GEORGETOWN DIVIDE PUBLIC UTILITY DISTRICT CAPITAL FACILITY CHARGE STUDY

March 2006

Updated March 2007

Prepared for:
Georgetown Divide
Public Utility District
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Executive Summary

Management of water utilities is a demanding and complicated business. In addition to meeting the service needs of customers, the GDPUD satisfies the demands of a number of other stakeholders as well. These include health, safety and environmental regulators, bankers and governmental lenders and other interested parties. To accomplish competing objectives the GDPUD has a Capital Improvement Program and Strategic Plan as well as the provisions and limitations of the California codes. Financial responsibility is a key thread in those documents.

Financial objectives for the GDPUD is to seek sufficient capital to build projects and sufficient revenue to properly manage, operate and maintain facilities. Also, the GDPUD seeks fairness and equity in allocating financial burdens among customers. Because utility assets are relatively expensive – partly because most assets are installed underground – and have long useful lives (up to fifty years or more), it is appropriate to factor growth into the calculus of cost allocation. It is often considered inappropriate to have existing customers be entirely responsible for capital costs of all future assets, especially those expansion facilities that would not be built if there were no growth. To resolve this situation, many districts take a two-pronged approach to the allocation financial costs of long-term assets among current and future customers.

First, they engage in long-term debt financings to pay for the facilities, even if there is sufficient cash on hand to fully fund the construction. This concept implements the *pay-as-you-use principle*, wherein future customers participate in future debt service when they connect to the system.

Secondly, districts historically have adopted connection fees as the process for new customers paying the cost of expanding the system to serve them. Since adoption AB 1600 the acceptable terminology to describe these fees is Capacity Facility Charges (CFCs). CFCs are assessed to new customers when they connect to the utility systems to ensure implementation of the *growth-pay-for-growth principle*. In the long run, CFCs provide sufficient funds to fully pay for the construction costs of expansion assets. In the short-run, some years will have more or less growth than other years, producing more or less CFCs revenue, and some years may have more or less than average expansion project capital requirements. Utilization of reserve funds, reliance on rate revenues from existing customers and engagement of funding (borrowing or accepting grants in aid) from external sources are approaches taken to buffer the variances associated with growth and capital requirement.

State law governs capital facility charges. California Government Code Section 66000, *et. seq.*, provides that the purpose and intended use of a proposed CFC must be identified, that there be a reasonable relationship between the use of revenues generated by the fee and the properties paying the fees and that there be a reasonable relationship between the amount of the fee and the cost of the public facility attributable to the properties paying the fees.

Stantec is of the opinion that this report satisfies these requirements. In summary, the purpose and intended use of the fees is to generate revenue to pay for capital construction cost, or service debt on capital construction cost, of public water facilities. These facilities will be used to provide water service for the newly connecting accounts. Reasonable care is given in the computation of the fees to ensure that only growth-induced portion of new projects, or portions thereof, and unused capacity of existing facilities are to be funded by the charges. The charges are computed on a unit cost basis to ensure a reasonable relationship between facility cost and fee paying properties. In administering the fees, Stantec assumes that the GDPUD will comply with other aspects of the Government Code Section 66000 *et. seq.*, including that CFCs revenues will not be commingled with other revenue sources.

Generally, development/capacity fees are assessed upon connection by a property to the utility system, often in concert with issuance of building permits or occupancy certificates. Fees are determined on a constant dollar value basis. As such, fees should be adjusted periodically to coincide with increasing or decreasing costs of construction. Stantec has prepared this study assuming the GDPUD will adjust fees every year based on the *Engineering News-Record* Construction Cost Index and then revisit planning and costs bases every five years as part of the master planning update process. The CFCs recommended for the GDPUD reflect economic and legal principles for determining capacity charges and impact fees generally, and also reflects the practices of other water agencies in California.

Using the determined replacement cost and valuation for the GDPUD water system a unit cost can be calculated. This unit cost reflects the price of water obtained from this system. Unit costs for a twenty year timeframe are calculated in Table 9, Water System Capital Facility Charge located in Appendix C of this report. The recommended CFC for a new residential connection is $8,100 (fiscal year 2007-2008). A schedule of Capital Facility Charges is shown in Table 10, Recommended Water System Capital Facility Charges in Appendix C of this report, and below.

Table 10 Revised
Recommended Water System Capital Facility Charges

GDPUD Meter Size	FY 07-08	FY 08-09	FY 09-10	FY 10-11	FY 11-12
5/8 - 3/4 inch	8,100	8,300	8,500	8,800	9,100
1 inch	20,025	20,626	21,245	21,882	22,538
1 1/2 inch	40,049	41,250	42,488	43,763	45,076
2 inch	64,079	66,001	67,981	70,021	72,121

Assumes 3% increase each year & most common fee is rounded to nearest $100 for 5/8 -3/4 inch meters. The charges will be increased annually by the 20-city Engineering News Record Construction Cost Index.

Chapter two of this report outlines the projected population growth in El Dorado County and within the GDPUD service area. This chapter summarizes recent studies of future water demand for the GDPUD. A complete residential build out analysis and assumptions are also presented in chapter two. This analysis is performed to ensure the CIP is adequate to support the anticipated growth outlined by the El Dorado General Plan and the costs of the necessary infrastructure is reflected in the CFCs.

With an understanding of projected growth in the area, chapter three details the current charges for new connections within the GDPUD and current charges for new connections within the surrounding water purveyors of El Dorado and Placer Counties.

Chapter four details the process for calculating a unit cost of water from the GDPUD system and a proportional fair CFC for new connections. This approach satisfies rational nexus criteria required by the California Government Code.

The technical appendix at the end of this report provide supporting calculations for establishing the CFCs and reference materials pertaining to CFCs.

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LIST OF ACRONYMS

APN	Assessor's Parcel Number
CFC	Capital Facility Charge
CIP	Capital Improvement Project
EIR	Environmental Impact Report
GDPUD	Georgetown Divide Public Utility District
GIS	Geographic Information Systems
GPD	Gallons Per Day
MGD	Million Gallons Per Day
SACOG	Sacramento Area Council of Governments
WTP	Water Treatment Plant

1.0 Introduction

This report summarizes the development methodology and justification of the recommended Capital Facility Charges (CFCs) for the Georgetown Divide Public Utility District (GDPUD). CFCs are defined by the California Government Code Section 66000 et sequential as "charges for facilities in existence at the time the charge is imposed or charges for new facilities to be constructed in the future that are of benefit to the person or property being charged". These charges are intended to recover a portion of the District's Capital Improvement Program (CIP) cost, and water rate payer's prior investment in capital facilities that support land development through water system expansion.

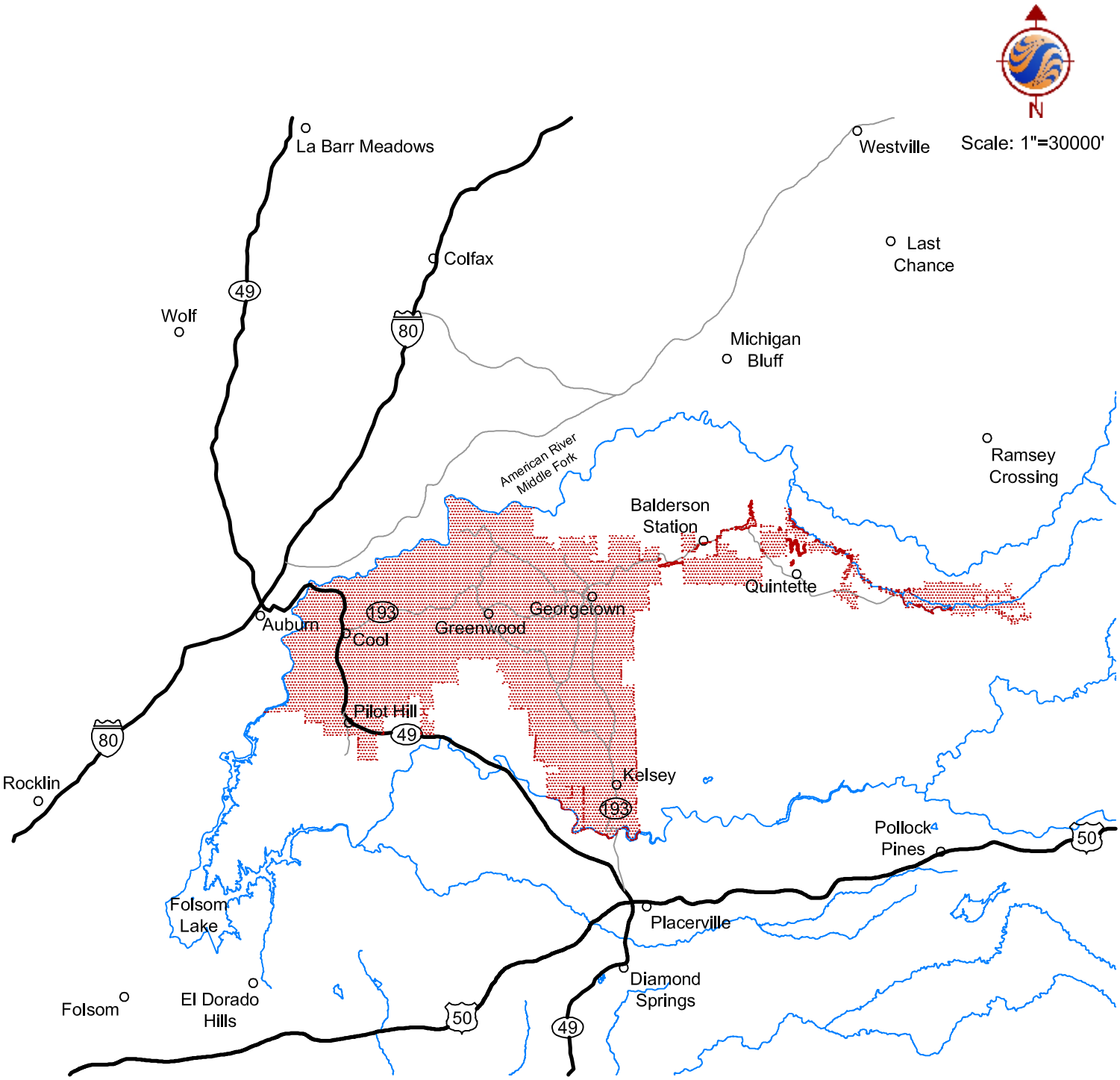
This study has been prepared to meet the regulatory requirements found in Government Code Section 66000 et sequential regarding the establishment of capacity charges also known as water connection fees. The term connection fee is no longer appropriate terminology due to the adoption of AB 1600. This bill renamed this fee to capital facility charges and specified that this fee must be used for capital expansions, and cannot be used for operating expenses. It is necessary for every water purveyor to evaluate CFCs as new development increases and the water system requires expansion. A CFC should reimburse the GDPUD for a new customer's benefit of existing capacity in the GDPUD's water system.

1.1 GEORGETOWN DIVIDE PUBLIC UTILITY DISTRICT (GDPUD)

The GDPUD is situated between the Middle and South Forks of the American River in the foothills of the Sierra Nevada Mountains. This region is best known for its influential role in the California Gold Rush, and for the past 150 years, life on the Divide has been greatly influenced by the people, places, and events of the Gold Rush and the subsequent discovery of "green gold", the Divide's huge tracts of timber. Figure 1 is a vicinity map depicting the location of the GDPUD within the region.

Founded in 1946, the GDPUD is a public utility district operating under the State of California Public Utility Code and Special District Codes & Procedures. The GDPUD comprises 75,000 acres along the northerly boundary of El Dorado County. As of 2005, the GDPUD provided service to approximately 3,400 water connections and serviced 1,100 wastewater disposal accounts. The GDPUD maintains over 137 miles of treated water pipelines, two water treatment plants, numerous water storage tanks, reservoirs, and miles of open canals (See Figure 2 Site Map).

Today, a number of small communities (most dating back to the Gold Rush) are scattered throughout the GDPUD, including Georgetown, Cool, Garden Valley, Kelsey, Greenwood, and Pilot Hill. Georgetown is named after George Phipps, who led a company of sailors to the area during the nineteenth century. Georgetown was the site of a gold camp and trading center for approximately 10,000 miners during the gold rush. It also was the site for Japanese settlers to form and establish the Wakamatsu Colony in 1868 to operate a tea and silk plantation. This



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Legend

- Road
- Highway
- Water Feature
- GDPUD

Client/Project
GDPUD
Facility Reserve Charge Study

Figure No.
1

Title
Vicinity Map

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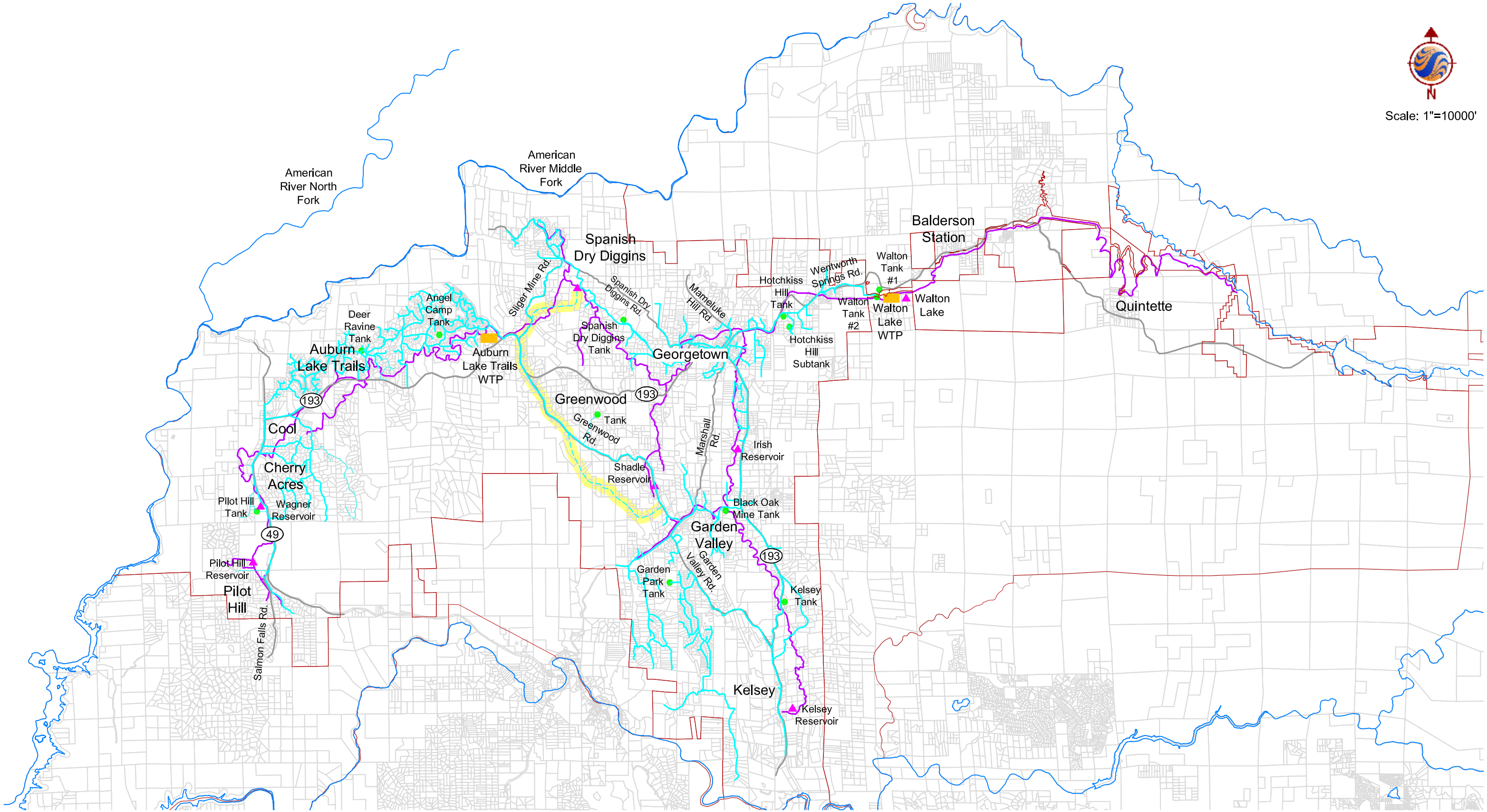

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Legend

- Water System Pipeline
- Ditch System
- GDPUD Boundary
- Highway/Road
- Water Feature
- Reservoir/Lake
- Water Treatment Plant
- Water Tank
- Project Intertie Pipeline
- Proposed Water System Pipeline

Client/Project
GDPUD
Facility Reserve Charge Study

Figure No.
2

Title
Site Map

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venture failed after two years. Today, Georgetown remains “The Pride of the Mountains” for its residents, with the surrounding Sierras and its historical Main Street.

1.2 PURPOSE

In July 2005, Stantec Consulting entered into an agreement with the GDPUD to perform a Capital Facility Charge (CFC) Study/Report. The purpose of this study is to determine a fair CFC for new customers of the GDPUD. As the population grows and new development occurs within the district, the water system infrastructure will require expansion. In developing CFCs for the GDPUD, Stantec endeavored to satisfy the rational nexus criteria generally applied to these types of charges. A rational nexus based CFC must:

- Be rationally based on public policy that demonstrates a nexus between new development and the need to expand or build facilities to accommodate it.
- Not exceed the new development’s proportional share of the cost of facilities needed to serve that development, after crediting it for other contributions that it has already made or will make toward that cost.
- Not be arbitrary or discriminatory in its application to individuals or customer classes.

The CFCs ensure that “growth pays for growth” by allocating the cost of new facilities and the cost of unused capacity in existing facilities to new development while allocating the cost of repairing and refurbishing facilities used by current customers to water rates.

1.2.1 County Government Regulations

On July 19, 2004, the El Dorado County Board of Supervisors adopted a new General Plan for the County. State planning law requires that every County adopt and maintain a General Plan, which is a document that serves as the "blueprint" for development throughout the county. This General Plan is the County's basic planning document and is the vehicle through which the County addresses and balances the competing interests and needs of its residents. Therefore, it is pertinent to plan future infrastructure that is consistent with the needs of the proposed land uses over the next twenty years. The CFCs developed in this study meet the policies stated in the 2004 El Dorado County General Plan, Public Services and Utilities Element. Specifically, General Plan Policy 5.1.2.3 states that the District should ensure that “new development shall be required to pay its proportionate share of the costs of infrastructure improvement required to serve the project to the extent permitted by State Law.”

The recommended CFCs (as a result of this study) meet the regulatory requirements found in Government Code Sections 66012 - 66014 regarding the establishment of capacity charges.

1.3 BACKGROUND

Financial objectives for utility districts can be varied. Districts seek sufficient capital to build projects and sufficient revenue to properly manage, operate and maintain facilities. Also,

districts seek fairness and equity when allocating financial burdens among customers. Utility assets tend to be relatively expensive – partly because most assets are installed underground- and provide long periods of service (up to fifty years or more). It is appropriate to factor growth into the formula of cost allocation. It is often considered inappropriate to have existing customers be entirely responsible for capital costs of future assets, especially those expansion facilities that would not be built if there were no growth. This study utilizes a justified methodology to determine an appropriate Capital Facility Charge while respecting these considerations.

1.3.1 Publications Regarding Capital Facility Charges

Three major publications regarding CFCs for the utility system were reviewed for this study. A basic publication for the water and wastewater industry regarding water system CFCs is Manual M26 published by the American Water Works Association. Manual M26, *Water Rates and Related Charges*, covers a number of water system charges, including CFCs. Other publications reviewed that deal specifically with water system CFCs include George A. Raftelis, *Comprehensive Guide to Water and Wastewater Finance and Pricing*, and Arthur C. Nelson, *System Development Charges for Water, Wastewater, and Stormwater Facilities*.

The most common methodologies for determining water system connection fees are the "system buy-in" and the "incremental facilities" approach which are explained briefly in the paragraphs below.

1.3.1.1 System Buy-In Method

This concept is based on the notion that new customers are entitled to water service at the same price as existing customers. However, existing customers have already provided the facilities that will serve the new customers, including any costs of financing those facilities. Under this buy-in method, new customers pay an amount equal to the net investment already made by existing customers in the facilities. As described in Manual M26 (American Water Works Association), net investment is based on actual cost less depreciation. This net equity investment is then divided by the number of total / new customers to determine the amount of payment required from the new customer to buy in to the utility at parity with existing customers. Once new customers have paid the CFC, they become equivalent to existing customers and share the responsibility for existing facilities. When additional costs are incurred for system improvements, replacement, or expansion, all customers share the costs of such improvements through monthly user fees.

1.3.1.2 Incremental Cost-Pricing Method

As detailed in Manual M26, when new customers connect to the water system, they benefit from reserve capacity available in existing facilities or require new capacity. If existing available capacity is used, it must be replaced. If new capacity is required, it must be constructed. Both situations require funding for capital facility improvements. Under the incremental cost-pricing method, new customers would pay for their use of the reserve capacity and for new facilities necessary to provide service to them. The goal of this method is to minimize or eliminate the

need to raise rates to provide for system expansion. As a result, new customers pay fully for the additional facilities without imposing a burden on existing customers.

Due to the current financial structuring of the GDPUD, this study utilizes a combination of both the system buy-in method and the incremental cost-pricing method. Blending these two approaches is common. In the case of the GDPUD, the blended approach includes a partial buy-in; for example, existing assets that have available capacity to serve new customers, combined with the new assets in which specific facilities to accommodate growth are included.

1.4 APPROACH

The CFCs recommended for the GDPUD reflect economic and legal principles for determining capacity charges and impact fees generally, and also reflects the practices of other water agencies in California.

Chapter two of this report outlines the projected population growth in El Dorado County and within the GDPUD service area. This chapter summarizes recent studies of future water demand for the GDPUD. A complete residential build out analysis and assumptions are also presented in chapter two.

With an understanding of projected growth in the area, chapter three details the current charges for new connections within the GDPUD and current charges for new connections within the surrounding water purveyors of El Dorado and Placer Counties.

Chapter four details the process for calculating a unit cost of water from the GDPUD system and a proportional fair CFC for new connections. This approach satisfies rational nexus criteria required by the California Government Code.

This Capital Facility Charge Study was developed for a twenty-year timeline and serves as a tool to project future capital improvements based on historical development, existing conditions, and future land use planning within the district. As Capital Improvement Plans (CIPs) are adopted on a yearly basis to carry out the water supply of the district as outlined in this document, the ultimate Capital Facility Charge may be amended as necessary to reflect infrastructure needs of the burgeoning communities constituents, future advancements in water treatment technology, and the mutability of water quality in general.

2.0 Population and Water Demand Forecasts

2.1 LAND USE ANALYSIS AND BUILDOUT PROJECTION

2.1.1 Growth Trends

El Dorado County has experienced rapid population growth since the 1970s and is projected to grow by 30,000 households over the next 20 years. Historically, growth in El Dorado County resulted in compact development patterns. Communities such as Cool, Georgetown, and Placerville were small, mixed-use communities where residents lived, worked, and shopped. Recently, although urban-like development has continued in the foothills, large-lot, low-density residential development has infused a more rural lifestyle throughout the county. The natural rural areas are slowly transforming into residential lands requiring additional public infrastructure to support a more intense stewardship.

A comparison of the 1990 and 2000 Census data (see Table 1 below) shows significant growth throughout El Dorado County. The GDPUD only services unincorporated areas within the county, which experienced 28% growth between 1990 and 2000.

Table 1: Comparison of 1990 and 2000 Population in El Dorado County

	El Dorado County Comparison of 1990 and 2000 Population		
	1990	**2000**	**% Change**
Population, Entire County	125,995	156,299	24
Population, Unincorporated County	96,054	123,080	28

Source: U.S. Census Bureau: Table P1 for the 1990 and 2000 Census counts.

In March 2002, Economic and Planning Systems, Inc. (EPS) completed a detailed land use forecast for the West Slope of El Dorado County. The West Slope area referenced in that report includes the GDPUD area. Based on market research, historical growth patterns, and SACOG projections, EPS estimated that an additional 78,000 people could reside in El Dorado County by 2025, reflecting overall growth of 33%. According to this projection, it is expected that the West Slope population would increase 64% between 2000 and 2025.

2.1.2 Water Demand Forecast

The demand for water in El Dorado County and the GDPUD over the next twenty years will be related to growth and new development. Understanding the projected water demand is crucial in determining a fair connection fee for new customers in the GDPUD. Agricultural land uses provide a significant amount of demand for water in the GDPUD along with residential and commercial uses.

Prior to updating the El Dorado County General Plan, as part of the Environmental Impact Report (EIR) process, Economic and Planning Systems, Inc. (EPS) developed water demand projections for El Dorado County. These are based on land use forecasts, the distribution of land uses between the major water purveyors, and water demand factors provided by the water purveyors. The land use projections were multiplied by a water demand factor to estimate the water demand for each of the major water purveyors and the remaining county area.

EPS developed projections for each of the four alternatives addressed in the EIR. This CFC study assumes the Environmentally Constrained Alternative was the basis for updating the El Dorado County General Plan. That alternative was based on a reduced overall build out capacity of the County as determined by reassigned land use designations proposed by County planning staff on a parcel-by-parcel level. It also included a mixed-use component for commercial properties, with 10 percent of commercial acres designated to have a residential component. Densities in this alternative vary between land uses designated as a Community Region or a Rural Center. For all residential land uses, excluding the mixed-use component, it was assumed that parcels would build out at maximum densities.

These characteristics are consistent with the updated 2004 El Dorado County General Plan policies and assumptions. Therefore, it is realistic to reference the forecasts produced for the Environmentally Constrained Alternative in this CFC study for determining a new connection fee.

Table 2 summarizes the residential and employment projections by EPS for the GDPUD. Their study shows the potential for 5,141 new residential units between 1999 and General Plan Build Out.

The GDPUD provided the following information regarding typical water demand in acre-feet per year. An acre-foot of water is the amount of water necessary to cover on acre of land 1 foot deep. A residential unit demands .48 acre-feet per year. A typical employee (commercial, industrial, or office) demands .18 acre-feet per year. Wood Rodgers, Inc. developed the projected irrigation uses for the GDPUD service area as follows: 11,770 acre-feet per year in 2025 and 17,530 acre-feet per year at general plan build out. Using these water demand factors, EPS calculated the total water demand for the GDPUD to be 10,956 acre-feet per year in 1999, 15,787 acre-feet per year in 2025, and 20,415 acre-feet per year at General Plan build out.

Table 2: Summary of Growth Projections for Georgetown Divide Public Utility District

GDPUD Growth Projections Summary	1999	2025	Build Out
Residential Units	3,272	4,302	8,413
Employment	1,341	2,069	7,077
Total Water Demand (acre feet per year)	10,956	15,787	20,415

2.1.3 Build Out Analysis

The El Dorado County General Plan and land use designations have been updated since the projections developed by EPS (as provided in the previous section). Using land use information provided by El Dorado County and under the guidance of the GDPUD, a new analysis of potential development was conducted for this study. This section details the assumptions and methods used to estimate the number of new connections projected for the next twenty years.

2.1.3.1 Assumptions

No annexations: Over the last twenty years, the GDPUD has had insignificant – minimal growth in terms of annexations. For this reason, the future projection is that annexations to the district will be insignificant over the next twenty years. This report assumes that the GDPUD will not significantly change the boundary for the service area.

New connections will be from new development: The GDPUD has not experienced an increase in customers from existing developed properties. Residences on wells are most likely to remain on wells for the foreseeable future. During the drought of the late 1970s several miles of pipeline were installed and new connections made due to well failures. It is assumed residences that did not connect in previous droughts will not demand connection in the future. Residences connected to the system are not likely to increase their demand (by adding additional units) for the foreseeable future. This study assumes that new connections to the treated water system will come from development of currently vacant properties. It should be noted that there is no policy requiring new development to connect to the treated water system. If a property meets County requirements, it may be developed with a well on site. GDPUD has been contacted by developers and current residents to connect to the system, but substantial connections have yet not been requested.

General Plan maximum densities: This build out analysis uses maximum densities allowed in the General Plan. This allows the assumption that the more strict zoning regulations (used to implement the General Plan) may change as development occurs. It should be noted that the calculations of maximum density in this build out analysis do not include environmental constraints to development such as slopes, creek setbacks, etc. However, the El Dorado County General Plan update process did consider these environmental constraints in designating the new land uses. The calculations are based strictly on area.

Impact from land use overlay designations will be insignificant: The applicable land use overlays identified in the El Dorado County General Plan are the Agricultural District, the Mineral Resources Zone, and the Important Biological Corridor. The areas of these overlays are generally designated for agricultural land use, natural resources, or rural residential land use; therefore, the added impacts would be minimal to the potential residential units estimated in this build out analysis.

For the purposes of developing a justified connection fee for new customers, this build out analysis provides a reasonable estimation for development and future residential demand for water. Based on the demand for water and the infrastructure necessary to deliver that water the GDPUD's CIP was reviewed and adjusted to reflect the required water system infrastructure.

2.1.3.2 Data

This build out analysis was calculated using El Dorado County's GIS parcel data accompanied by a list of GDPUD customers. The GIS parcel data is part of the County's Geographic Information System. It is a means of tracking spatial data, such as maps, linked to database information. The El Dorado County Planning Department provided a digital parcel shapefile (GIS file format) in which each parcel is coded with its General Plan land use designation. The applicable overlay categories are also identified in this shapefile. The El Dorado County Survey Department provided the same parcel shapefile with each parcel coded as to its development status. These are shown in Figure 3, Vacant and Developed Parcels.

2.1.3.3 Methodology

The customer information provided by the GDPUD listed 3,578 unique Assessor Parcel Numbers (APN). Of these APNs, 3,490 matched the APNs in the shapefiles provided by the County. Using ESRI's ArcGIS 9.0 software, the customer numbers were linked to the parcel map (shapefile). This allowed the vacant parcels that are not current customers to GDPUD to be identified. According to the previously stated assumptions, these are the properties that are likely to develop and connect to the water system in the future.

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Legend

GDPUD Boundary

Water System Pipes

Development Status

Vacant Land

Developed Land

Agricultural Preserve

Timber Preserve

Client/Project
GDPUD
Facility Reserve Charge Study

Figure No.
3

Title
Vacant and Developed Lands

Table 3: Vacant, Non-Customer Parcels at General Plan Build Out

Land Use Designation	# of Parcels	Acres	Max. Density	# of Potential Residential Units
Agricultural Lands	33	1071.805	0.05	53.59
Commercial	53	158.3563	4 du/ac in Rural Centers	0.00
High Density Residential	80	35.6645	2 du/ac (standard subdivision)	71.33
Industrial	1	151.3828	---	---
Low Density Residential	330	5906.277	1 du/5 ac	1,181.26
Medium Density Residential	368	975.4348	1 du/ac	975.43
Multi-Family Residential	7	52.87251	24 du/ac	1,268.94
Natural Resources	76	2216.585	1 du/160 ac outside National Forest Service lands and within "timber production areas"; 1 du/40 acres within river canyons outside "timber production areas.". If unsuitable for "timber production" 1 du/40 acres.	
Natural Resources-Timberland Preserve Zoning	4	85.36038	.00625 du/ac	0.53
Open Space	13	396.5656	---	---
Public Facilities	5	79.92219	---	---
Rural Residential	485	10748.82	1 du/10 acres	1,074.88
Tourist Recreational	1	0.684499	---	---
			Total # of Potential Res. Units	**4,625.97**

2.1.3.4 Analysis

Table 3, above, summarizes the acreage for each land use within the vacant, non-customer properties. Based on the maximum allowable densities specified in the El Dorado County General Plan, the low density residential land use designation yielded the greatest potential of residential units at 1,181 dwelling units for currently vacant, non-customer properties. The multi-family residential and rural residential land uses generated the next highest numbers of possible new residential units with 1,268 and 1,074 potential units respectively. Medium-density residential reflects a potential yield of 975 dwelling units. High-density residential land use could potentially result in 71 new residences. In addition to residential land uses, the number of potential residential units to support agricultural land use is 53. The GDPUD service area has a potential for 4,625 new residential units based on the maximum allowable densities in the General Plan. Given the water demand factor of .48 acre-feet per year per dwelling unit, this would add a demand for 2,220 acre-feet per year to the GDPUD water system.

The number of potential residential units reflects just that, potential residential units. It does not reflect actual future development. All 4,625 units may not be feasible due to environmental constraints and the overlay restrictions described in the assumptions section above. It should be understood that this projection is used for estimation purposes only. Some new residences may decide to install wells rather than connect to the water system.

2.1.4 Agriculture and the Miner's Inch

Agriculture in the Sierra Foothills is substantially different from agriculture within the Central Valley. It has been an important sector in El Dorado County from the standpoint of economics, open space, and recreation. The growing metropolitan population in the Sacramento Region will continue to fuel the demand for greater access to agri-tourism type activities, such as the existing Apple Hill.

As stated previously, the projected water demand for agricultural uses will be 11,770 acre-feet per year in 2025 and 17,530 acre-feet per year at General Plan build out. Currently, the GDPUD is serving 4,463 acre-feet per year for agricultural uses. This is typically through a miner's inch connection. These projections assume that reliable, affordable water supplies are available in the future. The agricultural water demand figures are contingent upon the raw water facilities necessary to provide agricultural irrigation water still being in place.

The future of agriculture in El Dorado County will be influenced by policies related to land use, water supply, and water supply infrastructure. For this reason, it is imperative that this CFC study address agricultural needs for water service.

Currently, agricultural needs are being met by using miner's inch connections to the raw water system. A miner's inch is the volume of water that will flow through a 1" square opening with six inches of head above the opening over a period of 24 hours. The pressure from the six inches of head pushes the water at a consistent flow out of the 1" opening. One miner's inch equals 1.5 cubic feet per minute, or 11.22 gallons per minute. The GDPUD provides agricultural irrigation water 153 days out of the year during the dry season. One miner's inch over the irrigation

season if running 24 hours per day can provide a maximum amount of 2.5 million gallons. The flow rate of 20 miner's inches would produce approximately one acre foot per day.

Agricultural uses typically do not require treated water. The GDPUD currently charges a connection fee of $2000.00 for agricultural accounts. One major component to the raw water system is the ditch system, shown on Figure 2, Site Map. The ditch system is a series of pipelines, lined and un-lined ditches. Construction of this system began in the 1800s. The system continues to undergo maintenance repairs and upgrades are generally associated with the treated water system and water conservation efforts. Agricultural properties pay the monthly users fee for the amount of water taken from the raw water system. The user fees paid by agricultural customers attempt to cover the costs of maintenance and operations for delivery of the water through the GDPUD canal system.

Land Use Designations

The El Dorado County General Plan guides how and where future development occurs. Within the El Dorado County General Plan, the Land Use Element sets forth specific goals, objectives, and policies to guide the intensity, location, and distribution of land uses. The communities served by the GDPUD include Cool, Garden Valley, Greenwood, Georgetown, Kelsey, and Pilot Hill. All six communities have been identified as Rural Centers within the General Plan.

Rural Centers are identified as places of focused activities that provide food and services to the surrounding areas. The remaining areas served by the GDPUD are classified in the General Plan as Rural Regions. Rural Regions include land use patterns that maintain the open character of El Dorado County, preserve its natural resources, recognize the constraints of the land and the limited availability of infrastructure and public services, and preserve the agricultural and forest-timber area to ensure its long-term viability for agriculture and timber operations.

This section summarizes the land use designations that apply to the GDPUD:

The land use designations that apply to the GDPUD are visually presented in Figure 4, GDPUD General Plan Land Use Designations and summarized below.

There are five categories of residential land use designations that apply to the GDPUD. The Multi-family Residential (MFR) land use designation identifies areas suitable for high-density, multi-family structures such as apartments, single-family attached dwelling units, and multiplexes. The High-Density Residential (HDR) land use designation establishes areas suitable for intensive single-family residential development. The Medium-Density Residential (MDR) land use designation identifies areas suitable for detached single-family residences with larger lot sizes, which allow for agricultural land management activities. The Low-Density Residential (LDR) land use designation applies to areas for single-family residential development in a rural setting. The Rural Residential (RR) land use designation establishes areas for residential and agricultural development, and serves as a transition between areas designated as Low-Density Residential and Natural Resource land uses.

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Stantec

Legend

- Water System Pipes
- Commercial
- Industrial
- Rural Residential
- Low Density Residential
- Medium Density Residential
- Multi-Family Residential
- High Density Residential
- Agricultural Lands
- Natural Resources
- Open Space
- Public Facilities
- Tourist Recreational
- GDPUD Boundary

Client/Project
GDPUD
Facility Reserve Charge Study

Figure No.
4

Title
General Plan Land Use Designations

Agricultural Lands (AL) refer to lands that are of sufficient size to sustain agricultural use. Areas with the Natural Resource (NR) land use designation contain economically viable natural resources and are intended to protect the economic viability of those resources and those engaged in the harvesting/processing of those resources. Open space (OS) areas are public lands under government title where no development other than that specifically needed for government-related open space uses is desired.

The Commercial (C) land use category is intended to provide a full range of commercial retail, office, and service uses to serve the residents, businesses, and visitors of El Dorado County. The Industrial (I) land use category is designated for a range of light and heavy industrial uses, such as manufacturing, processing, distribution, and storage.

Public Facilities (PF) include only publicly owned lands used for public facilities such as sanitary landfills, storage and maintenance yards, regional parks and recreation facilities, schools, and libraries. The Tourist Recreational (TR) land use category is to provide areas for tourist and resident serving recreational uses, transit and seasonal lodging facilities, and supporting commercial activities. The land use category would have differing intensities of use based on the location.

In addition to the above designated land uses, overlay designations have been established to provide additional direction for the development of land. Figure 5 shows the land use designations for all vacant non GDPUD customer parcels.

The Agricultural District overlay designation identifies general areas that contain the majority of the County's federally designated prime, State designated unique or important, or County designated locally important soils, and which the Board of Supervisors has determined should be preserved primarily for agricultural uses. The Platted Lands overlay designation identifies isolated areas consisting of contiguous existing smaller parcels in the Rural Regions where the existing density level of the parcels would be an inappropriate land use designation for the area based on capability constraints and/or based on the existence of important natural resources.

The Ecological Preserve overlay designation identifies those properties in public or private ownership which have the potential to be established or have been established as habitat preserve areas for rare or endangered plant and animal species and/or critical wildlife habitat and/or natural communities of high quality or of Statewide importance. The Mineral Resource overlay designation identifies those areas that are designated as Mineral Resource Zone 2 on the State Classification Reports. The Important Biological Corridor overlay applies to lands that are identified as having high wildlife habitat values.

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Legend

- Water System Pipes
- GDPUD Parcel Boundaries
- Existing GDPUD Customer
- Commercial
- Industrial
- Rural Residential
- Low Density Residential
- Medium Density Residential
- Multi-Family Residential
- High Density Residential
- Agricultural Lands
- Natural Resources
- Open Space
- Public Facilities
- Tourist Recreational
- GDPUD Boundary

Client/Project
GDPUD
Facility Reserve Charge Study

Figure No.
5

Title
Land Use Designations for Vacant, Non-Customer Parcels

3.0 Current Water System Connection Fees

There are several components to determining the recommended CFCs. This chapter covers three main components. This chapter begins with providing an evaluation of the current connection fees charged by the GDPUD and ends with a summary of connection fees for surrounding and respected water purveyors.

3.1 CURRENT GDPUD CHARGES

GDPUD Water Ordinances 94-03 and 94-04, adopted in 1994 describe the current charges

for a new connection to the water system.

Ordinance 94-03 outlines the purpose and need for a water development charge for new connections to the system to attain the appropriate amount of funding to complete studies for acquisition of additional water sources for the GDPUD. The 93-03 Ordinance established a Water Development Charge of $2,000.00 to pursue supplemental water supplies.

Ordinance 94-04 outlines the need for treatment plant expansion, storage facilities, and pipelines needed to maintain service within GDPUD service areas. The GDPUD will utilize funds garnered through the charges to expand treatment and storage facilities. The 94-04 Ordinance sets forth the charges separately as follows: treatment plant expansion - $995; pipeline charge - $595; storage charge - $700; service connection charge - $650; and meter installation charge - $100.

The total cost for connection established by Ordinances 94-03 and 94-04 amounted to $5,000 per connection.

It is the goal of this CFC study to recommend the appropriate changes to reflect present day and future needs of the GDPUD. Upon adoption of this study, including the recommended fees, both Ordinance 94-03 and 94-04 establishing the current fees and charges, would be replaced by those outlined in this study.

3.1.1 Generalized Benefit for the Entire District

The recommended process as a result of this study is to charge one uniform CFC to all new customers. The water system is one complete system, which benefits each connection. The system is not divided into sub areas that can be used to determine varying connection fees.

The GDPUD Water System Reliability Study prepared by KASL Engineering in November 2002 was used to establish the connection between improvements required to support growth and benefits to the new connection. Water storage and conveyance throughout the system benefits all users. Therefore the cost to connect to the system should not differ depending on where a new customer connects. With implementation of the CIP the entire district can be ensured reliable service. In addition, the CIP allows for added security of the treated water supply that also benefits the entire district and not just isolated areas of the district.

3.2 COMPARISON OF OTHER WATER PURVEYORS

To aid in the determination of this CFC, connection fees from regional water purveyors were evaluated to serve as a basis for comparison to our recommended CFC for the GDPUD.

As a point of comparison, this study includes a survey of the water purveyors in El Dorado and Placer Counties. This survey provides an understanding of water connection fees for new residences in the region surrounding the Georgetown Divide. This section provides a summary of the connection fees for these water purveyors.

3.2.1 El Dorado County

The primary sources of potable water in El Dorado County are surface water resources. Rural areas where surface water is in short supply or where surface water delivery systems are absent rely on groundwater resources. There are five primary public water providers in El Dorado County, all of which are independent public entities:

- El Dorado Irrigation District (EID), which provides water to the southwestern part of the county from El Dorado Hills to Placerville;
- Georgetown Divide Public Utility District (GDPUD), which provides water to the Georgetown Divide;
- Grizzly Flats Community Services District (GFCSD), which provides water to the Grizzly Flat Rural Center;
- South Lake Tahoe Public Utility District (STPUD), which provides water to South Lake Tahoe and surrounding unincorporated areas; and
- Tahoe City Public Utility District (TCPUD), which provides water to the communities along the west shore of Lake Tahoe.

The connection fees for these water purveyors (with the exception of the GDPUD for whom this study is being completed) are summarized in Table 4 and described below.

EL DORADO IRRIGATION DISTRICT

There are two areas within the El Dorado Irrigation District (EID): El Dorado Hills and the Motherlode. Connection fees in El Dorado Hills are higher due to the cost of building infrastructure in that area. The Motherlode is essentially the rest of the district that is serviced with treated water. For a ¾" (typical single family residential) connection, the Facility Capacity Charge is $12, 518 in El Dorado Hills and $8,517 in the Motherlode area. In both areas, the water meter hardware costs $537 in addition to the Facility Capacity Charge. If the property does not have an outlet, the District charges time and materials to tap the main and provide the outlet, which generally costs $1200 - $1800.

For a multi-family development, each unit is charged 75% of the above Facility Capacity Charge plus the cost of the water meter hardware ($537). Commercial connection fees are determined on a case-by-case basis because they depend on the size of the connection and number of meters that will be located on the site.

GEORGETOWN DIVIDE PUBLIC UTILITY DISTRICT

This study is being conducted under the direction of the Georgetown Divide Public Utility District. An assessment of the current connection fees for this district is discussed in the previous section (Section 3.2 Current Charges).

GRIZZLY FLATS COMMUNITY SERVICES DISTRICT

A typical single-family residential connection in the Grizzly Flats Community Services District costs $5,650. Commercial and Industrial uses within the district are already connected, but the connection fee would most likely be the same as that for a residential connection.

SOUTH TAHOE PUBLIC UTILITY DISTRICT

The South Tahoe Public Utility District is a public agency that was formed in 1950. The District provides wastewater collection, treatment and recycling and drinking water to the community of South Lake Tahoe.

A ¾" service costs $2,863.92. A property requiring a fire line would incur additional costs. Commercial and Industrial uses go through a lengthy process to determine the estimated usage (based on the size of the building and other factors).

TAHOE CITY PUBLIC UTILITY DISTRICT

The Tahoe City Public Utility District was founded in 1938 to provide some of the governmental needs of the residents of Tahoe City. Sewer collection, parks facilities, and recreation services are provided for the entire area of the District. Water service is provided in three separate systems and serves approximately half of the homes and businesses in the District.

- Water customers - 3,500

- Sewer customers - 7,300
- Parks and recreation customers - over 500,000

The boundaries of the District extend from Emerald Bay to Dollar Hill and along the Truckee River to the Nevada County line. The service area is very large, encompassing almost 22 square miles. The water connection fees for the Tahoe City Public Utility District are as follows:

- 5/8" = $2,000
- ¾" = $2,500
- 1" = $3,000
- 11/5" = $6,000
- 2" = $9,600

3.2.2 Placer County

PLACER COUNTY WATER AGENCY

The Placer County Water Agency encompasses the entire, 1,500-square-mile, boundary of Placer County, ranging from the rim of the Sacramento Valley on the west to the Sierra Nevada and Lake Tahoe on the east. PCWA carries out a broad range of responsibility including water resource planning and management, retail and wholesale supply of irrigation water and drinking water, and production of hydroelectric energy.

For a 5/8" (1,150 gallons per day) connection in zone 1 (Roseville, Rocklin, Auburn, Loomis), the demand fee is $11,096. A 5/8" connection is used as a baseline for all connections within the PCWA, including standard single-family residences. The water connection fee, which includes water meter hardware (approximately $310) and installation, is determined according to certain specifications. If it is an individual connection, the Agency charges on a time and materials basis.

Commercial and industrial connection fees are determined on an individual basis (depending on the size of the meter and projected water demand).

SAN JUAN WATER DISTRICT

The San Juan Water District is a community services district that was created in 1954. This district purveys water to customers in south Placer County as well as eastern parts of Sacramento County. The connection fee for a subdivision where the developer has paid Capital Facility Fees is $2,210 (this fee includes the water meter hardware and meter inspection). If these fees have not been paid, the fee is approximately $18,000/acre for standard single-family residential units. However, this fee is generally determined on a case-by-case basis. Assuming

five housing units per acre in a typical subdivision connection fees would be approximately $5,810.00 per unit.

NEVADA IRRIGATION DISTRICT

The Nevada Irrigation District (NID) is an independent California special district operated by and for the people who own land within its 287,000-acre boundaries. The district is organized primarily to supply water for irrigation, municipal, domestic and industrial purposes. NID water is available in areas of Nevada and Placer counties and the district also has storage and distribution facilities in Sierra and Yuba counties. Unique in many respects, NID collects water from its own high mountain watershed, operates a network of water treatment plants, produces hydroelectric power and provides outdoor recreation.

The district remains committed to the supply of irrigation water, but since the 1970s, most new customers have applied for treated water service. Today, three of every four customers use treated drinking water. Average water use is 400 gallons per home per day. Treated water service areas are located in and around Grass Valley and Nevada City, Banner Mountain, the Glenbrook Basin, Loma Rica, Alta Sierra, Lake of the Pines, Penn Valley, Lake Wildwood, Smartville and North Auburn.

Generally, treated water is available in the more populated areas. It is expensive to extend treated water main lines into rural areas where there are few customers to share the costs. In recent years, the district has been successful in working with local property owners to form local water quality improvement districts. NID presently operates 7 water treatment plants that supply some 3 billion gallons, or approximately 9,000 acre-feet, of treated drinking water per year. State-licensed and certified technicians operate the plants. Water treatment processes include chlorination, coagulation, flocculation, sedimentation and filtration. NID treated water meets and exceeds standards set by the California Department of Health Services.

In recent years, NID has supplied an average 145,000 acre-feet of water per year. About 90 percent of this total is used for local agriculture.

There are many factors in determining the connection fee, but the basic meter and connection fees for the Nevada Irrigation District are as follows: 5/8” = $5,980 and ¾” = $9,365

Table 4: Summary of Regional Connection Fees

Water Purveyor	Connection Size	Facility Capacity Charge	Water Meter Charge
El Dorado Irrigation District			
El Dorado Hills Area	3/4" SFR	$12,518	$537
Motherlode Area	3/4" SFR	$8,517	$537
	3/4" MFR	75% of FCC	$537
Grizzly Flats Community Services District	3/4"	$5,650	
South Tahoe Public Utility District	3/4"	$2,863.92	
Tahoe City Public Utility District	5/8"	$2,000	
	3/4"	$2,500	
	1"	$3,000	
	1.5"	$6,000	
	2"	$9,600	
Placer County Water Agency			
Zone 1: Roseville, Rocklin, Auburn, Loomis	5/8"	$11,096	$310
San Juan Water District		$2,210*	
		$18,000**	
Nevada Irrigation District	5/8"	$5,980	
	3/4"	$9,365	

*Applicable fee where developer has already paid Capital Facility Fees
**Approximate total fee including Capital Facility Fees
SFR = Single Family Residential
MFR = Multi - Family Residential

4.0 Capital Facility Charge Development Methodology

This chapter details the development methodology used to calculate a Capital Facility Charge based on the following: replacement cost of current assets, capital improvement program expenditures, available funding, water system capacity, unit costs of water, and average water usage.

Portions of the water system require expansion or replacement to accommodate new customers. These costs along with estimated future land development are used to set the connection fee, or Capital Facility Charge (CFC), for new customers in the GDPUD. The CFC should be a reasonable rate reflecting a proportionate fair share of the water system capacity.

The CFC developed in this study satisfies rational nexus criteria. In accordance with other Capital Facility Charge studies, a rational nexus-based CFC should:

- Not be arbitrary, discriminatory, or capricious in its application to individuals or customer classes.
- Not exceed the new development's proportional fair share of the cost of facilities needed to serve that development, after crediting it for other contributions it has already made or will make toward that cost.
- Be rationally based on public policy that demonstrates a nexus between new development and the need to expand or build facilities to accommodate it.

The methodology used to develop the CFCs in this study consisted of the following steps:

- Prepared an inventory of current system assets and determined the replacement cost for each asset.
- Prepared a list of projected capital expenditures and reliability measure recommendations that will be built and paid for in the near future.
- Estimated the amount of available financing: new debt service and contributed capital.
- Determined the capacity of the current system.
- Determined the amount of new development.
- Calculated the unit cost of capital facilities.
- Prepared a schedule of capital facility charges.

The development steps are explained in detail in the following sections.

4.1.1 Inventory and Replacement Cost of Current Assets

An inventory of the current water system assets includes water treatment facilities, storage tanks, pump stations, and distribution mains. The GDPUD water system consists of 2 water treatment plants, 11 storage tank locations, 3 pump station locations, and 137 miles of pipelines.

Wells, service lateral pipes, and water meters are not applicable to the inventory for this study. Wells are privately owned and not considered part of the GDPUD water system. Service lateral pipes and water meters directly benefit each individual customer and are not considered part of the infrastructure, which provides common benefit. Operational expenses, paid for by existing and future water rate customers, are also not included in the inventory. The inventory includes only those assets that benefit all users and are part of the infrastructure.

Stantec Consulting determined replacements costs for the water treatment facilities, storage tanks, pump stations, and pipelines. These replacement costs for the GDPUD water system are shown in Table 5, Water System Structures Replacement Cost (2005 dollars) and Table 6, Water System Pipelines Replacement Cost (2005 Dollars). The detailed development of the water system replacement costs is located in Appendix C, Water System Replacement Costs Developed by Stantec Consulting Ltd.

The total replacement cost for the two existing water treatment plants (Walton Lake and Auburn Lake Trails) is $13,800,000 and the total cost to replace the tanks and pump stations in the GDPUD system is $4,896,235. Replacing all of the pipelines would cost $37,120,461. These costs are shown in Tables 5 and 6 and are in 2005 dollars.

Inflation adjustments to the replacement costs of the water system are shown in Table 9, Water System Capital Facility Charge. Each successive year has an annual inflation rate of 3%, compounded annually, applied to the cost in the previous year? This is based on the September 2005 ENRCCI.

4.1.2 Projected Capital Improvement Program Expenditures

In May 2005 the GDPUD adopted a Five-Year Capital Improvement Program to serve as a planning tool for the GDPUD staff to organize capital expenditures. These expenditures outline the top priorities for the GDPUD.

A list of the Capital Improvement Program expenditures and present day costs is shown in the top portion of Table 7, Water System Capital Improvement Costs and Reliability Measure Recommendations (2005 Dollars). Inflation adjustments to those costs are shown in Table 8, Water System Capital Improvement Costs and Reliability Measure Recommendations (Adjusted Dollars), and they are presented for planning and budgeting purposes. The reliability measure recommendations apply to the water and raw water systems. They were developed for the GDPUD to identify and prioritize repairs, upgrades, and measures to reliably meet customer water demands.

A significant expenditure from the Capital Improvement Program will directly benefit new development. That is the construction of the new Greenwood Lake water treatment plant to replace the existing Auburn Lake Trails water treatment plant. Another benefit is the replacement of the Greenwood Road water main. Replacing this main would increase the ability of either the Greenwood Lake or Walton Lake WTPs to maintain service for the entire GDPUD if one of the plants were offline. The Capital Facility Charge to new customers reflects the costs for these benefits.

Some reliability measure recommendations directly benefit new development, but they are not used in the calculation or development of the Capital Facility Charge. They are listed Tables 7 and 8 as an information resource for GDPUD management, budgeting, and planning purposes.

The GDPUD Five-Year CIP, May 2005, shows the estimate for the Greenwood Lake WTP is $6,250,000, and for the design capacity of 3.0 MGD the cost per gallon of water produced is $2.08. Stantec Consulting Ltd. estimates the cost in 2007 dollars per gallon produced is $3.61, and the additional charge of 20% is required for a construction contingency. This results in an estimated cost for the Greenwood Lake WTP of $13,000,000.

4.1.2.1 New Greenwood Lake Water Treatment Plant

The existing Auburn Lake Trails Water Treatment Plant (ALT WTP) is not in compliance with California code for safe drinking water standards. Rather than upgrade the ALT WTP, a new plant has been proposed near Greenwood Lake (GL WTP). The GDPUD plans to abandon the ALT WTP due to its outdated technology, site constraints, and energy savings.

Built in 1971, the ALT WTP relies on pressure filtration, which is an old technology. Components of the plant include its operations building, pressure filter, a clarifier that in now bypassed, an old clearwell, high- and low-service booster pumps, disinfection system, pipes, and accessories. The pressure filtration system of this plant is not an approved technology by the DHS.

The location of the ALT WTP makes expansion at this facility costly and impractical. Built within the Auburn Lake Trails residential development, the ALT WTP lot is constrained by the neighborhoods that surround it. The lot's sloping geography, the limited land around the plant, and its operational issues (smell, noise) near homes conflict with upgrade plans at the current location. Further, the ALT WTP lies near the end of GDPUD's raw water conveyance. Because of its remote location and low elevation, treated water must be pumped back uphill.

Unlike ALT WTP, Greenwood Lake is centrally located within the GDPUD. Replacement capacity at the proposed Greenwood Lake WTP (GL WTP) would be positioned to improve efficiencies in pipelines and would allow a treated water inter-tie with GDPUD's other WTP at Walton Lake. The proposed site is located at a relatively high elevation and would allow gravity to convey water, minimizing pumping costs.

The cost benefits of a new plant with new technology outweigh upgrading the old. For superior water quality and prudent capital investment, both GDPUD and DHS favor construction of a

modern WTP over upgrading the ALT WTP. The GDPUD has adopted the Greenwood Lake WTP construction plans as part of the district's capital improvement plan (CIP).

The Greenwood Lake Water Treatment Plant will utilize the Greenwood Lake as its fore bay for raw water storage and for continued deliveries of raw water to agricultural customers.

As currently envisioned, the Greenwood Lake WTP would provide the District with the following major benefits:

- Increased treated water production capability;
- Facilities capable of meeting more stringent State and Federal requirements of drinking water;
- Reduction in long-term pumping costs;
- Increase in raw and treated water storage;
- Reduction in long-term operations and maintenance (O&M) costs;
- Enhanced overall system reliability;
- Use of a potentially higher quality raw water source and use of GDPUD's existing property for new facilities;
- A new command and control center; and
- Enhanced system security.

The Auburn Lake Trails Water Treatment Plant will be decommissioned upon the operation of the Greenwood Lake Water Treatment Plant.

4.1.3 Available Financing

The Capital Facility Charge is intended to reimburse the necessary Capital Improvement Program expenditures that benefit new development. In addition to the CFCs the following funding has been identified.

4.1.3.1 Contributed Capital

Contributed capital to the CIP projected expenditures is available through Federal grants. These funds will help pay a portion of the development costs for the new Greenwood Lake water treatment plant replacing the Auburn Lake Trails water treatment plant in the GDPUD. The Greenwood Lake water treatment plant will be located adjacent to Greenwood Lake with an operating capacity of 3 million gallons per day (MGD). The decommissioning of the Auburn Lake Trails water treatment plant and operation of the Greenwood Lake water treatment plant is scheduled for 2007. The funds expected from Federal grants for the construction of the

Greenwood Lake water treatment plant have been deducted from the calculated replacement costs for the total water treatment system.

4.1.3.2 New (Future) Debt Service

The GDPUD does not currently have any unfunded debt. The District Capital Expenditures budget will only be able to fund a portion of the CIP projected expenditures. Additional funding will be provided through Federal grants. Other sources of funding may include private lending or loans through US Department of Agriculture or the State Revolving Fund administered by the California Department of Health Services. During the preparation of this study, no determination has been made as to the amount or certainty of assuming loans to fund the CIP projected expenditures.

4.1.4 Current Water System Capacity

The current water system capacity is determined by the sum of the two water treatment plant (WTP) capacities. These are the Auburn Lake Trails and Walton Lake WTPs. A pipeline ties these treatment plants together forming one water treatment system for the GDPUD. The pipeline is located along Greenwood Road and is shown on Figure 2. The combined water system capacity for the GDPUD, currently, is a 4.6 MGD maximum capacity. Both WTPs equally contribute 2.3 MGD to the system. The recorded maximum day production at the Auburn Lake Trails WTP is 2.2 MGD, and the recorded maximum day production at the Walton Lake WTP is 1.8 MGD. These recorded maximum day production values show that the GDPUD water system currently has 0.6 MGD of available capacity. This equates to only 672 acre-feet per year.

- The water system capacity will change with the scheduled decommission of the Auburn Lake Trails WTP and operation of the Greenwood Lake WTP.

The Greenwood Lake WTP will have 3.0 MGD maximum day production. The replacement of the Auburn Lake Trails WTP with the Greenwood Lake WTP will increase the total water system capacity by 0.7 MGD for a total system peak day capacity of 5.3 MGD. With the recorded maximum day production of 4.0 MGD, as shown in production records, the remaining water system capacity will increase to 1.3 MGD which is equivalent to 1456 acre-feet per year. This amount of available capacity could serve 3,640 new residential units assuming and average use of .48 acre-feet per year.

4.1.5 Future Development and Water Demand

As shown in Chapter 2: Growth and Infrastructure, the population increase within the GDPUD service area will be significant over the next twenty years. An additional 4,625 residences could add 2,220 acre-feet per year to the demand on the water system. Including new residences, additional commercial services, and continued agriculture within the district, the water demand could reach a total of 20,415 acre-feet per year by the year 2025.

4.1.6 Unit Cost for Capital Facilities

Using the determined replacement cost and valuation for the GDPUD water system a unit cost can be calculated. This unit cost reflects the price of facilities to deliver water obtained from this system. Unit costs for the next twenty years are calculated in Table 9, Water System Capital Facility Charge.

The unit cost reflects the replacement cost for the available water system capacity, contributions, and the maximum day water treatment plant capacity. Available contributions from Federal grants are subtracted from the replacement cost for the water system, and this difference is the water system valuation. The total water system valuation for fiscal year 2005 – 2006 is $35,381,197.

The peak day unit cost is calculated by dividing the water system valuation by the maximum day water treatment plant capacity. The peak day unit cost reflects the facilities price for one gallon of water obtained through the water system. For the GDPUD system the peak day unit cost is $7.69. A single family dwelling unit uses an average of 357 gallons per day with a peak day usage of 1003 gallons per day. Values for average and peak day use were calculated using records obtained from GDPUD domestic water demand summaries found in the Water System Reliability Study by KASL Consulting Engineers, November 2002. The values for small acreage (<1 acre) for Garden Valley/Kelsey, Walton Lake/Georgetown/Spanish Dry Diggins, and Auburn Lake Trails/Cool/Pilot Hill regions were averaged to determine the Average Daily Single Family Dwelling use in gallons per day and the Peak Day Single Family Use in gallons per day. For the Peak Day Single Family Use only values greater than 800 gallons per day were used in the average. The quotient of the peak day and average day uses results in the peak factor. Multiplying the peak day single-family use by the unit cost results in the recommended facility reserve charge of $8,100 for the fiscal year 2007-2008. The equivalent single-family dwelling charge for future fiscal years are calculated in Table 9 by applying a 3.0% annual inflation factor. This procedure was developed by the American Water Works Association.

After the decommission of the Auburn Lake Trails water treatment plant in 2007, it will have no replacement cost and will not benefit new development. In the same fiscal year (2007 – 2008), the Greenwood Lake water treatment plant is scheduled to be operational and will be a benefit to new development. Table 9 reflects this change in the water system replacement cost and valuation. The replacement cost for the Greenwood Lake water treatment plant available capacity is calculated by multiplying the estimation shown in section 4.1.2 by the percentage of capacity available for the Greenwood Lake water treatment plant. This results in the available capacity of $3,466,667 in the fiscal year 2007-2008.

4.1.7 Schedule of Capital Facility Charges

As determined by calculating the unit cost for the GDPUD capital facilities, the recommended connection fee for a new residential connection is $8,100 (fiscal year 2007-2008). A schedule of Capital Facility Charges is shown in Table 10, Recommended Water System Capital Facility Charges.

An "equivalency factor" is a unitless value that expresses the capacity of a water meter in terms of rated maximum capacity (in gallons per minute) of a standard meter. For example, using the rated maximum flow rate capacity for a 3/4-inch meter as the standard, a single 1-inch meter is equivalent to approximately 2 and a half, 3/4-inch meters. And, a single 2-inch meter is equivalent to approximately eight, 3/4-inch meters. Rated maximum capacity for water meters is shown in Table 2-2 of Manual M6, Water Meters, published by the American Water Works Association. To determine the cost of a meter multiply the equivalency factor by the charge for a ¾-inch meter.

It should be noted that single family and multi-family residential units demand the same amount of water on an average basis (according to the El Dorado Water Demand Forecast, June 4, 2003). The Water System Reliability Study indicates that one residential unit averages 357 gallons per day with a peak day usage of 1003 gallons per day. As shown in Table 10, the charge for a new Residential Single-Family unit is equivalent to the charge for a new Residential Multi-Family unit.

5.0 Acknowledgments

The consulting team acknowledges the assistance of the following GDPUD staff:

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10. Nevada Irrigation District: Water Service Regulations - http://www.nid.dst.ca.us/Water%20Service%20Regulations%20March%202005.pdf

11. Raftelis, George A., Comprehensive Guide to Water and Wastewater Finance and Pricing

12. U.S. Census Bureau. Table P1 for the 1990 and 2000 Census counts.

13. Water Resources Development and Management Plan (draft), June 2003 – El Dorado County Water Agency.

14. Water System Reliability Study: Georgetown Divide Public Utility District, November 2002 – KASL Engineers

APPENDIX C: Water System Replacement Costs

Table C1
Water System Replacement Cost Data

Water Storage Tanks

Capacity (gal)	Description	Location	Replacement Cost
500,000	Angel Camp	Angel Camp Court	$ 776,602
250,000	Deer Ravine	Deer Ravine Court	$ 388,301
470,000	Pilot Hill	Catecroft Lane	$ 730,006
60,000		Black Ridge Road	$ 93,192
60,000	Hotchkiss Hill	Wentworth Springs Road	$ 93,192
200,000	Spanish Dry Diggins	Reservoir Road	$ 310,641
300,000	Black Oak Mine	Black Oak Mine Road	$ 465,961
200,000	Garden Park	Ranier Road	$ 310,641
214,000	Kelsey	Red Berry Hill Lane	$ 332,386
600,000	Walton Lake Clearwells	Sweetwater Trail	$ 931,922
60,000	Hotchkiss Hill Subtank	Chipmunk Ridge Road	$ 93,192

Note:
1. Assume 0.06 MG capacity for tank on Black Ridge Road.

Water Treatment Plants

Description	Location	Daily Capacity (MG)	Replacement Cost
Auburn Lake Trails	Sweetwater Trail	2.3	$6,900,000
Walton Lakes	Balderston Road	2.3	$6,900,000

Note: Assume $3.00 per gallon produced.

Table C2
Storage Tank Unit Cost Estimation

Storage Tank (gal)	Engineer's Estimate (Lump Sum)	Teichert Construction (Lump Sum)	Average Cost (Lump Sum))	Average Cost per Gallon
87400	$ 85,000.00	$ 186,500.00	$ 135,750.00	$ 1.55

Source: Bid Summary Sheet for Turlock Airport Rehabilitation, July 28, 2005.

Pipeline Unit Cost Estimation

GDPUD Pipe Diameter	Replacement Pipe	Engineer's Estimate per Linear Foot	Teichert Construction per Linear Foot	Granite Construction per Linear Foot	Average Cost per Liner Foot (2002 Dolars)	Adjusted Cost per Linear Foot (2005 Dollars)
12"	12" DI	$ 59.40	$ 81.00	$ 79.00	$ 73.13	$ 79.91
10"	10" DI	$ 49.50	$ 74.00	$ 50.00	$ 57.83	$ 63.20
8"	8" DI	$ 33.00	$ 74.00		$ 53.50	$ 58.46
6"	6" DI	$ 27.50	$ 74.00	$ 30.00	$ 43.83	$ 47.90
4"	4" DI					$ 37.23

Source: Bid Summary Sheet for Hazel Ave./Sierra College Blvd., May 30, 2002.
Notes:
1. The Granite Construction cost for 8" DI pipe was unreasonable and not used.
2. The Adjusted Cost per Linear Foot for the 4" DI pipe was determined by averaging the price change from 12" DI pipe to 6" DI pipe.
3. 2002 costs adjusted to 2005 dollars using 3.0% inflation rate.

Table 5
Water System Structures Replacement Cost (2005 Dollars)

Structure	Description	Location	Construction Date	Replacement Cost	WTP Capacity % Availability	WTP Capacity $ Available
2.3 MGD WTP	Walton Lakes	Balderston Road	1974/1992	$ 6,900,000	21.7%	$ 1,500,000
2.3 MGD WTP	Auburn Lake Trails	Sweetwater Trail	1968/1992	$ 6,900,000	4.3%	$ 300,000
Subtotal Water Treatment Plants				**$ 13,800,000**		**$ 1,800,000**

Note:
1. Percent availability is the capacity available in the WTP divided by the operating capacity.

Structure	Description	Location	Construction Date	Replacement Cost
0.5 MG Tank	Angel Camp	Angel Camp Court		$ 776,602
0.25 MG Tank	Deer Ravine	Deer Ravine Court		$ 388,301
0.47 MG Tank	Pilot Hill	Catecroft Lane		$ 730,006
0.06 MG Tank		Black Ridge Road		$ 93,192
0.06 MG Tank	Hotchkiss Hill	Wentworth Springs Road		$ 93,192
0.2 MG Tank	Spanish Dry Diggins	Reservoir Road		$ 310,641
0.3 MG Tank	Black Oak Mine	Black Oak Mine Road		$ 465,961
0.2 MG Tank	Garden Park	Ranier Road		$ 310,641
0.21 MG Tank	Kelsey	Red Berry Hill Lane		$ 332,386
0.6 MG Tank	Walton Lake Clearwells	Sweetwater Trail	1974/1992	$ 931,922
0.06 MG Tank	Hotchkiss Hill Subtank	Chipmunk Ridge Road		$ 93,192
Pump Station		Black Ridge Road		$ 123,400
Pump Station		Chipmunk Trail		$ 123,400
Pump Station		Reservoir Road		$ 123,400
Subtotal Tanks and Pump Stations				**$ 4,896,235**

Table 6
Water System Pipelines Replacement Cost (2005 Dollars)

Pipe	System Wide Linear Feet	Replacement Unit Cost	Replacement Cost
4" AC	42130	$37	$1,568,313
6" AC	175142	$48	$8,388,928
8" AC	42068	$58	$2,459,333
10" AC	36484	$63	$2,305,644
12" AC	42346	$80	$3,384,071
6" DI	3981	$48	$190,681
4" PVC	50771	$37	$1,889,979
6" PVC	235640	$48	$11,286,653
8" PVC	85394	$58	$4,992,210
10" PVC	10359	$63	$654,648
Total Water System Pipelines	**724315**		**$37,120,461**

Table 7
Water System Capitol Improvement Costs and Reliability Measure Recommendations (2005 Dollars)

Item	FY 05-24	FY 05	FY 06	FY 07	FY 08	FY 09	FY 10	FY 11	FY 12	FY 13	FY 14	FY 15	FY 16
Capital Improvements													
Water Treatment													
Greenwood Lake Water Treatment Plant	$ 6,250,000	$ 1,000,000	$ 3,000,000	$ 2,250,000									
Walton Lake WTP Raw Water Bypass	$ 250,000	$ 100,000	$ 150,000										
Inspection of Treated Water Storage Tanks	$ 100,000		$ 30,000	$ 30,000	$ 40,000								
Walton Lake Outlet Works	$ 50,000		$ 50,000										
Subtotal	*$ 6,650,000*	*$ 1,100,000*	*$ 3,230,000*	*$ 2,280,000*	*$ 40,000*								
Distribution System													
Hwy 193/ Sliger Mine Mainline Relocation	$ 450,000	$ 450,000											
Garden Park Line Replacement	$ 125,000		$ 50,000	$ 75,000									
Garden Park PRV and ACV	$ 120,000		$ 40,000	$ 80,000									
Sliger Mine Road PRV Replacement	$ 50,000				$ 50,000								
Tank Telemetry Enhancements	$ 90,000				$ 45,000	$ 45,000							
Subtotal	*$ 835,000*	*$ 450,000*	*$ 90,000*	*$ 155,000*	*$ 95,000*	*$ 45,000*							
Conveyance System													
Walton Lake Dredging	$ 500,000				$ 500,000								
Up-Country Reliability Measures	$ 500,000	$ 100,000	$ 100,000	$ 100,000	$ 100,000	$ 100,000							
Cabin Waste Gate Replacement	$ 30,000			$ 30,000									
Blue Heron Falls Conservation Plan	$ 103,000					$ 103,000							
Kaiser Siphon Replacement	$ 100,000	$ 100,000											
Subtotal	*$ 1,233,000*	*$ 200,000*	*$ 100,000*	*$ 130,000*	*$ 600,000*	*$ 203,000*							
Wastewater													
Station 16 Enclosure	$ 50,000			$ 50,000									
Manhole Sealing	$ 20,000					$ 20,000							
Collection System Repair	$ 25,000	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 5,000							
Subtotal	*$ 1,328,000*	*$ 205,000*	*$ 105,000*	*$ 185,000*	*$ 605,000*	*$ 228,000*							
Total Capitol Improvements	**$ 10,046,000**	**$ 1,955,000**	**$ 3,525,000**	**$ 2,750,000**	**$ 1,340,000**	**$ 476,000**							
Priority Reliability Measure Recommendations													
Ditch System													
Up-Country Ditch													
Structure #1 to Structure #2	$ 548,000				$ 300,000	$ 248,000							
Structure #2 to Structure #3	$ 72,000			$ 72,000									
Structure #3 to Structure #4	$ 305,000			$ 305,000									
Structure #5 to Structure #6	$ 305,000		$ 305,000										
Balderston Wastegate to Sand Trap Siphon	$ 111,000				$ 111,000								
Walton Lake	$ 496,000				$ 250,000	$ 246,000							
Buckeye Conduit to Shroeder Conduit	$ 85,000	$ 85,000											
Main/Pilot Hill Ditch (Main Ditch #1)													
Buffalo Hills Conduit to Spanish Dry Diggins Road	$ 60,000	$ 60,000											
Spanish Dry Diggins Road to Taylor Mine Outlet	$ 305,000					$ 305,000							
Taylor Mine Outlet to Cabin Wastegate	$ 186,000			$ 66,000	$ 60,000	$ 60,000							
Cabin Wastegate to Growlersberg Wastegate	$ 200,000	$ 100,000	$ 100,000										
Growlersberg Wastegate to Summers Wastegate	$ 11,000				$ 11,000								
Summers Wastegate to Spools Wastegate	$ 93,000	$ 30,000	$ 30,000	$ 33,000									
Spools Wastegate to Jackass Wastegate	$ 7,500					$ 7,500							
Jackass Wastegate to Greenwood Reservoir	$ 416,000			$ 200,000	$ 216,000								
Main/Pilot Hill Ditch (Main Ditch #2)													
Blue Heron Falls to Kaiser Siphon	$ 84,000	$ 20,000	$ 20,000	$ 20,000	$ 24,000								
Kaiser Siphon to ALT Water Treatment Plant	$ 198,000		$ 100,000			$ 98,000							

Table 7
Water System Capitol Improvement Costs and Reliability Measur

Item	FY 17	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	FY 24
Capital Improvements								
Water Treatment								
Greenwood Lake Water Treatment Plant								
Walton Lake WTP Raw Water Bypass								
Inspection of Treated Water Storage Tanks								
Walton Lake Outlet Works								
Subtotal								
Distribution System								
Hwy 193/ Sliger Mine Mainline Relocation								
Garden Park Line Replacement								
Garden Park PRV and ACV								
Sliger Mine Road PRV Replacement								
Tank Telemetry Enhancements								
Subtotal								
Conveyance System								
Walton Lake Dredging								
Up-Country Reliability Measures								
Cabin Waste Gate Replacement								
Blue Heron Falls Conservation Plan								
Kaiser Siphon Replacement								
Subtotal								
Wastewater								
Station 16 Enclosure								
Manhole Sealing								
Collection System Repair								
Subtotal								
Total Capitol Improvements								
Priority Reliability Measure Recommendations								
Ditch System								
Up-Country Ditch								
Structure #1 to Structure #2								
Structure #2 to Structure #3								
Structure #3 to Structure #4								
Structure #5 to Structure #6								
Balderston Wastegate to Sand Trap Siphon								
Walton Lake								
Buckeye Conduit to Shroeder Conduit								
Main/Pilot Hill Ditch (Main Ditch #1)								
Buffalo Hills Conduit to Spanish Dry Diggins Road								
Spanish Dry Diggins Road to Taylor Mine Outlet								
Taylor Mine Outlet to Cabin Wastegate								
Cabin Wastegate to Growlersberg Wastegate								
Growlersberg Wastegate to Summers Wastegate								
Summers Wastegate to Spools Wastegate								
Spools Wastegate to Jackass Wastegate								
Jackass Wastegate to Greenwood Reservoir								
Main/Pilot Hill Ditch (Main Ditch #2)								
Blue Heron Falls to Kaiser Siphon								
Kaiser Siphon to ALT Water Treatment Plant								

Table 7
Water System Capitol Improvement Costs and Reliability Measure Recommendations (2005 Dollars)

Item	FY 05-24	FY 05	FY 06	FY 07	FY 08	FY 09	FY 10	FY 11	FY 12	FY 13	FY 14	FY 15	FY 16
Willow Creek Wastegate to Baldridge Wastegate	$ 80,000		$ 20,000	$ 20,000	$ 20,000	$ 20,000							
Main Ditch/Pilot Hill Ditch (Pilot Hill Ditch)													
Dorman Wye to Knickerbocker Creek	$ 22,000	$ 22,000											
Lovejoy Wastegate to Nagle Wastegate	$ 81,000	$ 81,000											
Nagle Wastegate to Capecroft Wastegate	$ 4,000	$ 4,000											
Wagner Reservoir to Wagner Reservoir Wastegate	$ 28,000	$ 28,000											
Kelsey Ditch (Kelsey Ditch #1)													
The Crails to St. James Wastegate	$ 136,000		$ 136,000										
St. James Wastegate to State Highway 193	$ 8,000				$ 8,000								
Forest View Drive Falls to Irish Res. Wastegate	$ 75,000		$ 75,000										
Kelsey Ditch (Kelsey Ditch #2)													
Black Oak Siphon to Dukes Wastegate	$ 51,000	$ 51,000											
Dukes Wastegate to State Highway 193	$ 125,000	$ 125,000											
Mellows Wastegate to Kelsey Flume	$ 95,000					$ 95,000							
Kelsey Flume to Stork Wastegate	$ 48,000			$ 48,000									
Stork Wastegate to Kelsey Reservoir	$ 120,000	$ 120,000											
Subtotal	*$ 4,355,500*	*$ 726,000*	*$ 786,000*	*$ 764,000*	*$ 1,000,000*	*$ 1,079,500*							
Water System													
Auburn Lake Trails Service Area													
Greenwood Rd. Feed from WL	$ 308,000					$ 308,000							
Greenwood Rd. Main Replacement	$ 833,000												
Angel Camp Ct. Booster Pump	$ 102,000												
Highway 193 Cross Tie-Brinks LN Replace	$ 267,000												
Gravity Raw Water for Golf Course	$ 413,000					$ 413,000							
Digger Tree Ct. to Westview Trl. Tie	$ 40,000											$ 40,000	
Indian Rock Road Main Replacement	$ 66,000												
Cherry Acre Road PRV-Cross Tie	$ 160,000											$ 160,000	
Catecroft Road Main Replacement	$ 209,000												
Highway 49-Pilot Hill Loop	$ 387,000												
Salmon Falls Road Main Replacement	$ 514,000												
Second Deer Ravine Tank, 0.6 MG	$ 1,965,000					$ 1,965,000							
Cherry Hills Tank, 0.4 MG	$ 787,000												
Walton Lakes Service Area													
Citabria Ln. Loop Tie	$ 92,000											$ 92,000	
Fain Ln. Extension	$ 364,000					$ 364,000							
Buffalo Hill Rd. Line Replacement	$ 96,000												
Quiet Place Loop Tie	$ 59,000												
Quiet Place Remove Check Valve	$ 5,000					$ 5,000							
Holloway Dr. Line Replacement	$ 74,000												
Longview Ln. Line Replacement	$ 270,000												
Reservoir Rd., SDD, Hwy. 193 Replacements	$ 917,000											$ 917,000	
Silent Meadow Ln. Line Replacement	$ 127,000												
Sanromo Rd. Line Replacement	$ 531,000												
Black Oak Mine Rd. Proposed Improvement	$ 59,000												
Greenwood Rd. Main Replacement	$ 208,000											$ 208,000	
Traverse Creek Rd. Line Replacement	$ 454,000												
Bayne Rd. Line Extension	$ 405,000					$ 405,000							
Bayne Rd. Tank	$ 1,350,000											$ 1,350,000	
Lazy Brook Trl. Line Replacement	$ 128,000												

Table 7
Water System Capitol Improvement Costs and Reliability Measur

Item	FY 17	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	FY 24
Willow Creek Wastegate to Baldridge Wastegate								
Main Ditch/Pilot Hill Ditch (Pilot Hill Ditch)								
Dorman Wye to Knickerbocker Creek								
Lovejoy Wastegate to Nagle Wastegate								
Nagle Wastegate to Capecroft Wastegate								
Wagner Reservoir to Wagner Reservoir Wastegate								
Kelsey Ditch (Kelsey Ditch #1)								
The Crails to St. James Wastegate								
St. James Wastegate to State Highway 193								
Forest View Drive Falls to Irish Res. Wastegate								
Kelsey Ditch (Kelsey Ditch #2)								
Black Oak Siphon to Dukes Wastegate								
Dukes Wastegate to State Highway 193								
Mellows Wastegate to Kelsey Flume								
Kelsey Flume to Stork Wastegate								
Stork Wastegate to Kelsey Reservoir								
Subtotal								
Water System								
Auburn Lake Trails Service Area								
Greenwood Rd. Feed from WL								
Greenwood Rd. Main Replacement								$ 833,000
Angel Camp Ct. Booster Pump			$ 102,000					
Highway 193 Cross Tie-Brinks LN Replace			$ 267,000					
Gravity Raw Water for Golf Course								
Digger Tree Ct. to Westview Trl. Tie								
Indian Rock Road Main Replacement			$ 66,000					
Cherry Acre Road PRV-Cross Tie								
Catecroft Road Main Replacement			$ 209,000					
Highway 49-Pilot Hill Loop								$ 387,000
Salmon Falls Road Main Replacement			$ 514,000					
Second Deer Ravine Tank, 0.6 MG								
Cherry Hills Tank, 0.4 MG			$ 787,000					
Walton Lakes Service Area								
Citabria Ln. Loop Tie								
Fain Ln. Extension								
Buffalo Hill Rd. Line Replacement			$ 96,000					
Quiet Place Loop Tie								$ 59,000
Quiet Place Remove Check Valve								
Holloway Dr. Line Replacement			$ 74,000					
Longview Ln. Line Replacement			$ 270,000					
Reservoir Rd., SDD, Hwy. 193 Replacements								
Silent Meadow Ln. Line Replacement			$ 127,000					
Sanromo Rd. Line Replacement								$ 531,000
Black Oak Mine Rd. Proposed Improvement								$ 59,000
Greenwood Rd. Main Replacement								
Traverse Creek Rd. Line Replacement								$ 454,000
Bayne Rd. Line Extension								
Bayne Rd. Tank								
Lazy Brook Trl. Line Replacement								$ 128,000

Table 7
Water System Capitol Improvement Costs and Reliability Measure Recommendations (2005 Dollars)

Item	FY 05-24	FY 05	FY 06	FY 07	FY 08	FY 09	FY 10	FY 11	FY 12	FY 13	FY 14	FY 15	FY 16
Whitney Ct. Pressure Reducing Station	$ 108,000					$ 108,000							
Oak Ln. Line Replacement	$ 151,000												
Shasta Rd. Line Replacement	$ 109,000												
Talmalpais Rd. Line Replacement	$ 110,000												
Pikes Peak Cir. Line Replacement	$ 64,000												
Garden Park Line Replacement	$ 97,000					$ 97,000							
Hancock Rd. Tank Tie	$ 113,000					$ 113,000							
Garden Park Tank Proposed Improvements	$ 836,000										$ 836,000		
Hotchkiss Hill Sub Tank Addition	$ 444,000												
Traverse Creek Rd. Booster Pumps	$ 62,000												
Chrysler Cir. & Roller Coaster Replacement	$ 570,000												
Subtotal	*$ 13,854,000*					*$ 3,778,000*					*$ 3,603,000*		
Total Priority Reliability Measure Recommendations	**$ 18,209,500**	**$ 726,000**	**$ 786,000**	**$ 764,000**	**$ 1,000,000**	**$ 4,857,500**					**$ 3,603,000**		
Second Priority Reliability Measure Recommendations													
Ditch System													
Up-Country Ditch													
Bacon Creek Pipeline	$ 255,125				$ 255,125								
Structure #1 to Structure #2	$ 9,750											$ 9,750	
Structure #2 to Structure #3	$ 399,750	$ 399,750											
Structure #3 to Structure #4	$ 283,563												
Structure #4 to Structure #5	$ 99,938												
Penstock Inlet/Bypass to Tree House Lane	$ 143,813								$ 143,813				
Tree House Lane to Balderston Wastegate	$ 169,813												
Sand Trap Siphon Canyon Creek Conduit	$ 162,500	$ 8,125	$ 8,125	$ 8,125	$ 8,125	$ 8,125	$ 8,125	$ 8,125	$ 8,125	$ 8,125	$ 8,125	$ 8,125	$ 8,125
Buckeye Conduit	$ 325,000	$ 16,250	$ 16,250	$ 16,250	$ 16,250	$ 16,250	$ 16,250	$ 16,250	$ 16,250	$ 16,250	$ 16,250	$ 16,250	$ 16,250
Buckeye Conduit to Schroeder Conduit	$ 39,813												
Schroeder Conduit	$ 105,625	$ 5,281	$ 5,281	$ 5,281	$ 5,281	$ 5,281	$ 5,281	$ 5,281	$ 5,281	$ 5,281	$ 5,281	$ 5,281	$ 5,281
Overall, Up Country Ditch	$ 50,375												
Main/Pilot Hill Ditch (Main Ditch #1)													
The Crails to Buffalo Hills Conduit	$ 65,000												
Buffalo Hills Conduit	$ 159,250	$ 7,963	$ 7,963	$ 7,963	$ 7,963	$ 7,963	$ 7,963	$ 7,963	$ 7,963	$ 7,963	$ 7,963	$ 7,963	$ 7,963
Spanish Dry Diggins Rd. to Taylor Mine Outlet	$ 8,125										$ 8,125		
Cabin Wastegate to Growlersberg Wastegate	$ 4,875												
Summers Wastegate to Spools Wastegate	$ 336,375			$ 336,375									
Spools Wastegate To Jackass Wastegate	$ 197,438							$ 197,438					
Jackass Wastegate to Greenwood Reservoir	$ 16,250												
Main/Pilot Hill Ditch (Main Ditch #2)													
SDD Diversion Flume to Blue Heron Falls	$ 107,250	$ 5,363	$ 5,363	$ 5,363	$ 5,363	$ 5,363	$ 5,363	$ 5,363	$ 5,363	$ 5,363	$ 5,363	$ 5,363	$ 5,363
Blue Heron Way Falls to Kaiser Siphon	$ 83,688											$ 83,688	
Kaiser Pipeline and Kaiser Siphon	$ 164,938						$ 164,938						
Kaiser Pipeline and Kaiser Siphon	$ 134,875	$ 6,744	$ 6,744	$ 6,744	$ 6,744	$ 6,744	$ 6,744	$ 6,744	$ 6,744	$ 6,744	$ 6,744	$ 6,744	$ 6,744
Ford Siphon to ALT Water Treatment Plant	$ 8,938									$ 8,938			
ALT Water Treatment Plant to Campground Wastegate	$ 139,750												
Campground Wastegate to Willow Creek Wastegate	$ 351,813								$ 150,000	$ 150,000	$ 51,813		
Willow Creek Wastegate to Baldridge Wastegate	$ 67,438												
Baldridge Wastegate to Bogus Wastegate	$ 24,375		$ 24,375										
Main/Pilot Hill Ditch (Pilot Hill Ditch)													
Dorman Wye to Knickerbocker Creek	$ 131,625												
Knickerbocker Creek to Pear Orchard Wastegate	$ 86,938												

Table 7
Water System Capitol Improvement Costs and Reliability Measur

Item	FY 17	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	FY 24
Whitney Ct. Pressure Reducing Station								
Oak Ln. Line Replacement			$ 151,000					
Shasta Rd. Line Replacement								$ 109,000
Talmalpais Rd. Line Replacement			$ 110,000					
Pikes Peak Cir. Line Replacement			$ 64,000					
Garden Park Line Replacement								
Hancock Rd. Tank Tie								
Garden Park Tank Proposed Improvements								
Hotchkiss Hill Sub Tank Addition			$ 444,000					
Traverse Creek Rd. Booster Pumps			$ 62,000					
Chrysler Cir. & Roller Coaster Replacement								$ 570,000
Subtotal			*$ 3,343,000*					*$ 3,130,000*
Total Priority Reliability Measure Recommendations			**$ 3,343,000**					**$ 3,130,000**
Second Priority Reliability Measure Recommendations								
Ditch System								
Up-Country Ditch								
Bacon Creek Pipeline								
Structure #1 to Structure #2								
Structure #2 to Structure #3								
Structure #3 to Structure #4						$ 283,563		
Structure #4 to Structure #5			$ 99,938					
Penstock Inlet/Bypass to Tree House Lane								
Tree House Lane to Balderston Wastegate		$ 169,813						
Sand Trap Siphon Canyon Creek Conduit	$ 8,125	$ 8,125	$ 8,125	$ 8,125	$ 8,125	$ 8,125	$ 8,125	$ 8,125
Buckeye Conduit	$ 16,250	$ 16,250	$ 16,250	$ 16,250	$ 16,250	$ 16,250	$ 16,250	$ 16,250
Buckeye Conduit to Schroeder Conduit		$ 39,813						
Schroeder Conduit	$ 5,281	$ 5,281	$ 5,281	$ 5,281	$ 5,281	$ 5,281	$ 5,281	$ 5,281
Overall, Up Country Ditch								$ 50,375
Main/Pilot Hill Ditch (Main Ditch #1)								
The Crails to Buffalo Hills Conduit			$ 65,000					
Buffalo Hills Conduit	$ 7,963	$ 7,963	$ 7,963	$ 7,963	$ 7,963	$ 7,963	$ 7,963	$ 7,963
Spanish Dry Diggins Rd. to Taylor Mine Outlet								
Cabin Wastegate to Growlersberg Wastegate				$ 4,875				
Summers Wastegate to Spools Wastegate								
Spools Wastegate To Jackass Wastegate								
Jackass Wastegate to Greenwood Reservoir					$ 16,250			
Main/Pilot Hill Ditch (Main Ditch #2)								
SDD Diversion Flume to Blue Heron Falls	$ 5,363	$ 5,363	$ 5,363	$ 5,363	$ 5,363	$ 5,363	$ 5,363	$ 5,363
Blue Heron Way Falls to Kaiser Siphon								
Kaiser Pipeline and Kaiser Siphon								
Kaiser Pipeline and Kaiser Siphon	$ 6,744	$ 6,744	$ 6,744	$ 6,744	$ 6,744	$ 6,744	$ 6,744	$ 6,744
Ford Siphon to ALT Water Treatment Plant								
ALT Water Treatment Plant to Campground Wastegate				$ 139,750				
Campground Wastegate to Willow Creek Wastegate								
Willow Creek Wastegate to Baldridge Wastegate	$ 67,438							
Baldridge Wastegate to Bogus Wastegate								
Main/Pilot Hill Ditch (Pilot Hill Ditch)								
Dorman Wye to Knickerbocker Creek								$ 131,625
Knickerbocker Creek to Pear Orchard Wastegate					$ 86,938			

Table 7
Water System Capitol Improvement Costs and Reliability Measure Recommendations (2005 Dollars)

Item	FY 05-24	FY 05	FY 06	FY 07	FY 08	FY 09	FY 10	FY 11	FY 12	FY 13	FY 14	FY 15	FY 16
Pear Orchard Wastegate to Therekel Wastegate	$ 75,563					$ 75,563							
Pilot Hill Ditch													
Therekel Wastegate to State Hwy 49	$ 247,000												$ 247,000
State Hwy 49 to Lovejoy Wastegate	$ 33,313												
Lovejoy Wastegate To Nagle Wastegate	$ 141,375												
Capecroft Wastegate to Wagnor Reservoir	$ 96,688												
Wagner Reservoir to Wagner Reservoir Wastegate	$ 126,750												
Wager Reservoir Wastegate to Bayley House Wastegate	$ 17,875		$ 17,875										
Bayley House Wastegate to Pilot Hill Reservoir	$ 3,250									$ 3,250			
Overall, Pilot Hill Ditch	$ 404,625		$ 40,000	$ 40,000	$ 40,000	$ 40,000	$ 40,000	$ 40,000	$ 40,000	$ 40,000	$ 40,000	$ 44,625	
Kelsey Ditch													
St. James Wastegate to Hwy 49	$ 24,375					$ 24,375							
State Hwy 49 to (Forrest View Dr.) Falls	$ 11,375												
(Forrest View Dr.) Falls to Irish Res. Wastegate	$ 35,750							$ 35,750					
Irish Res. Wastegate to Twin Pines Siphon	$ 245,375												
Twin Pines Siphon to Black Oaks Siphon	$ 35,750							$ 35,750					
Black Oaks Siphon to Dukes Wastegate	$ 73,125										$ 73,125		
Dukes Wastegate to State Hwy 193	$ 93,438						$ 93,438						
State Hwy 193 to Chicken Flat Wastegate	$ 218,563			$ 218,563									
Mellows Wastegate to Kelsey Flume	$ 8,125											$ 8,125	
Kelsey Flume Siphon to Stork Wastegate	$ 80,438												
Stork Wastegate to Kelsey Reservoir	$ 25,188												
Overall, Kelsey Ditch	$ 174,688		$ 174,688										
Spanish Dry Diggins Ditch													
SDD Flume to End	$ 37,375	$ 37,375											
Taylor Mine Ditch													
Taylor Mine Outlet to Shadle Reservoir	$ 36,563				$ 36,563								
Other													
Overall, GDPUD	$ 40,625	$ 40,625											
Overall, GDPUD	$ 284,375												
Total Second Priority Reliability Measure Recommendations	**$ 5,280,438**	**$ 527,475**	**$ 306,663**	**$ 644,663**	**$ 381,413**	**$ 189,663**	**$ 348,101**	**$ 358,663**	**$ 383,538**	**$ 251,913**	**$ 222,788**	**$ 195,913**	**$ 296,725**
Total	**$ 33,535,938**	**$ 3,208,475**	**$ 4,617,663**	**$ 4,158,663**	**$ 2,721,413**	**$ 5,523,163**	**$ 348,101**	**$ 358,663**	**$ 383,538**	**$ 251,913**	**$ 3,825,788**	**$ 195,913**	**$ 296,725**

Table 7
Water System Capitol Improvement Costs and Reliability Measur

Item	FY 17	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	FY 24
Pear Orchard Wastegate to Therekel Wastegate								
Pilot Hill Ditch								
Therekel Wastegate to State Hwy 49								
State Hwy 49 to Lovejoy Wastegate		$ 33,313						
Lovejoy Wastegate To Nagle Wastegate							$ 141,375	
Capecroft Wastegate to Wagnor Reservoir			$ 96,688					
Wagner Reservoir to Wagner Reservoir Wastegate						$ 126,750		
Wager Reservoir Wastegate to Bayley House Wastegate								
Bayley House Wastegate to Pilot Hill Reservoir								
Overall, Pilot Hill Ditch								
Kelsey Ditch								
St. James Wastegate to Hwy 49								
State Hwy 49 to (Forrest View Dr.) Falls			$ 11,375					
(Forrest View Dr.) Falls to Irish Res. Wastegate								
Irish Res. Wastegate to Twin Pines Siphon				$ 245,375				
Twin Pines Siphon to Black Oaks Siphon								
Black Oaks Siphon to Dukes Wastegate								
Dukes Wastegate to State Hwy 193								
State Hwy 193 to Chicken Flat Wastegate								
Mellows Wastegate to Kelsey Flume								
Kelsey Flume Siphon to Stork Wastegate	$ 80,438							
Stork Wastegate to Kelsey Reservoir							$ 25,188	
Overall, Kelsey Ditch								
Spanish Dry Diggins Ditch								
SDD Flume to End								
Taylor Mine Ditch								
Taylor Mine Outlet to Shadle Reservoir								
Other								
Overall, GDPUD								
Overall, GDPUD	$ 140,000	$ 144,375						
Total Second Priority Reliability Measure Recommendations	**$ 337,601**	**$ 437,039**	**$ 322,726**	**$ 439,725**	**$ 152,913**	**$ 460,038**	**$ 216,288**	**$ 231,725**
Total	**$ 337,601**	**$ 437,039**	**$ 3,665,726**	**$ 439,725**	**$ 152,913**	**$ 460,038**	**$ 216,288**	**$ 3,361,725**

Table 8
Water System Capitol Improvement Costs and Reliability Measure Recommendations (Adjusted Dollars)

Item	FY 05-24	FY 05	FY 06	FY 07	FY 08	FY 09	FY 10	FY 11	FY 12	FY 13	FY 14	FY 15	FY 16
Capital Improvements													
Water Treatment													
Greenwood Lake Water Treatment Plant	$ 6,671,336	$ 1,030,000	$ 3,182,700	$ 2,458,636									
Walton Lake WTP Raw Water Bypass	$ 262,135	$ 103,000	$ 159,135										
Inspection of Treated Water Storage Tanks	$ 109,629		$ 31,827	$ 32,782	$ 45,020								
Walton Lake Outlet Works	$ 53,045		$ 53,045										
Subtotal	*$ 7,096,145*	*$ 1,133,000*	*$ 3,426,707*	*$ 2,491,418*	*$ 45,020*								
Distribution System													
Hwy 193/ Sliger Mine Mainline Relocation	$ 463,500	$ 463,500											
Garden Park Line Replacement	$ 135,000		$ 53,045	$ 81,955									
Garden Park PRV and ACV	$ 129,854		$ 42,436	$ 87,418									
Sliger Mine Road PRV Replacement	$ 56,275				$ 56,275								
Tank Telemetry Enhancements	$ 102,815				$ 50,648	$ 52,167							
Subtotal	*$ 887,444*	*$ 463,500*	*$ 95,481*	*$ 169,373*	*$ 106,923*	*$ 52,167*							
Conveyance System													
Walton Lake Dredging	$ 562,754				$ 562,754								
Up-Country Reliability Measures	$ 546,841	$ 103,000	$ 106,090	$ 109,273	$ 112,551	$ 115,927							
Cabin Waste Gate Replacement	$ 32,782			$ 32,782									
Blue Heron Falls Conservation Plan	$ 119,405					$ 119,405							
Kaiser Siphon Replacement	$ 103,000	$ 103,000											
Subtotal	*$ 1,364,782*	*$ 206,000*	*$ 106,090*	*$ 142,055*	*$ 675,305*	*$ 235,333*							
Wastewater													
Station 16 Enclosure	$ 54,636			$ 54,636									
Manhole Sealing	$ 23,185					$ 23,185							
Collection System Repair	$ 27,342	$ 5,150	$ 5,305	$ 5,464	$ 5,628	$ 5,796							
Subtotal	*$ 105,164*	*$ 5,150*	*$ 5,305*	*$ 60,100*	*$ 5,628*	*$ 28,982*							
Total Capitol Improvements	$ 9,453,536	$ 1,807,650	$ 3,633,583	$ 2,862,945	$ 832,877	$ 316,482							
Priority Reliability Measure Recommendations													
Ditch System													
Up-Country Ditch													
Structure #1 to Structure #2	$ 625,153				$ 337,653	$ 287,500							
Structure #2 to Structure #3	$ 78,676			$ 78,676									
Structure #3 to Structure #4	$ 333,282			$ 333,282									
Structure #5 to Structure #6	$ 323,575		$ 323,575										
Balderston Wastegate to Sand Trap Siphon	$ 124,931				$ 124,931								
Walton Lake	$ 566,559				$ 281,377	$ 285,181							
Buckeye Conduit to Shroeder Conduit	$ 87,550	$ 87,550											
Main/Pilot Hill Ditch (Main Ditch #1)													
Buffalo Hills Conduit to Spanish Dry Diggins Road	$ 61,800	$ 61,800											
Spanish Dry Diggins Road to Taylor Mine Outlet	$ 353,579					$ 353,579							
Taylor Mine Outlet to Cabin Wastegate	$ 209,207			$ 72,120	$ 67,531	$ 69,556							
Cabin Wastegate to Growlersberg Wastegate	$ 209,090	$ 103,000	$ 106,090										
Growlersberg Wastegate to Summers Wastegate	$ 12,381				$ 12,381								
Summers Wastegate to Spools Wastegate	$ 98,787	$ 30,900	$ 31,827	$ 36,060									
Spools Wastegate to Jackass Wastegate	$ 8,695					$ 8,695							
Jackass Wastegate to Greenwood Reservoir	$ 461,655			$ 218,545	$ 243,110								
Main/Pilot Hill Ditch (Main Ditch #2)													
Blue Heron Falls to Kaiser Siphon	$ 90,685	$ 20,600	$ 21,218	$ 21,855	$ 27,012								
Kaiser Siphon to ALT Water Treatment Plant	$ 219,699		$ 106,090			$ 113,609							
Willow Creek Wastegate to Baldridge Wastegate	$ 88,768		$ 21,218	$ 21,855	$ 22,510	$ 23,185							
Main Ditch/Pilot Hill Ditch (Pilot Hill Ditch)													
Dorman Wye to Knickerbocker Creek	$ 22,660	$ 22,660											
Lovejoy Wastegate to Nagle Wastegate	$ 83,430	$ 83,430											
Nagle Wastegate to Capecroft Wastegate	$ 4,120	$ 4,120											

Table 8
Water System Capitol Improvement Costs and Reliability Measure

Item	FY 17	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	FY 24
Capital Improvements								
Water Treatment								
Greenwood Lake Water Treatment Plant								
Walton Lake WTP Raw Water Bypass								
Inspection of Treated Water Storage Tanks								
Walton Lake Outlet Works								
Subtotal								
Distribution System								
Hwy 193/ Sliger Mine Mainline Relocation								
Garden Park Line Replacement								
Garden Park PRV and ACV								
Sliger Mine Road PRV Replacement								
Tank Telemetry Enhancements								
Subtotal								
Conveyance System								
Walton Lake Dredging								
Up-Country Reliability Measures								
Cabin Waste Gate Replacement								
Blue Heron Falls Conservation Plan								
Kaiser Siphon Replacement								
Subtotal								
Wastewater								
Station 16 Enclosure								
Manhole Sealing								
Collection System Repair								
Subtotal								
Total Capitol Improvements								
Priority Reliability Measure Recommendations								
Ditch System								
Up-Country Ditch								
Structure #1 to Structure #2								
Structure #2 to Structure #3								
Structure #3 to Structure #4								
Structure #5 to Structure #6								
Balderston Wastegate to Sand Trap Siphon								
Walton Lake								
Buckeye Conduit to Shroeder Conduit								
Main/Pilot Hill Ditch (Main Ditch #1)								
Buffalo Hills Conduit to Spanish Dry Diggins Road								
Spanish Dry Diggins Road to Taylor Mine Outlet								
Taylor Mine Outlet to Cabin Wastegate								
Cabin Wastegate to Growlersberg Wastegate								
Growlersberg Wastegate to Summers Wastegate								
Summers Wastegate to Spools Wastegate								
Spools Wastegate to Jackass Wastegate								
Jackass Wastegate to Greenwood Reservoir								
Main/Pilot Hill Ditch (Main Ditch #2)								
Blue Heron Falls to Kaiser Siphon								
Kaiser Siphon to ALT Water Treatment Plant								
Willow Creek Wastegate to Baldridge Wastegate								
Main Ditch/Pilot Hill Ditch (Pilot Hill Ditch)								
Dorman Wye to Knickerbocker Creek								
Lovejoy Wastegate to Nagle Wastegate								
Nagle Wastegate to Capecroft Wastegate								

Table 8
Water System Capitol Improvement Costs and Reliability Measure Recommendations (Adjusted Dollars)

Item	FY 05-24	FY 05	FY 06	FY 07	FY 08	FY 09	FY 10	FY 11	FY 12	FY 13	FY 14	FY 15	FY 16
Wagner Reservoir to Wagner Reservoir Wastegate	$ 28,840	$ 28,840											
Kelsey Ditch (Kelsey Ditch #1)													
The Crails to St. James Wastegate	$ 144,282		$ 144,282										
St. James Wastegate to State Highway 193	$ 9,004				$ 9,004								
Forest View Drive Falls to Irish Res. Wastegate	$ 79,568		$ 79,568										
Kelsey Ditch (Kelsey Ditch #2)													
Black Oak Siphon to Dukes Wastegate	$ 52,530	$ 52,530											
Dukes Wastegate to State Highway 193	$ 128,750	$ 128,750											
Mellows Wastegate to Kelsey Flume	$ 110,131					$ 110,131							
Kelsey Flume to Stork Wastegate	$ 52,451			$ 52,451									
Stork Wastegate to Kelsey Reservoir	$ 123,600	$ 123,600											
Subtotal	*$ 4,793,436*	*$ 747,780*	*$ 833,867*	*$ 834,843*	*$ 1,125,509*	*$ 1,251,436*							
Water System													
Auburn Lake Trails Service Area													
Greenwood Rd. Feed from WL	$ 357,056					$ 357,056							
Greenwood Rd. Main Replacement	$ 1,504,491												
Angel Camp Ct. Booster Pump	$ 158,913												
Highway 193 Cross Tie-Brinks LN Replace	$ 415,977												
Gravity Raw Water for Golf Course	$ 478,780					$ 478,780							
Digger Tree Ct. to Westview Trl. Tie	$ 53,757										$ 53,757		
Indian Rock Road Main Replacement	$ 102,826												
Cherry Acre Road PRV-Cross Tie	$ 215,027										$ 215,027		
Catecroft Road Main Replacement	$ 325,615												
Highway 49-Pilot Hill Loop	$ 698,965												
Salmon Falls Road Main Replacement	$ 800,795												
Second Deer Ravine Tank, 0.6 MG	$ 2,277,974					$ 2,277,974							
Cherry Hills Tank, 0.4 MG	$ 1,226,120												
Walton Lakes Service Area													
Citabria Ln. Loop Tie	$ 123,640										$ 123,640		
Fain Ln. Extension	$ 421,976					$ 421,976							
Buffalo Hill Rd. Line Replacement	$ 149,565												
Quiet Place Loop Tie	$ 106,561												
Quiet Place Remove Check Valve	$ 5,796					$ 5,796							
Holloway Dr. Line Replacement	$ 115,290												
Longview Ln. Line Replacement	$ 420,651												
Reservoir Rd., SDD, Hwy. 193 Replacements	$ 1,232,371										$ 1,232,371		
Silent Meadow Ln. Line Replacement	$ 197,862												
Sanromo Rd. Line Replacement	$ 959,045												
Black Oak Mine Rd. Proposed Improvement	$ 106,561												
Greenwood Rd. Main Replacement	$ 279,535										$ 279,535		
Traverse Creek Rd. Line Replacement	$ 819,975												
Bayne Rd. Line Extension	$ 469,506					$ 469,506							
Bayne Rd. Tank	$ 1,814,287										$ 1,814,287		
Lazy Brook Trl. Line Replacement	$ 231,182												
Whitney Ct. Pressure Reducing Station	$ 125,202					$ 125,202							
Oak Ln. Line Replacement	$ 235,253												
Shasta Rd. Line Replacement	$ 196,866												
Talmalpais Rd. Line Replacement	$ 171,376												
Pikes Peak Cir. Line Replacement	$ 99,710												
Garden Park Line Replacement	$ 112,450					$ 112,450							
Hancock Rd. Tank Tie	$ 130,998					$ 130,998							
Garden Park Tank Proposed Improvements	$ 1,123,514										$ 1,123,514		
Hotchkiss Hill Sub Tank Addition	$ 691,738												
Traverse Creek Rd. Booster Pumps	$ 96,594												

Table 8
Water System Capitol Improvement Costs and Reliability Measure

Item	FY 17	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	FY 24
Wagner Reservoir to Wagner Reservoir Wastegate								
Kelsey Ditch (Kelsey Ditch #1)								
The Crails to St. James Wastegate								
St. James Wastegate to State Highway 193								
Forest View Drive Falls to Irish Res. Wastegate								
Kelsey Ditch (Kelsey Ditch #2)								
Black Oak Siphon to Dukes Wastegate								
Dukes Wastegate to State Highway 193								
Mellows Wastegate to Kelsey Flume								
Kelsey Flume to Stork Wastegate								
Stork Wastegate to Kelsey Reservoir								
Subtotal								
Water System								
Auburn Lake Trails Service Area								
Greenwood Rd. Feed from WL								
Greenwood Rd. Main Replacement								$ 1,504,491
Angel Camp Ct. Booster Pump			$ 158,913					
Highway 193 Cross Tie-Brinks LN Replace			$ 415,977					
Gravity Raw Water for Golf Course								
Digger Tree Ct. to Westview Trl. Tie								
Indian Rock Road Main Replacement			$ 102,826					
Cherry Acre Road PRV-Cross Tie								
Catecroft Road Main Replacement			$ 325,615					
Highway 49-Pilot Hill Loop								$ 698,965
Salmon Falls Road Main Replacement			$ 800,795					
Second Deer Ravine Tank, 0.6 MG								
Cherry Hills Tank, 0.4 MG			$ 1,226,120					
Walton Lakes Service Area								
Citabria Ln. Loop Tie								
Fain Ln. Extension								
Buffalo Hill Rd. Line Replacement			$ 149,565					
Quiet Place Loop Tie								$ 106,561
Quiet Place Remove Check Valve								
Holloway Dr. Line Replacement			$ 115,290					
Longview Ln. Line Replacement			$ 420,651					
Reservoir Rd., SDD, Hwy. 193 Replacements								
Silent Meadow Ln. Line Replacement			$ 197,862					
Sanromo Rd. Line Replacement								$ 959,045
Black Oak Mine Rd. Proposed Improvement								$ 106,561
Greenwood Rd. Main Replacement								
Traverse Creek Rd. Line Replacement								$ 819,975
Bayne Rd. Line Extension								
Bayne Rd. Tank								
Lazy Brook Trl. Line Replacement								$ 231,182
Whitney Ct. Pressure Reducing Station								
Oak Ln. Line Replacement			$ 235,253					
Shasta Rd. Line Replacement								$ 196,866
Talmalpais Rd. Line Replacement			$ 171,376					
Pikes Peak Cir. Line Replacement			$ 99,710					
Garden Park Line Replacement								
Hancock Rd. Tank Tie								
Garden Park Tank Proposed Improvements								
Hotchkiss Hill Sub Tank Addition			$ 691,738					
Traverse Creek Rd. Booster Pumps			$ 96,594					

Table 8
Water System Capitol Improvement Costs and Reliability Measure Recommendations (Adjusted Dollars)

Item	FY 05-24	FY 05	FY 06	FY 07	FY 08	FY 09	FY 10	FY 11	FY 12	FY 13	FY 14	FY 15	FY 16
Chrysler Cir. & Roller Coaster Replacement	$ 1,029,483												
Subtotal	*$ 20,083,281*					*$ 4,379,737*					*$ 4,842,131*		
Total Priority Reliability Measure Recommendations	**$ 24,876,717**	**$ 747,780**	**$ 833,867**	**$ 834,843**	**$ 1,125,509**	**$ 5,631,174**					**$ 4,842,131**		
Second Priority Reliability Measure Recommendations													
Ditch System													
Up-Country Ditch													
Bacon Creek Pipeline	$ 287,145				$ 287,145								
Structure #1 to Structure #2	$ 13,496											$ 13,496	
Structure #2 to Structure #3	$ 411,743	$ 411,743											
Structure #3 to Structure #4	$ 482,747												
Structure #4 to Structure #5	$ 155,700												
Penstock Inlet/Bypass to Tree House Lane	$ 182,178								$ 182,178				
Tree House Lane to Balderston Wastegate	$ 256,857												
Sand Trap Siphon Canyon Creek Conduit	$ 224,871	$ 8,369	$ 8,620	$ 8,878	$ 9,145	$ 9,419	$ 9,702	$ 9,993	$ 10,293	$ 10,601	$ 10,919	$ 11,247	$ 11,584
Buckeye Conduit	$ 449,743	$ 16,738	$ 17,240	$ 17,757	$ 18,290	$ 18,838	$ 19,403	$ 19,985	$ 20,585	$ 21,203	$ 21,839	$ 22,494	$ 23,169
Buckeye Conduit to Schroeder Conduit	$ 60,221												
Schroeder Conduit	$ 146,166	$ 5,440	$ 5,603	$ 5,771	$ 5,944	$ 6,122	$ 6,306	$ 6,495	$ 6,690	$ 6,891	$ 7,098	$ 7,310	$ 7,530
Overall, Up Country Ditch	$ 90,983												
Main/Pilot Hill Ditch (Main Ditch #1)													
The Crails to Buffalo Hills Conduit	$ 101,268												
Buffalo Hills Conduit	$ 220,374	$ 8,201	$ 8,447	$ 8,701	$ 8,962	$ 9,231	$ 9,508	$ 9,793	$ 10,087	$ 10,389	$ 10,701	$ 11,022	$ 11,353
Spanish Dry Diggins Rd. to Taylor Mine Outlet	$ 10,919										$ 10,919		
Cabin Wastegate to Growlersberg Wastegate	$ 7,823												
Summers Wastegate to Spools Wastegate	$ 367,566			$ 367,566									
Spools Wastegate To Jackass Wastegate	$ 242,824							$ 242,824					
Jackass Wastegate to Greenwood Reservoir	$ 26,859												
Main/Pilot Hill Ditch (Main Ditch #2)													
SDD Diversion Flume to Blue Heron Falls	$ 148,415	$ 5,523	$ 5,689	$ 5,860	$ 6,036	$ 6,217	$ 6,403	$ 6,595	$ 6,793	$ 6,997	$ 7,207	$ 7,423	$ 7,646
Blue Heron Way Falls to Kaiser Siphon	$ 115,844											$ 115,844	
Kaiser Pipeline and Kaiser Siphon	$ 196,945						$ 196,945						
Kaiser Pipeline and Kaiser Siphon	$ 186,643	$ 6,946	$ 7,154	$ 7,369	$ 7,590	$ 7,818	$ 8,052	$ 8,294	$ 8,543	$ 8,799	$ 9,063	$ 9,335	$ 9,615
Ford Siphon to ALT Water Treatment Plant	$ 11,662									$ 11,662			
ALT Water Treatment Plant to Campground Wastegate	$ 224,258												
Campground Wastegate to Willow Creek Wastegate	$ 455,364								$ 190,016	$ 195,716	$ 69,632		
Willow Creek Wastegate to Baldridge Wastegate	$ 99,035												
Baldridge Wastegate to Bogus Wastegate	$ 25,859		$ 25,859										
Main/Pilot Hill Ditch (Pilot Hill Ditch)													
Dorman Wye to Knickerbocker Creek	$ 237,729												
Knickerbocker Creek to Pear Orchard Wastegate	$ 143,695												
Pear Orchard Wastegate to Therekel Wastegate	$ 87,598					$ 87,598							
Pilot Hill Ditch													
Therekel Wastegate to State Hwy 49	$ 352,163												$ 352,163
State Hwy 49 to Lovejoy Wastegate	$ 50,389												
Lovejoy Wastegate To Nagle Wastegate	$ 247,902												
Capecroft Wastegate to Wagnor Reservoir	$ 150,637												
Wagner Reservoir to Wagner Reservoir Wastegate	$ 215,783												
Wager Reservoir Wastegate to Bayley House Wastegate	$ 18,964		$ 18,964										
Bayley House Wastegate to Pilot Hill Reservoir	$ 4,241									$ 4,241			
Overall, Pilot Hill Ditch	$ 492,883		$ 42,436	$ 43,709	$ 45,020	$ 46,371	$ 47,762	$ 49,195	$ 50,671	$ 52,191	$ 53,757	$ 61,771	
Kelsey Ditch													
St. James Wastegate to Hwy 49	$ 28,257					$ 28,257							
State Hwy 49 to (Forrest View Dr.) Falls	$ 17,722												
(Forrest View Dr.) Falls to Irish Res. Wastegate	$ 43,968							$ 43,968					
Irish Res. Wastegate to Twin Pines Siphon	$ 393,755												

Table 8
Water System Capitol Improvement Costs and Reliability Measure

Item	FY 17	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	FY 24
Chrysler Cir. & Roller Coaster Replacement								$ 1,029,483
Subtotal			*$ 5,208,285*					*$ 5,653,128*
Total Priority Reliability Measure Recommendations			**$ 5,208,285**					**$ 5,653,128**
Second Priority Reliability Measure Recommendations								
Ditch System								
Up-Country Ditch								
Bacon Creek Pipeline								
Structure #1 to Structure #2								
Structure #2 to Structure #3								
Structure #3 to Structure #4						$ 482,747		
Structure #4 to Structure #5			$ 155,700					
Penstock Inlet/Bypass to Tree House Lane								
Tree House Lane to Balderston Wastegate		$ 256,857						
Sand Trap Siphon Canyon Creek Conduit	$ 11,932	$ 12,290	$ 12,658	$ 13,038	$ 13,429	$ 13,832	$ 14,247	$ 14,675
Buckeye Conduit	$ 23,864	$ 24,580	$ 25,317	$ 26,076	$ 26,859	$ 27,665	$ 28,494	$ 29,349
Buckeye Conduit to Schroeder Conduit		$ 60,221						
Schroeder Conduit	$ 7,756	$ 7,988	$ 8,228	$ 8,475	$ 8,729	$ 8,991	$ 9,261	$ 9,539
Overall, Up Country Ditch								$ 90,983
Main/Pilot Hill Ditch (Main Ditch #1)								
The Crails to Buffalo Hills Conduit			$ 101,268					
Buffalo Hills Conduit	$ 11,693	$ 12,044	$ 12,405	$ 12,777	$ 13,161	$ 13,556	$ 13,962	$ 14,381
Spanish Dry Diggins Rd. to Taylor Mine Outlet								
Cabin Wastegate to Growlersberg Wastegate				$ 7,823				
Summers Wastegate to Spools Wastegate								
Spools Wastegate To Jackass Wastegate								
Jackass Wastegate to Greenwood Reservoir					$ 26,859			
Main/Pilot Hill Ditch (Main Ditch #2)								
SDD Diversion Flume to Blue Heron Falls	$ 7,875	$ 8,111	$ 8,355	$ 8,605	$ 8,863	$ 9,129	$ 9,403	$ 9,685
Blue Heron Way Falls to Kaiser Siphon								
Kaiser Pipeline and Kaiser Siphon								
Kaiser Pipeline and Kaiser Siphon	$ 9,903	$ 10,201	$ 10,507	$ 10,822	$ 11,146	$ 11,481	$ 11,825	$ 12,180
Ford Siphon to ALT Water Treatment Plant								
ALT Water Treatment Plant to Campground Wastegate				$ 224,258				
Campground Wastegate to Willow Creek Wastegate								
Willow Creek Wastegate to Baldridge Wastegate	$ 99,035							
Baldridge Wastegate to Bogus Wastegate								
Main/Pilot Hill Ditch (Pilot Hill Ditch)								
Dorman Wye to Knickerbocker Creek								$ 237,729
Knickerbocker Creek to Pear Orchard Wastegate					$ 143,695			
Pear Orchard Wastegate to Therekel Wastegate								
Pilot Hill Ditch								
Therekel Wastegate to State Hwy 49								
State Hwy 49 to Lovejoy Wastegate		$ 50,389						
Lovejoy Wastegate To Nagle Wastegate							$ 247,902	
Capecroft Wastegate to Wagnor Reservoir			$ 150,637					
Wagner Reservoir to Wagner Reservoir Wastegate						$ 215,783		
Wager Reservoir Wastegate to Bayley House Wastegate								
Bayley House Wastegate to Pilot Hill Reservoir								
Overall, Pilot Hill Ditch								
Kelsey Ditch								
St. James Wastegate to Hwy 49								
State Hwy 49 to (Forrest View Dr.) Falls			$ 17,722					
(Forrest View Dr.) Falls to Irish Res. Wastegate								
Irish Res. Wastegate to Twin Pines Siphon				$ 393,755				

Table 8
Water System Capitol Improvement Costs and Reliability Measure Recommendations (Adjusted Dollars)

Item	FY 05-24	FY 05	FY 06	FY 07	FY 08	FY 09	FY 10	FY 11	FY 12	FY 13	FY 14	FY 15	FY 16
Twin Pines Siphon to Black Oaks Siphon	$ 43,968							$ 43,968					
Black Oaks Siphon to Dukes Wastegate	$ 98,274										$ 98,274		
Dukes Wastegate to State Hwy 193	$ 111,570						$ 111,570						
State Hwy 193 to Chicken Flat Wastegate	$ 238,830			$ 238,830									
Mellows Wastegate to Kelsey Flume	$ 11,247											$ 11,247	
Kelsey Flume Siphon to Stork Wastegate	$ 118,126												
Stork Wastegate to Kelsey Reservoir	$ 44,167												
Overall, Kelsey Ditch	$ 185,326		$ 185,326										
Spanish Dry Diggins Ditch													
SDD Flume to End	$ 38,496	$ 38,496											
Taylor Mine Ditch													
Taylor Mine Outlet to Shadle Reservoir	$ 41,152				$ 41,152								
Other													
Overall, GDPUD	$ 41,844	$ 41,844											
Overall, GDPUD	$ 423,975												
Total Second Priority Reliability Measure Recommendations	**$ 9,086,170**	**$ 543,299**	**$ 325,339**	**$ 704,441**	**$ 429,284**	**$ 219,871**	**$ 415,651**	**$ 441,110**	**$ 485,854**	**$ 328,689**	**$ 299,408**	**$ 271,189**	**$ 423,059**
Total	**$ 43,416,423**	**$ 3,098,729**	**$ 4,792,789**	**$ 4,402,229**	**$ 2,387,669**	**$ 6,167,527**	**$ 415,651**	**$ 441,110**	**$ 485,854**	**$ 328,689**	**$ 5,141,539**	**$ 271,189**	**$ 423,059**
Annual Inflation Rate[1]		3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%

Notes:
1. Costs in each year are adjusted based on the cumulative annual inflation rate.
September 2005 20-City ENRCCI is 3.0% per year.

Table 8
Water System Capitol Improvement Costs and Reliability Measure

Item	FY 17	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23	FY 24
Twin Pines Siphon to Black Oaks Siphon								
Black Oaks Siphon to Dukes Wastegate								
Dukes Wastegate to State Hwy 193								
State Hwy 193 to Chicken Flat Wastegate								
Mellows Wastegate to Kelsey Flume								
Kelsey Flume Siphon to Stork Wastegate	$ 118,126							
Stork Wastegate to Kelsey Reservoir							$ 44,167	
Overall, Kelsey Ditch								
Spanish Dry Diggins Ditch								
SDD Flume to End								
Taylor Mine Ditch								
Taylor Mine Outlet to Shadle Reservoir								
Other								
Overall, GDPUD								
Overall, GDPUD	$ 205,595	$ 218,380						
Total Second Priority Reliability Measure Recommendations	**$ 495,778**	**$ 661,061**	**$ 502,797**	**$ 705,630**	**$ 252,742**	**$ 783,184**	**$ 379,262**	**$ 418,521**
Total	**$ 495,778**	**$ 661,061**	**$ 5,711,082**	**$ 705,630**	**$ 252,742**	**$ 783,184**	**$ 379,262**	**$ 6,071,649**
Annual Inflation Rate[1]	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%

Notes:
1. Costs in each year are adjusted based on the cumulative annual inf
September 2005 20-City ENRCCI is 3.0% per year.

Table 9
Water System Capital Facility Charge

Item	FY 04-05	FY 05-06	FY 06-07	FY 07-08	FY 08-09	FY 09-10	FY 10-11	FY 11-12	FY 12-13	FY 13-14	FY 14-15	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22	FY 22-23	FY 23-24
Water System Replacement Cost																				
Walton Lake WTP (Available Capacity)	$ 1,500,000	$ 1,545,000	$ 1,591,350	$ 1,639,091	$ 1,688,263	$ 1,738,911	$ 1,791,078	$ 1,844,811	$ 1,900,155	$ 1,957,160	$ 2,015,875	$ 2,076,351	$ 2,138,641	$ 2,202,801	$ 2,268,885	$ 2,336,951	$ 2,407,060	$ 2,479,271	$ 2,553,650	$ 2,630,259
Auburn Lake Trails WTP (Available Capacity)	$ 300,000	$ 309,000	$ 318,270																	
Greenwood Lake WTP (Available Capacity)				$ 3,466,667	$ 3,570,667	$ 3,677,787	$ 3,788,120	$ 3,901,764	$ 4,018,817	$ 4,139,381	$ 4,263,563	$ 4,391,470	$ 4,523,214	$ 4,658,910	$ 4,798,677	$ 4,942,638	$ 5,090,917	$ 5,243,644	$ 5,400,954	$ 5,562,982
Structures	$ 4,896,235	$ 5,043,123	$ 5,194,416	$ 5,350,249	$ 5,510,756	$ 5,676,079	$ 5,846,361	$ 6,021,752	$ 6,202,405	$ 6,388,477	$ 6,580,131	$ 6,777,535	$ 6,980,861	$ 7,190,287	$ 7,405,995	$ 7,628,175	$ 7,857,021	$ 8,092,731	$ 8,335,513	$ 8,585,579
Pipelines	$ 37,120,461	$ 38,234,075	$ 39,381,097	$ 40,562,530	$ 41,779,406	$ 43,032,788	$ 44,323,772	$ 45,653,485	$ 47,023,089	$ 48,433,782	$ 49,886,795	$ 51,383,399	$ 52,924,901	$ 54,512,648	$ 56,148,028	$ 57,832,469	$ 59,567,443	$ 61,354,466	$ 63,195,100	$ 65,090,953
Total Water System	*$ 43,816,696*	*$ 45,131,197*	*$ 46,485,133*	*$ 51,018,536*	*$ 52,549,092*	*$ 54,125,565*	*$ 55,749,332*	*$ 57,421,811*	*$ 59,144,466*	*$ 60,918,800*	*$ 62,746,364*	*$ 64,628,755*	*$ 66,567,617*	*$ 68,564,646*	*$ 70,621,585*	*$ 72,740,233*	*$ 74,922,440*	*$ 77,170,113*	*$ 79,485,216*	*$ 81,869,773*
Less Contributions																				
Federal Grant	$ 9,750,000	$ 9,750,000	$ 9,750,000	$ 9,750,000	$ 9,750,000	$ 9,750,000	$ 9,750,000	$ 9,750,000	$ 9,750,000	$ 9,750,000	$ 9,750,000	$ 9,750,000	$ 9,750,000	$ 9,750,000	$ 9,750,000	$ 9,750,000	$ 9,750,000	$ 9,750,000	$ 9,750,000	$ 9,750,000
Total Contributions	*$ 9,750,000*	*$ 9,750,000*	*$ 9,750,000*	*$ 9,750,000*	*$ 9,750,000*	*$ 9,750,000*	*$ 9,750,000*	*$ 9,750,000*	*$ 9,750,000*	*$ 9,750,000*	*$ 9,750,000*	*$ 9,750,000*	*$ 9,750,000*	*$ 9,750,000*	*$ 9,750,000*	*$ 9,750,000*	*$ 9,750,000*	*$ 9,750,000*	*$ 9,750,000*	*$ 9,750,000*
Water System Valuation	$ 34,066,696	$ 35,381,197	$ 36,735,133	$ 41,268,536	$ 42,799,092	$ 44,375,565	$ 45,999,332	$ 47,671,811	$ 49,394,466	$ 51,168,800	$ 52,996,364	$ 54,878,755	$ 56,817,617	$ 58,814,646	$ 60,871,585	$ 62,990,233	$ 65,172,440	$ 67,420,113	$ 69,735,216	$ 72,119,773
WTP Capacity (Max Day)[5]																				
Design Capacity (gal)		4,600,000	4,600,000	5,300,000	5,300,000	5,300,000	5,300,000	5,300,000	5,300,000	5,300,000	5,300,000	5,300,000	5,300,000	5,300,000	5,300,000	5,300,000	5,300,000	5,300,000	5,300,000	5,300,000
Peak Day Unit Cost ($ per Gallon)		$ 7.6916	$ 7.9859	$ 7.7865	$ 8.0753	$ 8.3727	$ 8.6791	$ 8.9947	$ 9.3197	$ 9.6545	$ 9.9993	$ 10.3545	$ 10.7203	$ 11.0971	$ 11.4852	$ 11.8849	$ 12.2967	$ 12.7208	$ 13.1576	$ 13.6075
Peak Day Single Family Use[1]																				
Average Daily Single Family Dwelling Use (gpd)		357	357	357	357	357	357	357	357	357	357	357	357	357	357	357	357	357	357	357
Peak Factor		2.81	2.81	2.81	2.81	2.81	2.81	2.81	2.81	2.81	2.81	2.81	2.81	2.81	2.81	2.81	2.81	2.81	2.81	2.81
Peak Day Single Family Use (gpd)		1003	1003	1003	1003	1003	1003	1003	1003	1003	1003	1003	1003	1003	1003	1003	1003	1003	1003	1003
Equivalent Single Family Dwelling Charge																				
Calculated		$ 7,715	$ 8,010	$ 7,810	$ 8,100	$ 8,398	$ 8,705	$ 9,022	$ 9,348	$ 9,683	$ 10,029	$ 10,386	$ 10,752	$ 11,130	$ 11,520	$ 11,921	$ 12,334	$ 12,759	$ 13,197	$ 13,648
Recommended[6]		$ 7,715	$ 8,010	$ 8,100	$ 8,100	$ 8,398	$ 8,705	$ 9,022	$ 9,348	$ 9,683	$ 10,029	$ 10,386	$ 10,752	$ 11,130	$ 11,520	$ 11,921	$ 12,334	$ 12,759	$ 13,197	$ 13,648
Facility Reserve Charges																				
	Equivalency																			
Meter size	Factor[2]																			
5/8-inch	1.0	$ 7,715	$ 8,010	$ 8,100	$ 8,100	$ 8,398	$ 8,705	$ 9,022	$ 9,348	$ 9,683	$ 10,029	$ 10,386	$ 10,752	$ 11,130	$ 11,520	$ 11,921	$ 12,334	$ 12,759	$ 13,197	$ 13,648
3/4-inch	1.0	$ 7,715	$ 8,010	$ 8,100	$ 8,100	$ 8,398	$ 8,705	$ 9,022	$ 9,348	$ 9,683	$ 10,029	$ 10,386	$ 10,752	$ 11,130	$ 11,520	$ 11,921	$ 12,334	$ 12,759	$ 13,197	$ 13,648
1-inch	2.5	$ 19,287	$ 20,025	$ 20,250	$ 20,249	$ 20,995	$ 21,763	$ 22,554	$ 23,369	$ 24,209	$ 25,073	$ 25,964	$ 26,881	$ 27,826	$ 28,799	$ 29,802	$ 30,834	$ 31,897	$ 32,993	$ 34,121
1 1/2-inch	5.0	$ 38,573	$ 40,049	$ 40,500	$ 40,498	$ 41,989	$ 43,526	$ 45,108	$ 46,738	$ 48,417	$ 50,147	$ 51,928	$ 53,762	$ 55,652	$ 57,598	$ 59,603	$ 61,668	$ 63,795	$ 65,985	$ 68,242
2-inch	8.0	$ 61,717	$ 64,079	$ 64,800	$ 64,796	$ 67,183	$ 69,641	$ 72,173	$ 74,781	$ 77,468	$ 80,234	$ 83,084	$ 86,020	$ 89,043	$ 92,157	$ 95,365	$ 98,669	$ 102,072	$ 105,576	$ 109,187
3-inch	16.0	$ 123,434	$ 128,158	$ 129,600	$ 129,592	$ 134,366	$ 139,283	$ 144,347	$ 149,563	$ 154,935	$ 160,469	$ 166,169	$ 172,039	$ 178,086	$ 184,315	$ 190,730	$ 197,337	$ 204,143	$ 211,153	$ 218,373
4-inch	25.0	$ 192,866	$ 200,246	$ 202,500	$ 202,488	$ 209,947	$ 217,629	$ 225,542	$ 233,692	$ 242,086	$ 250,733	$ 259,639	$ 268,812	$ 278,260	$ 287,992	$ 298,015	$ 308,339	$ 318,973	$ 329,927	$ 341,208
6-inch	50.0	$ 385,732	$ 400,493	$ 405,000	$ 404,976	$ 419,893	$ 435,258	$ 451,083	$ 467,383	$ 484,173	$ 501,466	$ 519,277	$ 537,623	$ 556,520	$ 575,983	$ 596,030	$ 616,679	$ 637,947	$ 659,853	$ 682,416
8-inch	90.0	$ 694,318	$ 720,887	$ 729,000	$ 728,957	$ 755,808	$ 783,464	$ 811,950	$ 841,290	$ 871,511	$ 902,638	$ 934,699	$ 967,722	$ 1,001,735	$ 1,036,769	$ 1,072,854	$ 1,110,022	$ 1,148,304	$ 1,187,735	$ 1,228,349
10-inch	145.0	$ 1,118,623	$ 1,161,429	$ 1,174,500	$ 1,174,431	$ 1,217,691	$ 1,262,248	$ 1,308,141	$ 1,355,412	$ 1,404,101	$ 1,454,250	$ 1,505,904	$ 1,559,108	$ 1,613,907	$ 1,670,351	$ 1,728,488	$ 1,788,369	$ 1,850,046	$ 1,913,574	$ 1,979,007
12-inch	215.0	$ 1,658,647	$ 1,722,119	$ 1,741,500	$ 1,741,398	$ 1,805,541	$ 1,871,609	$ 1,939,658	$ 2,009,749	$ 2,081,943	$ 2,156,302	$ 2,232,892	$ 2,311,780	$ 2,393,035	$ 2,476,727	$ 2,562,930	$ 2,651,719	$ 2,743,172	$ 2,837,368	$ 2,934,390
Residential																				
Single Family		$ 7,715	$ 8,010	$ 8,100	$ 8,100	$ 8,398	$ 8,705	$ 9,022	$ 9,348	$ 9,683	$ 10,029	$ 10,386	$ 10,752	$ 11,130	$ 11,520	$ 11,921	$ 12,334	$ 12,759	$ 13,197	$ 13,648
Duplex		$ 7,715	$ 8,010	$ 8,100	$ 8,100	$ 8,398	$ 8,705	$ 9,022	$ 9,348	$ 9,683	$ 10,029	$ 10,386	$ 10,752	$ 11,130	$ 11,520	$ 11,921	$ 12,334	$ 12,759	$ 13,197	$ 13,648
Multiple Family (per unit)[3]		$ 7,715	$ 8,010	$ 8,100	$ 8,100	$ 8,398	$ 8,705	$ 9,022	$ 9,348	$ 9,683	$ 10,029	$ 10,386	$ 10,752	$ 11,130	$ 11,520	$ 11,921	$ 12,334	$ 12,759	$ 13,197	$ 13,648
Annual Inflation Rate[4]		3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%

Notes:
1. The Peak Day Single Family Use data were determined using Small Acreage (< 1 acre) data.
2. An "equivalency factor" is a unitless value that expresses the capacity of a water meter in terms of rated maximum capacity (in gallons per minute) of a standard meter. For example, using the rated maximum flow rate capacity for a 3/4-inch meter as the standard, a single 1-inch meter is equivalent to about 2 and a half, 3/4-inch meters. And, a single 2-inch meter is equivalent to about eight, 3/4-inch meters.
3. Single family and multi-family residential units demand the same amount of water on an average basis (according to the El Dorado Water Demand Forecast, June 4, 2003). The Water System Reliability Study indicates that one residential unit averages 357 gallons per day with a peak day usage of 888 gallons per day. As shown in Table 10, the charge for a new Residential Single-Family unit is equivalent to the charge for a new Residential Multi-Family unit.
4. September 2005 20-City ENRCCI is 3.0% per year.
5. The maximum day water treatment plant capacity for the fiscal years 04-05, 05-06, and 06-07 is based on the combined design capacity for the Auburn Lake Trails and Walton Lake WTPs. The maximum day water treatment plant capacity for the fiscal years starting 07-08 is based on the combined design capacity for the Greenwood Lake and Walton Lake WTPs.
6. The Greenwood Lake WTP coming on line during 07-08 causes the equivalent cost per dwelling unit to be skewed to a much lower cost than actually exists. The charge should therefore reflect the higher cost applicable the next fiscal year.

Table 10 Revised
Recommended Water System Capital Facility Charges

GDPUD Meter Size	**FY 07-08**	**FY 08-09**	**FY 09-10**	**FY 10-11**	**FY 11-12**
5/8 - 3/4 inch	8,100	8,300	8,500	8,800	9,100
1 inch	20,025	20,626	21,245	21,882	22,538
1 1/2 inch	40,049	41,250	42,488	43,763	45,076
2 inch	64,079	66,001	67,981	70,021	72,121

Assumes 3% increase each year & most common fee is rounded to nearest $100 for 5/8 -3/4 inch meters. The charges will be increased annually by the 20-city Engineering News Record Construction Cost Index.