projected Number of Sewer HE's through FY 2027/28					
Sewer Customer Class	**No. of Accounts[1]** *(2016)*	**No. of Sewer HE Units[1]** *(2016)*	**% Population Increase FY 2017/18 - FY 2027/28** [2]	**Projected No. of Sewer HE Units** *(2022)*	
Residential		*(1)*	*(2)*	*(3) = (1)x(2)*	*(Add'l HE's)*
Single-Family Residential	22,976	22,976	4%	23,895	*919*
Multi-Family Residential	11,639	11,639	4%	12,105	*466*
Non-Residential					
Commercial, No Food	2,543	8,276	4%	8,607	*331*
Commercial, Food Prep	223	1,576	4%	1,639	*63*
Industrial	137	305	4%	317	*12*
Other	67	1,215	4%	1,264	*49*
Unknown	1	1	4%	1	*0*
Total Number of Accounts	**37,586**	**45,988**	**--**	**47,828**	*1,840*

1. Number of accounts and household equivalent units (HE's) as of April 2016, per the City's utility billing data.

2. Projections From ITRON. City Staff to confirm data source.

BASIS FOR EXISTING AND PROJECTED SERVICE NUMBERS:

Allocation Factors for Existing and Future Sewer System Service Units						
Demographic Statistics	**Existing Total**	**Projected Service Total[1]**	**Cumulative Change**		**Allocation Factors**	
			Number of HEs	**% Increase**	**Existing Services**	**Future Services**
Household Equivalents (HEs)	**45,988**	**47,828**	1,840	4%	96%	**4%**

1. Projected FY 2027/28 service total based on based on population growth estimates through FY 2027/28.

CITY OF REDDING
WASTEWATER IMPACT FEE STUDY UPDATE
Population Projections

EXHIBIT 2

CITY OF REDDING WATER SERVICE AREA POPULATION ESTIMATES
From Redding Population Forecast (Table 1)

Year	Population[1]	Change in Population	% Change
2017-18	92,282	--	--
2027-28	**95,656**	**3,374**	**3.7%**

1. Projections From ITRON. City Staff to confirm data source.

ALLOCATION OF *(EXISTING)* OUTSTANDING PRINCIPAL TO EXISTING AND FUTURE USERS:

Issue	Outstanding Principal *through* FY 2027/28	Allocation %[1]		Allocation $[1]	
		Existing Users	Future Users	Existing Users	Future Users[2]
Wastewater Refunding Revenue Bonds 2002 Series A	$ 2,990,000	100%	0%	$ 2,990,000	$ -
CA SWRCB SRF Agreement #00809-550-0	6,121,989	67%	33%	4,101,732	2,020,256
CA SWRCB SRF Agreement #06803-550-0	2,637,844	77%	23%	2,031,140	606,704
CA SWRCB SRF Agreement #07819-550-0	2,986,928	77%	23%	2,299,934	686,993
CA SWRCB SRF Agreement #07826-550-0	10,858,379	77%	23%	8,360,952	2,497,427
CA SWRCB SRF Agreement #11809-550-0	5,099,440	0%	100%	-	5,099,440
CA SWRCB SRF Agreement #10807-550-0	682,001	67%	33%	456,941	225,060
Clear Creek WWTP Expansion, Agreement #11810	3,051,551	77%	23%	2,349,694	701,857
CA SWRCB SRF Agreement #09824-550-0	5,689,363	77%	23%	4,380,809	1,308,553
CA SWRCB SRF Agreement #11800-550-0	9,638,026	50%	50%	4,819,013	4,819,013
CA SWRCB SRF Agreement #10802-550-1	928,618	65%	35%	603,602	325,016
CA SWRCB SRF Agreement #11849-550-0	6,466,238	75%	25%	4,849,678	1,616,559
CA SWRCB SRF Agreement #13836-550-0	3,657,735	75%	25%	2,743,301	914,434
Total	**$ 60,808,111**	**66%**	**34%**	**$ 39,986,797**	**$ 20,821,314**
Less: Unspent Impact Fees	**$ (10,526,963)**	**0%**	**100%**	**$ -**	**$ (10,526,963)**
Total Outstanding Principal Net of Unspent Impact Fees[3]	**$ 50,281,148**	**80%**	**20%**	**$ 39,986,797**	**$ 10,294,351**

1. Allocation of outstanding bond principal to existing and future users is per City Staff estimates.
2. A portion of each outstanding loan is allocated to future customers, therefore the outstanding principal is added to the cost basis of the impact fee.
3. Per direction from City Staff, unspent impact fees held in reserve are allocated as a credit to future customers connecting to the system.

ALLOCATION OF *(EXISTING)* NET PRESENT VALUE OF INTEREST TO EXISTING AND FUTURE USERS:

Issue	NPV of Interest Payments *through* FY 2027/28[1]	Allocation %[2]		Allocation $[2]	
		Existing Users	Future Users	Existing Users	Future Users[3]
Wastewater Refunding Revenue Bonds 2002 Series A	$ 211,100	100%	0%	$ 211,100	$ -
CA SWRCB SRF Agreement #00809-550-0[4]	553,212	67%	33%	370,652	182,560
CA SWRCB SRF Agreement #06803-550-0[4]	335,319	77%	23%	258,196	77,123
CA SWRCB SRF Agreement #07819-550-0[4]	488,757	77%	23%	376,343	112,414
CA SWRCB SRF Agreement #07826-550-0[4]	2,232,517	77%	23%	1,719,038	513,479
CA SWRCB SRF Agreement #11809-550-0[4]	1,048,461	0%	100%	-	1,048,461
CA SWRCB SRF Agreement #10807-550-0	166,208	67%	33%	111,360	54,849
Clear Creek WWTP Expansion, Agreement #11810	986,678	77%	23%	759,742	226,936
CA SWRCB SRF Agreement #09824-550-0	485,585	77%	23%	373,900	111,684
CA SWRCB SRF Agreement #11800-550-0	2,821,633	50%	50%	1,410,817	1,410,817
CA SWRCB SRF Agreement #10802-550-1	226,311	65%	35%	147,102	79,209
CA SWRCB SRF Agreement #11849-550-0	1,734,091	75%	25%	1,300,568	433,523
CA SWRCB SRF Agreement #13836-550-0	1,108,496	75%	25%	831,372	277,124
Total	**$ 12,398,367**	**63%**	**37%**	**$ 7,870,189**	**$ 4,528,178**

1. The Net Present Value of interest payments are calculated using a 3% discount rate.

CITY OF REDDING **EXHIBIT 3**

WASTEWATER IMPACT FEE STUDY UPDATE

Debt and Cash Reserves Allocation to Existing and Future Services

2. Allocation of the NPV of Interest payments to existing and future users is per City Staff estimates.
3. Portions of future loans are allocated to future customers, and the NPV of future interest payments (and service charges) is added to the cost basis of the impact fee.
4. NPV of interest payments include service charges, per City Staff.

CASH RESERVES AND ALLOCATION TO EXISTING AND FUTURE USERS:					
Cash Reserves	Balance as of 06/30/2017	% Allocation		$-Amount Allocation	
		Existing Services	Future Services	Existing Services	Future Services
Restricted Cash (Loan Reserve)	$ 4,026,663	100%	0%	$ 4,026,663	$ -
Unrestricted Cash	$ 24,430,844	100%	0%	24,430,844	-
Impact Fees	$ 10,526,963	100%	0%	10,526,963	-
Total Cash Reserves	**$ 38,984,470**	**--**	**--**	**$ 38,984,470**	**$ -**
Cash Net of Unspent Connection Fees	**$ 28,457,507**				

1. Cash Balances provided by City Staff in WW proforma Working Version.xls.

Allocation of Cash to Existing and Future Users	Cash Balance	% Allocation		$-Amount Allocation	
		Existing Services	Future Services	Existing Services	Future Services
Cash Net of Unspent Connection Fees	**$ 28,457,507**				
Growth Statistics		100%	0%	$ 28,457,507	$ -

CITY OF REDDING

WASTEWATER IMPACT FEE STUDY UPDATE

Debt Service Detail

EXHIBIT 4

DEBT SERVICE SCHEDULES FOR OUTSTANDING BOND ISSUES:

Debt Issue	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Wastewater Refunding Revenue Bonds 2002 Series A											
Principal Payment	$ 1,465,000	$ 1,525,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Interest Payment	134,850	76,250	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Total Payment	**$ 1,599,850**	**$ 1,601,250**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**
Total Outstanding Principal thru 2028	***$ 2,990,000***										
Year	*0*	0	1	2	3	4	5	6	7	8	9
NPV of Interest Payments	*$ 134,850*	*$ 76,250*	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Total NPV of Interest Payments thru 2028	***$ 211,100***										
CA SWRCB SRF Agreement #00809-550-0											
Principal Payment	$ 955,995	$ 980,851	$ 1,006,353	$ 1,032,518	$ 1,059,364	$ 1,086,907	$ -	$ -	$ -	$ -	$ -
Interest Payment	$ 97,952	$ 82,656	$ 66,962	$ 50,861	$ 34,340	$ 17,391	$ -	$ -	$ -	$ -	$ -
Service Charge	$ 61,220	$ 51,660	$ 41,851	$ 31,788	$ 21,463	$ 10,869	$ -	$ -	$ -	$ -	$ -
Total Payment	**$ 1,115,167**	**$ 1,115,167**	**$ 1,115,167**	**$ 1,115,167**	**$ 1,115,167**	**$ 1,115,167**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**
Total Outstanding Principal thru 2028	***$ 6,121,989***										
Year	*0*	0	1	2	3	4	5	6	7	8	9
NPV of Interest Payments and Service Charge	*$ 159,172*	*$ 134,316*	$ 105,644	$ 77,904	$ 51,068	$ 25,108	$ -	$ -	$ -	$ -	$ -
Total NPV of Interest Payments thru 2028	***$ 553,212***										
CA SWRCB SRF Agreement #06803-550-0											
Principal Payment	$ 214,573	$ 219,293	$ 224,118	$ 229,048	$ 234,087	$ 239,237	$ 244,500	$ 249,879	$ 255,377	$ 260,995	$ 266,737
Interest Payment	$ 31,654	$ 29,079	$ 26,448	$ 23,758	$ 21,010	$ 18,201	$ 15,330	$ 12,396	$ 9,397	$ 6,333	$ 3,201
Service Charge	$ 26,378	$ 24,233	$ 22,040	$ 19,799	$ 17,508	$ 15,167	$ 12,775	$ 10,330	$ 7,831	$ 5,277	$ 2,667
Total Payment	**$ 272,605**	**$ 272,605**	**$ 272,605**	**$ 272,605**	**$ 272,605**	**$ 272,605**	**$ 272,605**	**$ 272,605**	**$ 272,605**	**$ 272,605**	**$ 272,605**
Total Outstanding Principal thru 2028	***$ 2,637,844***										
Year	*0*	0	1	2	3	4	5	6	7	8	9
NPV of Interest Payments and Service Charge	*$ 58,033*	*$ 53,312*	$ 47,075	$ 41,057	$ 35,249	$ 29,647	$ 24,243	$ 19,032	$ 14,008	$ 9,165	$ 4,497
Total NPV of Interest Payments thru 2028	***$ 335,319***										
CA SWRCB SRF Agreement #07819-550-0											
Principal Payment	$ 240,498	$ 246,270	$ 252,180	$ 258,233	$ 264,430	$ 270,777	$ 277,275	$ 283,930	$ 290,744	$ 297,722	$ 304,868
Interest Payment	$ 46,188	$ 42,821	$ 39,373	$ 35,842	$ 32,227	$ 28,525	$ 24,734	$ 20,852	$ 16,877	$ 12,807	$ 8,639
Service Charge	$ 32,991	$ 30,586	$ 28,123	$ 25,602	$ 23,019	$ 20,375	$ 17,667	$ 14,894	$ 12,055	$ 9,148	$ 6,171
Total Payment	**$ 319,677**	**$ 319,677**	**$ 319,677**	**$ 319,677**	**$ 319,677**	**$ 319,677**	**$ 319,677**	**$ 319,677**	**$ 319,677**	**$ 319,677**	**$ 319,677**
Total Outstanding Principal thru 2028	***$ 2,986,928***										
Year	*0*	0	1	2	3	4	5	6	7	8	9
NPV of Interest Payments and Service Charge	*$ 79,179*	*$ 73,407*	$ 65,530	$ 57,917	$ 50,558	$ 43,447	$ 36,576	$ 29,937	$ 23,525	$ 17,331	$ 11,350
Total NPV of Interest Payments thru 2028	***$ 488,757***										

CITY OF REDDING

WASTEWATER IMPACT FEE STUDY UPDATE

Debt Service Detail

EXHIBIT 4

DEBT SERVICE SCHEDULES FOR OUTSTANDING BOND ISSUES:

Debt Issue	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
CA SWRCB SRF Agreement #07826-550-0											
Principal Payment	$ 865,378	$ 887,878	$ 910,963	$ 934,648	$ 958,948	$ 983,881	$ 1,009,462	$ 1,035,708	$ 1,062,636	$ 1,090,265	$ 1,118,612
Interest Payment	$ 210,938	$ 197,092	$ 182,886	$ 168,310	$ 153,356	$ 138,013	$ 122,271	$ 106,119	$ 89,548	$ 72,546	$ 55,102
Service Charge	$ 131,836	$ 123,182	$ 114,304	$ 105,194	$ 95,847	$ 86,258	$ 76,419	$ 66,325	$ 55,967	$ 45,341	$ 34,438
Total Payment	**$ 1,208,152**	**$ 1,208,152**	**$ 1,208,152**	**$ 1,208,152**	**$ 1,208,152**	**$ 1,208,152**	**$ 1,208,152**	**$ 1,208,152**	**$ 1,208,152**	**$ 1,208,152**	**$ 1,208,152**
Total Outstanding Principal thru 2028	***$ 10,858,379***										
Year	*0*	0	1	2	3	4	5	6	7	8	9
NPV of Interest Payments	*$ 342,774*	*$ 320,274*	$ 288,533	$ 257,804	$ 228,056	$ 199,262	$ 171,392	$ 144,419	$ 118,317	$ 93,061	$ 68,625
Total NPV of Interest Payments thru 2028	***$ 2,232,517***										
CA SWRCB SRF Agreement #11809-550-0											
Principal Payment	$ 406,409	$ 416,976	$ 427,817	$ 438,940	$ 450,353	$ 462,062	$ 474,075	$ 486,401	$ 499,048	$ 512,023	$ 525,336
Interest Payment	$ 99,063	$ 92,561	$ 85,889	$ 79,044	$ 72,021	$ 64,815	$ 57,422	$ 49,837	$ 42,055	$ 34,070	$ 25,877
Service Charge	$ 61,914	$ 57,850	$ 53,681	$ 49,402	$ 45,013	$ 40,509	$ 35,889	$ 31,148	$ 26,284	$ 21,294	$ 16,173
Total Payment	**$ 567,387**	**$ 567,387**	**$ 567,387**	**$ 567,387**	**$ 567,387**	**$ 567,387**	**$ 567,387**	**$ 567,387**	**$ 567,387**	**$ 567,387**	**$ 567,387**
Total Outstanding Principal thru 2028	***$ 5,099,440***										
Year	*0*	0	1	2	3	4	5	6	7	8	9
NPV of Interest Payments	*$ 160,978*	*$ 150,411*	$ 135,504	$ 121,073	$ 107,103	$ 93,580	$ 80,491	$ 67,824	$ 55,566	$ 43,704	$ 32,228
Total NPV of Interest Payments thru 2028	***$ 1,048,461***										
CA SWRCB SRF Agreement #10807-550-0											
Principal Payment	$ 54,075	$ 55,535	$ 57,035	$ 58,575	$ 60,156	$ 61,781	$ 63,449	$ 65,162	$ 66,921	$ 68,728	$ 70,584
Interest Payment	$ 24,446	$ 22,986	$ 21,486	$ 19,946	$ 18,365	$ 16,740	$ 15,072	$ 13,359	$ 11,600	$ 9,793	$ 7,937
Total Payment	**$ 78,521**	**$ 78,521**	**$ 78,521**	**$ 78,521**	**$ 78,521**	**$ 78,521**	**$ 78,521**	**$ 78,521**	**$ 78,521**	**$ 78,521**	**$ 78,521**
Total Outstanding Principal thru 2028	***$ 682,001***										
Year	*0*	0	1	2	3	4	5	6	7	8	9
NPV of Interest Payments	*$ 24,446*	*$ 22,986*	$ 20,860	$ 18,801	$ 16,806	$ 14,874	$ 13,002	$ 11,188	$ 9,432	$ 7,731	$ 6,083
Total NPV of Interest Payments thru 2028	***$ 166,208***										
Clear Creek WWTP Expansion, Agreement #11810											
Principal Payment	$ 243,199	$ 249,522	$ 256,010	$ 262,666	$ 269,495	$ 276,502	$ 283,691	$ 291,067	$ 298,635	$ 306,399	$ 314,366
Interest Payment	$ 133,043	$ 126,719	$ 120,232	$ 113,576	$ 106,746	$ 99,739	$ 92,550	$ 85,174	$ 77,607	$ 69,842	$ 61,876
Total Payment	**$ 376,241**	**$ 376,241**	**$ 376,241**	**$ 376,241**	**$ 376,241**	**$ 376,241**	**$ 376,241**	**$ 376,241**	**$ 376,241**	**$ 376,241**	**$ 376,241**
Total Outstanding Principal thru 2028	***$ 3,051,551***										
Year	*0*	0	1	2	3	4	5	6	7	8	9
NPV of Interest Payments	*$ 133,043*	*$ 126,719*	$ 116,730	$ 107,056	$ 97,688	$ 88,617	$ 79,835	$ 71,332	$ 63,101	$ 55,134	$ 47,423
Total NPV of Interest Payments thru 2028	***$ 986,678***										

CITY OF REDDING

WASTEWATER IMPACT FEE STUDY UPDATE

Debt Service Detail

EXHIBIT 4

DEBT SERVICE SCHEDULES FOR OUTSTANDING BOND ISSUES:

Debt Issue	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
CA SWRCB SRF Agreement #09824-550-0											
Principal Payment	$ 491,869	$ 496,787	$ 501,755	$ 506,773	$ 511,840	$ 516,959	$ 522,128	$ 527,350	$ 532,623	$ 537,949	$ 543,329
Interest Payment	$ 73,522	$ 68,603	$ 63,635	$ 58,618	$ 53,550	$ 48,431	$ 43,262	$ 38,041	$ 32,767	$ 27,441	$ 22,061
Total Payment	**$ 565,390**	**$ 565,390**	**$ 565,390**	**$ 565,390**	**$ 565,390**	**$ 565,390**	**$ 565,390**	**$ 565,390**	**$ 565,390**	**$ 565,390**	**$ 565,390**
Total Outstanding Principal thru 2028	***$ 5,689,363***										
Year	*0*	0	1	2	3	4	5	6	7	8	9
NPV of Interest Payments	*$ 73,522*	*$ 68,603*	$ 61,782	$ 55,253	$ 49,006	$ 43,031	$ 37,318	$ 31,858	$ 26,643	$ 21,662	$ 16,908
Total NPV of Interest Payments thru 2028	***$ 485,585***										
CA SWRCB SRF Agreement #11800-550-0											
Principal Payment	$ 768,120	$ 788,091	$ 808,581	$ 829,604	$ 851,174	$ 873,305	$ 896,011	$ 919,307	$ 943,209	$ 967,732	$ 992,893
Interest Payment	$ 390,089	$ 370,118	$ 349,627	$ 328,604	$ 307,034	$ 284,904	$ 262,198	$ 238,902	$ 215,000	$ 190,476	$ 165,315
Total Payment	**$ 1,158,208**	**$ 1,158,208**	**$ 1,158,208**	**$ 1,158,208**	**$ 1,158,208**	**$ 1,158,208**	**$ 1,158,208**	**$ 1,158,208**	**$ 1,158,208**	**$ 1,158,208**	**$ 1,158,208**
Total Outstanding Principal thru 2028	***$ 9,638,026***										
Year	*0*	0	1	2	3	4	5	6	7	8	9
NPV of Interest Payments	*$ 390,089*	*$ 370,118*	$ 339,444	$ 309,741	$ 280,980	$ 253,133	$ 226,174	$ 200,076	$ 174,814	$ 150,364	$ 126,700
Total NPV of Interest Payments thru 2028	***$ 2,821,633***										
CA SWRCB SRF Agreement #10802-550-1											
Principal Payment	$ 73,630	$ 75,618	$ 77,659	$ 79,756	$ 81,909	$ 84,121	$ 86,392	$ 88,725	$ 91,120	$ 93,581	$ 96,107
Interest Payment	$ 33,285	$ 31,297	$ 29,256	$ 27,159	$ 25,005	$ 22,794	$ 20,523	$ 18,190	$ 15,795	$ 13,334	$ 10,808
Total Payment	**$ 106,915**	**$ 106,915**	**$ 106,915**	**$ 106,915**	**$ 106,915**	**$ 106,915**	**$ 106,915**	**$ 106,915**	**$ 106,915**	**$ 106,915**	**$ 106,915**
Total Outstanding Principal thru 2028	***$ 928,618***										
Year	*0*	0	1	2	3	4	5	6	7	8	9
NPV of Interest Payments	*$ 33,285*	*$ 31,297*	$ 28,404	$ 25,600	$ 22,884	$ 20,252	$ 17,703	$ 15,234	$ 12,842	$ 10,526	$ 8,283
Total NPV of Interest Payments thru 2028	***$ 226,311***										
CA SWRCB SRF Agreement #11849-550-0											
Principal Payment	$ 525,989	$ 537,561	$ 549,387	$ 561,474	$ 573,826	$ 586,450	$ 599,352	$ 612,538	$ 626,014	$ 639,786	$ 653,861
Interest Payment	$ 235,462	$ 223,890	$ 212,064	$ 199,977	$ 187,625	$ 175,001	$ 162,099	$ 148,913	$ 135,437	$ 121,665	$ 107,590
Total Payment	**$ 761,451**	**$ 761,451**	**$ 761,451**	**$ 761,451**	**$ 761,451**	**$ 761,451**	**$ 761,451**	**$ 761,451**	**$ 761,451**	**$ 761,451**	**$ 761,451**
Total Outstanding Principal thru 2028	***$ 6,466,238***										
Year	*0*	0	1	2	3	4	5	6	7	8	9
NPV of Interest Payments	*$ 235,462*	*$ 223,890*	$ 205,887	$ 188,498	$ 171,703	$ 155,486	$ 139,828	$ 124,712	$ 110,123	$ 96,043	$ 82,458
Total NPV of Interest Payments thru 2028	***$ 1,734,091***										

CITY OF REDDING **EXHIBIT 4**

WASTEWATER IMPACT FEE STUDY UPDATE

Debt Service Detail

DEBT SERVICE SCHEDULES FOR OUTSTANDING BOND ISSUES:

Debt Issue	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**
CA SWRCB SRF Agreement #13836-550-0											
Principal Payment	$ 299,056	$ 305,336	$ 311,748	$ 318,295	$ 324,979	$ 331,803	$ 338,771	$ 345,896	$ 353,149	$ 360,565	$ 368,137
Interest Payment	$ 144,799	$ 138,519	$ 132,107	$ 125,560	$ 118,876	$ 112,052	$ 105,084	$ 97,960	$ 90,706	$ 83,290	$ 75,718
Total Payment	**$ 443,855**	**$ 443,855**	**$ 443,855**	**$ 443,855**	**$ 443,855**	**$ 443,855**	**$ 443,855**	**$ 443,855**	**$ 443,855**	**$ 443,855**	**$ 443,855**
Total Outstanding Principal thru 2028	***$ 3,657,735***										
Year	*0*	0	1	2	3	4	5	6	7	8	9
NPV of Interest Payments	*$ 144,799*	*$ 138,519*	$ 128,259	$ 118,353	$ 108,789	$ 99,557	$ 90,646	$ 82,040	$ 73,752	$ 65,750	$ 58,032
Total NPV of Interest Payments thru 2028	***$ 1,108,496***										
Grand Total Outstanding Principal	**$ 60,808,111**										

	2018	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	***Grand Total thru 2028***
Total Principal Payments	$ 6,603,790	$ 6,784,717	$ 5,383,606	$ 5,510,529	$ 5,640,563	$ 5,773,785	$ 4,795,108	$ 4,905,962	$ 5,019,476	$ 5,135,746	$ 5,254,829	**$ 60,808,111**
Total Interest Payments	$ 1,655,290	$ 1,502,590	$ 1,329,964	$ 1,231,255	$ 1,130,156	$ 1,026,606	$ 920,545	$ 829,743	$ 736,788	$ 641,596	$ 544,123	**$ 11,548,656**
Total Service Charges	$ 314,340	$ 287,511	$ 259,999	$ 231,784	$ 202,851	$ 173,179	$ 142,750	$ 122,697	$ 102,138	$ 81,060	$ 59,450	**$ 1,977,758**
Annual Total	**$ 8,573,419**	**$ 8,574,819**	**$ 6,973,569**	**$ 6,973,569**	**$ 6,973,569**	**$ 6,973,569**	**$ 5,858,402**	**$ 5,858,402**	**$ 5,858,402**	**$ 5,858,402**	**$ 5,858,402**	**$ 74,334,525**
Total NPV of Interest Payments thru 2028	$ 1,969,630	$ 1,790,102	$ 1,543,654	$ 1,379,055	$ 1,219,889	$ 1,065,993	$ 917,207	$ 797,653	$ 682,123	$ 570,471	$ 462,589	
Grand total thru 2028	***$ 12,398,367***											

CITY OF REDDING **EXHIBIT 5**
WASTEWATER IMPACT FEE STUDY UPDATE
Summary of Planned Capital Facilities and Equipment

Summary of Planned Sewer Capital Facilities and Equipment						
System Asset Description[1]	Costs of Planned System Development *(in $2017)* [2]	Allocation Basis (%)			Distribution of Cost Basis ($)	
		Existing Services	Future Services	( )	Existing Services	Future Services
Collection System Division Projects	$ 123,607,736	93%	7%	*3*	$ 115,137,951	$ 8,469,785
Collection Capital Equipment	688,813	100%	0%	*3*	688,813	-
Treatment Plant Improvements	7,657,794	87%	13%	*3*	6,679,856	977,938
Treatment Capital Equipment	340,662	100%	0%	*3*	340,662	-
Total System Costs	**$ 132,295,004**	**92.9%**	**7.1%**		**$ 122,847,282**	**$ 9,447,723**

1. Individual project descriptions and costs were provided by City (see Wastewater Utility Proformas).
2. These System Development Costs are in 2017 dollars (i.e., the inflation factors the City applied were removed from future cost estimates).
3. The costs of planned assets are allocated to existing and future users based on City allocations from the Wastewater Utility Proformas.

CITY OF REDDING
WASTEWATER IMPACT FEE STUDY UPDATE
Detail of Planned Capital Facilities and Equipment for Consideration (System Development)

WASTEWATER CAPITAL OUTLAY
DIVISIONS 877 & 878

Inflation Factor: 3.1% *CCI 10 year average*
0.0% *No inflation factor used for Fee Update*

CIP Funding Choice: **Alternative #3: Preferred CIP**

Projects in Current Year Dollars ($2017) (1)	Proposed 17-18	Proposed 18-19	Projected 19-20	Projected 20-21	Projected 21-22	Projected 22-23	Projected 23-24	Projected 24-25	Projected 25-26	Projected 26-27	Projected 27-28	Projected 28-29	Projected 29-30	Projected 30-31	TOTAL (FY 2017/18 - 2030/31)	TOTAL (FY 2017/18 - 2027/28)
Projects allocated to Rates																
Collection System Division Projects	15,169,627	10,691,559	11,272,924	10,384,444	9,670,360	8,632,794	10,558,865	10,914,815	9,348,345	9,243,549	9,250,669	10,587,694	10,595,920	3,065,238	**139,386,802**	**115,137,951**
Collection Capital Equipment	125,000	218,235	38,365	38,370	38,376	38,381	38,392	38,409	38,421	38,428	38,437	38,446	38,462	38,476	**804,197**	**688,813**
Treatment Plant Improvements	1,412,151	702,658	497,008	1,107,278	422,936	422,950	422,955	422,966	422,977	422,984	422,993	422,997	561,658	4,691,973	**12,356,484**	**6,679,856**
Treatment Capital Equipment	30,940	30,941	30,951	30,951	30,959	30,972	30,974	30,979	30,988	30,998	31,009	31,020	31,030	31,039	**433,751**	**340,662**
Total	*16,737,718*	*11,643,392*	*11,839,247*	*11,561,043*	*10,162,631*	*9,125,097*	*11,051,187*	*11,407,169*	*9,840,730*	*9,735,960*	*9,743,108*	*11,080,157*	*11,227,070*	*7,826,725*	**152,981,234**	**122,847,282**
Projects allocated to Fees																-
Collection System Division Projects	529,787	1,694,355	724,419	1,395,207	1,250,883	2,533,418	145,318	145,436	16,986	16,988	16,989	460,217	460,631	433,889	**9,824,523**	**8,469,785**
Collection Capital Equipment	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**	**-**
Treatment Plant Improvements	101,134	87,643	87,651	87,653	87,664	87,672	87,683	87,696	87,707	87,713	87,722	87,729	87,739	1,510,729	**2,664,134**	**977,938**
Treatment Capital Equipment	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**	**-**
Total	*630,921*	*1,781,998*	*812,070*	*1,482,860*	*1,338,546*	*2,621,089*	*233,001*	*233,132*	*104,693*	*104,701*	*104,711*	*547,946*	*548,370*	*1,944,618*	**12,488,657**	**9,447,723**
Grand Total	**17,368,639**	**13,425,390**	**12,651,317**	**13,043,903**	**11,501,177**	**11,746,186**	**11,284,188**	**11,640,301**	**9,945,423**	**9,840,661**	**9,847,819**	**11,628,103**	**11,775,441**	**9,771,343**	**165,469,891**	**132,295,004**

1. Projects were reported in future year dollars. NBS has assumed that all projects will be calculated in current year dollars using the 10 year CCI inflation factor average.

CITY OF REDDING
WASTEWATER IMPACT FEE STUDY UPDATE
Detail of Planned Capital Facilities and Equipment for Consideration (System Development)

EXHIBIT 6

WASTEWATER CAPITAL OUTLAY
DIVISIONS 877 & 878

Inflation Factor: 3.1% *CCI 10 year average*
0.0% *No inflation factor used for Fee Update*

CIP Funding Choice: **Alternative #3: Preferred CIP**

FUTURE YEAR DOLLARS

Object	CIP#	Project Type	Project Title	Rates	Fees	Proposed 17-18	Proposed 18-19	Projected 19-20	Projected 20-21	Projected 21-22	Projected 22-23	Projected 23-24	Projected 24-25	Projected 25-26	Projected 26-27	Projected 27-28	Projected 28-29	Projected 29-30	Projected 30-31	TOTAL (FY 2017/18 - 2030/31)
						1.208	1.2467	1.2866	1.3278	1.3702	1.4141	1.4593	1.506	1.5542	1.604	1.6553	1.7083	1.7629		
COLLECTION SYSTEM (Division 877):																				
2111-01		Collection System Division Pro	ILMS Permit Tracking Software	0%	100%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3010-01	WW-2011-04	Collection System Division Pro	Structures and Improvements	100%	0%	47,350	48,820	50,340	51,910	53,520	55,180	56,900	58,670	60,490	62,370	64,310	66,310	68,370	70,490	815,030
3012-01	WW-2009-02	Collection System Division Pro	Misc repair and replace	100%	0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3100-01		Collection System Division Pro	Land Acquisition	100%	0%	670	-	-	-	-	-	-	-	-	-	-	-	-	-	670
3512-01	WW-2011-03	Collection System Division Pro	Infiltration and Inflow Control	100%	0%	2,151,360	1,244,310	1,282,890	1,322,660	1,363,670	1,405,950	1,449,540	1,494,480	1,540,810	1,588,580	1,637,830	1,688,610	1,740,960	1,794,930	21,706,580
3512-02		Collection System Division Pro	Private Lateral Program	100%	0%	20,000	-	-	-	-	-	-	-	-	-	-	-	-	-	20,000
3512-03		Collection System Division Pro	Deerfield Pipelining / Mistletoe Replace	100%	0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3515-01		Collection System Division Pro	System Maintenance (Storm Drain)	100%	0%	477,500	311,090	320,740	330,690	340,950	351,520	362,420	373,660	385,250	397,200	409,520	422,220	435,310	448,805	5,366,875
3515-05		Collection System Division Pro	Box Culvert Bunker/Willis	100%	0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3515-06		Collection System Division Pro	Court/Sheridan/Railroad	100%	0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3515-07		Collection System Division Pro	2016 Storm Drain	100%	0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3515-08		Collection System Division Pro	Keswick Dam Emergency Repair	100%	0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3525-01	WW-2005-10	Collection System Division Pro	Lift Station Improvements	100%	0%	1,040,670	848,870	256,590	264,550	272,760	281,220	289,940	298,930	308,200	317,760	327,620	337,780	348,260	359,056	5,552,206
3525-03		Collection System Division Pro	Layton Lift Station	100%	0%	334,880	-	-	-	-	-	-	-	-	-	-	-	-	-	334,880
3525-04		Collection System Division Pro	Locust Lift Station	100%	0%	107,806	200,000	-	-	-	-	-	-	-	-	-	-	-	-	307,806
3525-06	LS-CC-1	Collection System Division Pro	Westside Lift Station	100%	0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3525-08		Collection System Division Pro	2017 Storm Drain Imp	100%	0%	75,810	-	-	-	-	-	-	-	-	-	-	-	-	-	75,810
4086-02	WW-2005-12	Collection System Division Pro	Westside Interceptor - Phase III	41%	59%	100,000	2,517,080	200,000	2,363,000	2,363,000	-	-	-	-	-	-	-	-	-	7,543,080
4088-01	WW-2005-22	Collection System Division Pro	Master Plan Update	50%	50%	35,000	35,000	36,090	37,210	38,370	39,560	40,790	42,060	43,370	44,720	46,110	47,540	49,020	50,540	585,380
4203-02	WW-2009-02	Collection System Division Pro	6-8" Line Repair/Replacement	100%	0%	4,838,240	4,937,800	5,652,260	7,289,450	7,584,320	7,942,800	8,129,590	8,820,130	9,618,060	9,778,260	10,091,020	10,414,090	10,746,990	-	105,843,010
4203-07	P-CC-21/22	Collection System Division Pro	San Francisco Replacement (Mesa $)	90%	10%	2,911,122	-	-	-	-	-	-	-	-	-	-	-	-	-	2,911,122
4203-09	P-CC-1	Collection System Division Pro	Lake Redding Interceptor I	91%	9%	100,000	2,626,907	2,626,907	-	-	-	-	-	-	-	-	-	-	-	5,353,814
4203-09	P-CC-1	Collection System Division Pro	Lake Redding Interceptor II	91%	9%	-	-	1,250,000	1,250,000	-	-	-	-	-	-	-	-	-	-	2,500,000
4203-10		Collection System Division Pro	Hill Street Repair	100%	0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4203-11	19&29	Collection System Division Pro	Hilltop Dr Lining	100%	0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4203-12		Collection System Division Pro	School Street	100%	0%	2,343,237	-	-	-	-	-	-	-	-	-	-	-	-	-	2,343,237
4203-13	P-S-9	Collection System Division Pro	Boneset/Manz/Bechelli	100%	0%	601,580	-	-	-	-	-	-	-	-	-	-	-	-	-	601,580
4203-14		Collection System Division Pro	Garden Tract	100%	0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4203-15		Collection System Division Pro	Grove St	100%	0%	42,170	-	-	-	-	-	-	-	-	-	-	-	-	-	42,170
4203-16		Collection System Division Pro	Arroyo Manor	100%	0%	94,922	-	-	-	-	-	-	-	-	-	-	-	-	-	94,922
4203-17	P-CC-26/27	Collection System Division Pro	Hallmark/Redbud	100%	0%	78,297	-	-	-	-	-	-	-	-	-	-	-	-	-	78,297
	P-S-1	Collection System Division Pro	Oasis Road	34%	66%	-	-	414,290	-	-	-	-	-	-	-	-	-	-	-	414,290
4226-02	ST-2005-09	Collection System Division Pro	Placer Airpark to Boston	80%	20%	14,910	-	-	-	-	-	-	-	-	-	-	-	-	-	14,910
4593-01	WW-2005-02	Collection System Division Pro	Boulder Creek Interceptor - Phase II	75%	25%	-	-	-	-	-	-	-	-	-	-	-	-	-	2,480,000	2,480,000
4593-01	WW-2011-09	Collection System Division Pro	Boulder Creek Interceptor - Phase III	75%	25%	-	-	-	-	-	-	-	-	-	-	-	2,480,460	2,559,730	-	5,040,190
4775-03		Collection System Division Pro	Old Alturas Road	100%	0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	LS-CC-11, 12	Collection System Division Pro	Hartnell Lift Station	100%	0%	-	-	-	-	132,710	-	-	-	-	-	-	-	-	-	132,710
	P-CC-6	Collection System Division Pro	Canby Bypass Phase 1	100%	0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	P-CC-23	Collection System Division Pro	Loma Street Alley	100%	0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	P-CC-2	Collection System Division Pro	Cumberland Sewer	100%	0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	LS-CC-2	Collection System Division Pro	Hartnell LS	0%	100%	141,340	-	-	-	-	-	-	-	-	-	-	-	-	-	141,340
	LS-CC-4	Collection System Division Pro	North Market LS	94%	6%	142,550	-	-	-	-	-	-	-	-	-	-	-	-	-	142,550
	P-CC-26	Collection System Division Pro	Hallmark Alley	100%	0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	P-CC-27	Collection System Division Pro	Redbud Alley	100%	0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	P-CC-28	Collection System Division Pro	Woodacre Drive	100%	0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	P-S-8	Collection System Division Pro	Patterson Ct	100%	0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	P-CC-5	Collection System Division Pro	Mercury Drive Sewer	100%	0%	-	-	662,600	-	-	-	-	-	-	-	-	-	-	-	662,600
	LS-CC-7, 8	Collection System Division Pro	Cheryl Lift Station	100%	0%	-	-	-	-	190,460	-	-	-	-	-	-	-	-	-	190,460
	P-CC-8, 9	Collection System Division Pro	Sulphur Creek	0%	100%	-	-	-	-	-	2,931,430	-	-	-	-	-	-	-	-	2,931,430
	P-CC-4	Collection System Division Pro	Buenaventura Sewer	94%	6%	-	-	-	-	-	-	2,526,810	2,607,500	-	-	-	-	-	-	5,134,310
COLLECTION CAPITAL EQUIPMENT																				-
5711		Collection Capital Equipment	PC Computer Equipment	100%	0%	10,000	10,000	10,310	10,630	10,960	11,300	11,660	12,030	12,410	12,800	13,200	13,610	14,040	14,480	167,430
5815		Collection Capital Equipment	Safety Equipment	100%	0%	15,000	15,000	15,470	15,950	16,450	16,960	17,490	18,040	18,600	19,180	19,780	20,400	21,040	21,700	251,060
5899		Collection Capital Equipment	Other Equipment (sewer tv inspect, etc.)	100%	0%	100,000	200,000	15,000	15,470	15,950	16,450	16,960	17,490	18,040	18,600	19,180	19,780	20,400	21,040	514,360
TREATMENT PLANT IMPROVEMENTS (Division 878)																				
3010-01	WW-2011-05	Treatment Plant Improvements	Structures and Improvements	100%	0%	120,690	124,440	128,300	132,280	136,390	140,620	144,980	149,480	154,120	158,900	163,830	168,910	174,150	179,550	2,076,640
3999-01		Treatment Plant Improvements	Administration	0%	100%	25,780	26,580	27,410	28,260	29,140	30,050	30,990	31,960	32,960	33,990	35,050	36,140	37,270	38,430	444,010
4226-05		Treatment Plant Improvements	Project Coordination		100%	61,860	63,780	65,760	67,800	69,910	72,080	74,320	76,630	79,010	81,460	83,990	86,600	89,290	92,060	1,064,550
4703-01		Treatment Plant Improvements	CCWWTP Maintenance	100%	0%	472,460	200,000	200,000	206,200	212,600	219,200	226,000	233,010	240,240	247,690	255,370	263,290	271,460	279,880	3,527,400
4801-04	WW-2011-12	Treatment Plant Improvements	Solids Handling Facilities	75%	25%	53,975	-	-	-	-	-	-	-	-	-	-	-	-	-	53,975
4801-05		Treatment Plant Improvements	SWWWTP Maintenance	100%	0%	778,520	400,000	200,000	125,000	128,880	132,880	137,000	141,250	145,630	150,150	154,810	159,610	164,560	169,670	2,987,960
		Treatment Plant Improvements	SWWTP Scrubber Replacement	100%	0%	-	-	-	750,000	-	-	-	-	-	-	-	-	-	-	750,000
	TP-CC-1	Treatment Plant Improvements	Clear Creek WWTP Levee	100%	0%	-	-	-	-	-	-	-	-	-	-	-	-	200000	-	200,000
	TP-S-2	Treatment Plant Improvements	Stillwater WWTP	75%	25%	-	-	-	-	-	-	-	-	-	-	-	-	-	6,786,730	6,786,730
	TP-C-3	Treatment Plant Improvements	Clear Creek WWTP Pond Upgrades	75%	25%	-	-	-	-	-	-	-	-	-	-	-	-	-	1,678,195	1,678,195
TREATMENT CAPITAL EQUIPMENT																				
5695-01		Treatment Capital Equipment	Office Equip	100%	0%															-
5711		Treatment Capital Equipment	PC Computer Equipment	100%	0%	15,470	15,950	16,450	16,960	17,490	18,040	18,600	19,180	19,780	20,400	21,040	21,700	22,380	23,080	266,520
5815		Treatment Capital Equipment	Safety Equipment	100%	0%	15,470	15,950	16,450	16,960	17,490	18,040	18,600	19,180	19,780	20,400	21,040	21,700	22,380	23,080	266,520
			Subtotal Replacement Projects - Rates			**16,737,718**	**12,004,337**	**12,584,658**	**12,669,895**	**11,482,615**	**10,629,940**	**13,272,750**	**14,125,003**	**12,563,095**	**12,814,650**	**13,221,605**	**15,502,125**	**16,194,608**	**11,639,724**	185,442,723
			Subtotal Expansion Projects - Impact Fees			**630,921**	**1,837,240**	**863,199**	**1,625,085**	**1,512,405**	**3,053,340**	**279,840**	**288,678**	**133,655**	**137,810**	**142,095**	**766,625**	**791,003**	**2,891,991**	14,953,886
			Total Water Utility Capital Projects			**17,368,639**	**13,841,577**	**13,447,857**	**14,294,980**	**12,995,020**	**13,683,280**	**13,552,590**	**14,413,680**	**12,696,750**	**12,952,460**	**13,363,700**	**16,268,750**	**16,985,610**	**14,531,716**	200,396,609

CITY OF REDDING
WASTEWATER IMPACT FEE STUDY UPDATE
Detail of Planned Capital Facilities and Equipment for Consideration (System Development)

EXHIBIT 6

WASTEWATER CAPITAL OUTLAY
DIVISIONS 877 & 878

Inflation Factor: 3.1% *CCI 10 year average*
0.0% *No inflation factor used for Fee Update*

CIP Funding Choice: **Alternative #3: Preferred CIP**

CURRENT YEAR DOLLARS ($2017)

Object	CIP#	Project Type	Project Title	Rates	Fees	Proposed 17-18	Proposed 18-19	Projected 19-20	Projected 20-21	Projected 21-22	Projected 22-23	Projected 23-24	Projected 24-25	Projected 25-26	Projected 26-27	Projected 27-28	Projected 28-29	Projected 29-30	Projected 30-31	TOTAL (FY 2017/18 - 2030/31)
Inflation Factor:						1	1.03	1.06	1.10	1.13	1.16	1.20	1.24	1.28	1.32	1.36	1.40	1.44	1.49	
COLLECTION SYSTEM (Division 877):																				
2111-01	0	Collection System Division Pro	ILMS Permit Tracking Software	0%	100%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3010-01	WW-2011-04	Collection System Division Pro	Structures and Improvements	100%	0%	47,350	47,352	47,358	47,367	47,368	47,368	47,376	47,381	47,382	47,386	47,391	47,395	47,398	47,399	663,271
3012-01	WW-2009-02	Collection System Division Pro	Misc repair and replace	100%	0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3100-01	0	Collection System Division Pro	Land Acquisition	100%	0%	670	-	-	-	-	-	-	-	-	-	-	-	-	-	670
3512-01	WW-2011-03	Collection System Division Pro	Infiltration and Inflow Control	100%	0%	2,151,360	1,206,896	1,206,902	1,206,903	1,206,909	1,206,915	1,206,919	1,206,923	1,206,924	1,206,927	1,206,930	1,206,935	1,206,938	1,206,938	17,841,319
3512-02	0	Collection System Division Pro	Private Lateral Program	100%	0%	20,000	-	-	-	-	-	-	-	-	-	-	-	-	-	20,000
3512-03	0	Collection System Division Pro	Deerfield Pipelining / Mistletoe Replace	100%	0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3515-01	0	Collection System Division Pro	System Maintenance (Storm Drain)	100%	0%	477,500	301,736	301,742	301,748	301,756	301,757	301,759	301,763	301,768	301,774	301,779	301,782	301,783	301,783	4,400,429
3515-05	0	Collection System Division Pro	Box Culvert Bunker/Willis	100%	0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3515-06	0	Collection System Division Pro	Court/Sheridan/Railroad	100%	0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3515-07	0	Collection System Division Pro	2016 Storm Drain	100%	0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3515-08	0	Collection System Division Pro	Keswick Dam Emergency Repair	100%	0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3525-01	WW-2005-10	Collection System Division Pro	Lift Station Improvements	100%	0%	1,040,670	823,346	241,392	241,397	241,405	241,409	241,410	241,412	241,414	241,419	241,426	241,429	241,435	241,435	4,760,998
3525-03	0	Collection System Division Pro	Layton Lift Station	100%	0%	334,880	-	-	-	-	-	-	-	-	-	-	-	-	-	334,880
3525-04	0	Collection System Division Pro	Locust Lift Station	100%	0%	107,806	193,986	-	-	-	-	-	-	-	-	-	-	-	-	301,792
3525-06	LS-CC-1	Collection System Division Pro	Westside Lift Station	100%	0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3525-08	0	Collection System Division Pro	2017 Storm Drain Imp	100%	0%	75,810	-	-	-	-	-	-	-	-	-	-	-	-	-	75,810
4086-02	WW-2005-12	Collection System Division Pro	Westside Interceptor - Phase III	41%	59%	100,000	2,441,397	188,154	2,156,193	2,091,361	-	-	-	-	-	-	-	-	-	6,977,105
4088-01	WW-2005-22	Collection System Division Pro	Master Plan Update	50%	50%	35,000	33,948	33,952	33,953	33,959	33,960	33,963	33,967	33,972	33,976	33,979	33,979	33,984	33,984	476,576
4203-02	WW-2009-02	Collection System Division Pro	6-8" Line Repair/Replacement	100%	0%	4,838,240	4,789,331	5,317,467	6,651,487	6,712,464	6,818,366	6,768,877	7,123,023	7,533,871	7,429,055	7,436,155	7,443,480	7,450,456	-	86,312,272
4203-07	P-CC-21/22	Collection System Division Pro	San Francisco Replacement (Mesa $)	90%	10%	2,911,122	-	-	-	-	-	-	-	-	-	-	-	-	-	2,911,122
4203-09	P-CC-1	Collection System Division Pro	Lake Redding Interceptor I	91%	9%	100,000	2,547,921	2,471,311	-	-	-	-	-	-	-	-	-	-	-	5,119,232
4203-09	P-CC-1	Collection System Division Pro	Lake Redding Interceptor II	91%	9%	-	-	1,175,960	1,140,602	-	-	-	-	-	-	-	-	-	-	2,316,562
4203-10	0	Collection System Division Pro	Hill Street Repair	100%	0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4203-11	19&29	Collection System Division Pro	Hilltop Dr Lining	100%	0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4203-12	0	Collection System Division Pro	School Street	100%	0%	2,343,237	-	-	-	-	-	-	-	-	-	-	-	-	-	2,343,237
4203-13	P-S-9	Collection System Division Pro	Boneset/Manz/Bechelli	100%	0%	601,580	-	-	-	-	-	-	-	-	-	-	-	-	-	601,580
4203-14	0	Collection System Division Pro	Garden Tract	100%	0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4203-15	0	Collection System Division Pro	Grove St	100%	0%	42,170	-	-	-	-	-	-	-	-	-	-	-	-	-	42,170
4203-16	0	Collection System Division Pro	Arroyo Manor	100%	0%	94,922	-	-	-	-	-	-	-	-	-	-	-	-	-	94,922
4203-17	P-CC-26/27	Collection System Division Pro	Hallmark/Redbud	100%	0%	78,297	-	-	-	-	-	-	-	-	-	-	-	-	-	78,297
0	P-S-1	Collection System Division Pro	Oasis Road	34%	66%	-	-	389,751	-	-	-	-	-	-	-	-	-	-	-	389,751
4226-02	ST-2005-09	Collection System Division Pro	Placer Airpark to Boston	80%	20%	14,910	-	-	-	-	-	-	-	-	-	-	-	-	-	14,910
4593-01	WW-2005-02	Collection System Division Pro	Boulder Creek Interceptor - Phase II	75%	25%	-	-	-	-	-	-	-	-	-	-	-	-	-	1,667,589	1,667,589
4593-01	WW-2011-09	Collection System Division Pro	Boulder Creek Interceptor - Phase III	75%	25%	-	-	-	-	-	-	-	-	-	-	-	1,772,911	1,774,558	-	3,547,469
4775-03	0	Collection System Division Pro	Old Alturas Road	100%	0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0	LS-CC-11, 12	Collection System Division Pro	Hartnell Lift Station	100%	0%	-	-	-	-	117,454	-	-	-	-	-	-	-	-	-	117,454
0	P-CC-6	Collection System Division Pro	Canby Bypass Phase 1	100%	0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0	P-CC-23	Collection System Division Pro	Loma Street Alley	100%	0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0	P-CC-2	Collection System Division Pro	Cumberland Sewer	100%	0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0	LS-CC-2	Collection System Division Pro	Hartnell LS	0%	100%	141,340	-	-	-	-	-	-	-	-	-	-	-	-	-	141,340
0	LS-CC-4	Collection System Division Pro	North Market LS	94%	6%	142,550	-	-	-	-	-	-	-	-	-	-	-	-	-	142,550
0	P-CC-26	Collection System Division Pro	Hallmark Alley	100%	0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0	P-CC-27	Collection System Division Pro	Redbud Alley	100%	0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0	P-CC-28	Collection System Division Pro	Woodacre Drive	100%	0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0	P-S-8	Collection System Division Pro	Patterson Ct	100%	0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0	P-CC-5	Collection System Division Pro	Mercury Drive Sewer	100%	0%	-	-	623,353	-	-	-	-	-	-	-	-	-	-	-	623,353
0	LS-CC-7, 8	Collection System Division Pro	Cheryl Lift Station	100%	0%	-	-	-	-	168,566	-	-	-	-	-	-	-	-	-	168,566
0	P-CC-8, 9	Collection System Division Pro	Sulphur Creek	0%	100%	-	-	-	-	-	2,516,438	-	-	-	-	-	-	-	-	2,516,438
0	P-CC-4	Collection System Division Pro	Buenaventura Sewer	94%	6%	-	-	-	-	-	-	2,103,878	2,105,783	-	-	-	-	-	-	4,209,661
COLLECTION CAPITAL EQUIPMENT																				
5711	0	Collection Capital Equipment	PC Computer Equipment	100%	0%	10,000	9,699	9,699	9,700	9,700	9,700	9,708	9,715	9,721	9,725	9,727	9,728	9,733	9,737	136,293
5815	0	Collection Capital Equipment	Safety Equipment	100%	0%	15,000	14,549	14,554	14,554	14,559	14,559	14,563	14,569	14,569	14,572	14,576	14,581	14,586	14,591	204,382
5899	0	Collection Capital Equipment	Other Equipment (sewer tv inspect, etc.)	100%	0%	100,000	193,986	14,112	14,116	14,116	14,121	14,121	14,125	14,131	14,131	14,134	14,138	14,142	14,148	463,522
TREATMENT PLANT IMPROVEMENTS (Division 878)																				
3010-01	WW-2011-05	Treatment Plant Improvements	Structures and Improvements	100%	0%	120,690	120,698	120,701	120,703	120,711	120,713	120,714	120,718	120,723	120,725	120,728	120,729	120,731	120,732	1,690,015
3999-01	0	Treatment Plant Improvements	Administration	0%	100%	25,780	25,781	25,786	25,787	25,790	25,796	25,803	25,810	25,818	25,824	25,829	25,831	25,838	25,841	361,314
4226-05	0	Treatment Plant Improvements	Project Coordination	0%	100%	61,860	61,862	61,865	61,866	61,873	61,876	61,880	61,885	61,889	61,889	61,893	61,897	61,901	61,903	866,341
4703-01	0	Treatment Plant Improvements	CCWWTP Maintenance	100%	0%	472,460	193,986	188,154	188,154	188,161	188,169	188,173	188,176	188,181	188,183	188,184	188,187	188,192	188,195	2,924,554
4801-04	WW-2011-12	Treatment Plant Improvements	Solids Handling Facilities	75%	25%	53,975	-	-	-	-	-	-	-	-	-	-	-	-	-	53,975
4801-05	0	Treatment Plant Improvements	SWWWTP Maintenance	100%	0%	778,520	387,973	188,154	114,060	114,065	114,069	114,069	114,072	114,073	114,077	114,081	114,081	114,083	114,089	2,609,464
0		Treatment Plant Improvements	SWWTP Scrubber Replacement	100%	0%	-	-	-	684,361	-	-	-	-	-	-	-	-	-	-	684,361
0	TP-CC-1	Treatment Plant Improvements	Clear Creek WWTP Levee	100%	0%	-	-	-	-	-	-	-	-	-	-	-	-	138,652	-	138,652
0	TP-S-2	Treatment Plant Improvements	Stillwater WWTP	75%	25%	-	-	-	-	-	-	-	-	-	-	-	-	-	4,563,499	4,563,499
0	TP-C-3	Treatment Plant Improvements	Clear Creek WWTP Pond Upgrades	75%	25%	-	-	-	-	-	-	-	-	-	-	-	-	-	1,128,443	1,128,443
TREATMENT CAPITAL EQUIPMENT																				
5695-01	0	Treatment Capital Equipment	Office Equip	100%	0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5711	0	Treatment Capital Equipment	PC Computer Equipment	100%	0%	15,470	15,470	15,476	15,476	15,479	15,486	15,487	15,490	15,494	15,499	15,505	15,510	15,515	15,519	216,875
5815	0	Treatment Capital Equipment	Safety Equipment	100%	0%	15,470	15,470	15,476	15,476	15,479	15,486	15,487	15,490	15,494	15,499	15,505	15,510	15,515	15,519	216,875
			Subtotal Replacement Projects - Rates			**16,737,718**	**11,643,392**	**11,839,247**	**11,561,043**	**10,162,631**	**9,125,097**	**11,051,187**	**11,407,169**	**9,840,730**	**9,735,960**	**9,743,108**	**11,080,157**	**11,227,070**	**7,826,725**	152,981,234
			Subtotal Expansion Projects - Impact Fees			**630,921**	**1,781,998**	**812,070**	**1,482,860**	**1,338,546**	**2,621,089**	**233,001**	**233,132**	**104,693**	**104,701**	**104,711**	**547,946**	**548,370**	**1,944,618**	12,488,657
			Total Water Utility Capital Projects			**17,368,639**	**13,425,390**	**12,651,317**	**13,043,903**	**11,501,177**	**11,746,186**	**11,284,188**	**11,640,301**	**9,945,423**	**9,840,661**	**9,847,819**	**11,628,103**	**11,775,441**	**9,771,343**	165,469,891

CITY OF REDDING
WASTEWATER IMPACT FEE STUDY UPDATE
Unit Cost Calculation

EXHIBIT 7

Alternative #3: Preferred CIP

Assets Allocated to Future Development and Calculated New Sewer Impact Fee	Impact Fee w/o Buy-In Component[6]	*Comments*
System Asset Values Allocated to New Development		
Existing System Buy-In (less Outstanding Debt Principal)	$0	
Future System Expansion[1]	$9,447,000	*7% Allocation to Growth*
Total: Existing & Future System Costs	*$9,447,000*	
Adjustments to Cost Basis:		
Future Customer's Share of Outstanding Debt[2]	$0	*Excluded because these are existing system (a buy-in costs - which is excluded from this analysis)*
Cash Reserves (less Unspent Impact Fees)[3]	$0	
Total: Adjustments to Cost Basis	*$0*	
Total Adjusted Cost Basis for New Development	**$9,447,000**	
Projected Increase in Connections (HEU's) to Sewer System[4]	1,840	
Impact Fee - Base Fee ($/HE)[5]	**$5,100**	

1. Refer to details of planned capital projects on Exhibit 5 & 6.
2. Future customer's share of outstanding debt principal, net present value of interest payments, less unspent impact fee reserves.
3. Available cash reserves allocated to future customers. Refer to Exhibit 3.
4. Allocation based on projected growth.
5. Adjusted System Costs divided by HE's, rounded down to nearest $100 increment.
6. Existing System Buy-In and Cash Reserves are excluded. This is consistent with the City's historical impact fee methodology.

CITY OF REDDING
WASTEWATER IMPACT FEE STUDY UPDATE
Updated Impact Fee

EXHIBIT 8

Water Meter Size	Equivalency to Base Meter Size *(Housing Equivalent Ratio) (a)*	Unit Cost *(b)*	Updated Impact Fee Per Connection (c)	Existing Impact Fee Per Connection	Change from Existing to Updated Impact Fee	
					$	%
5/8 inch	1.00	$5,100	$5,100	$7,368	-$2,268	-31%
3/4 inch	1.50	$5,100	$7,650	$11,052	-$3,402	-31%
1 inch	2.50	$5,100	$12,750	$18,420	-$5,670	-31%
1 1/2 inch	5.00	$5,100	$25,500	$36,840	-$11,340	-31%
2 inch	8.00	$5,100	$40,800	$58,944	-$18,144	-31%
3 inch	16.00	$5,100	$81,600	$117,888	-$36,288	-31%
4 inch	25.00	$5,100	$127,500	$184,200	-$56,700	-31%
6 inch	50.00	$5,100	$255,000	$368,400	-$113,400	-31%
8 inch	80.00	$5,100	$408,000	$589,440	-$181,440	-31%
10 inch	145.00	$5,100	$739,500	$1,068,360	-$328,860	-31%
12 inch	215.00	$5,100	$1,096,500	$1,584,120	-$487,620	-31%

a. Source: City's current meter factors, as directed by City staff. 12" meter is estimated based on AWWA M6, Table 5-3 increase from 10" to 12" meters.

b. Existing Asset Costs Allocated to Existing & Future Users Based on Growth Projections.

c. Multi-family units, including duplex, triplex, and more than four-unit developments, are set at 0.75 HE's per unit.