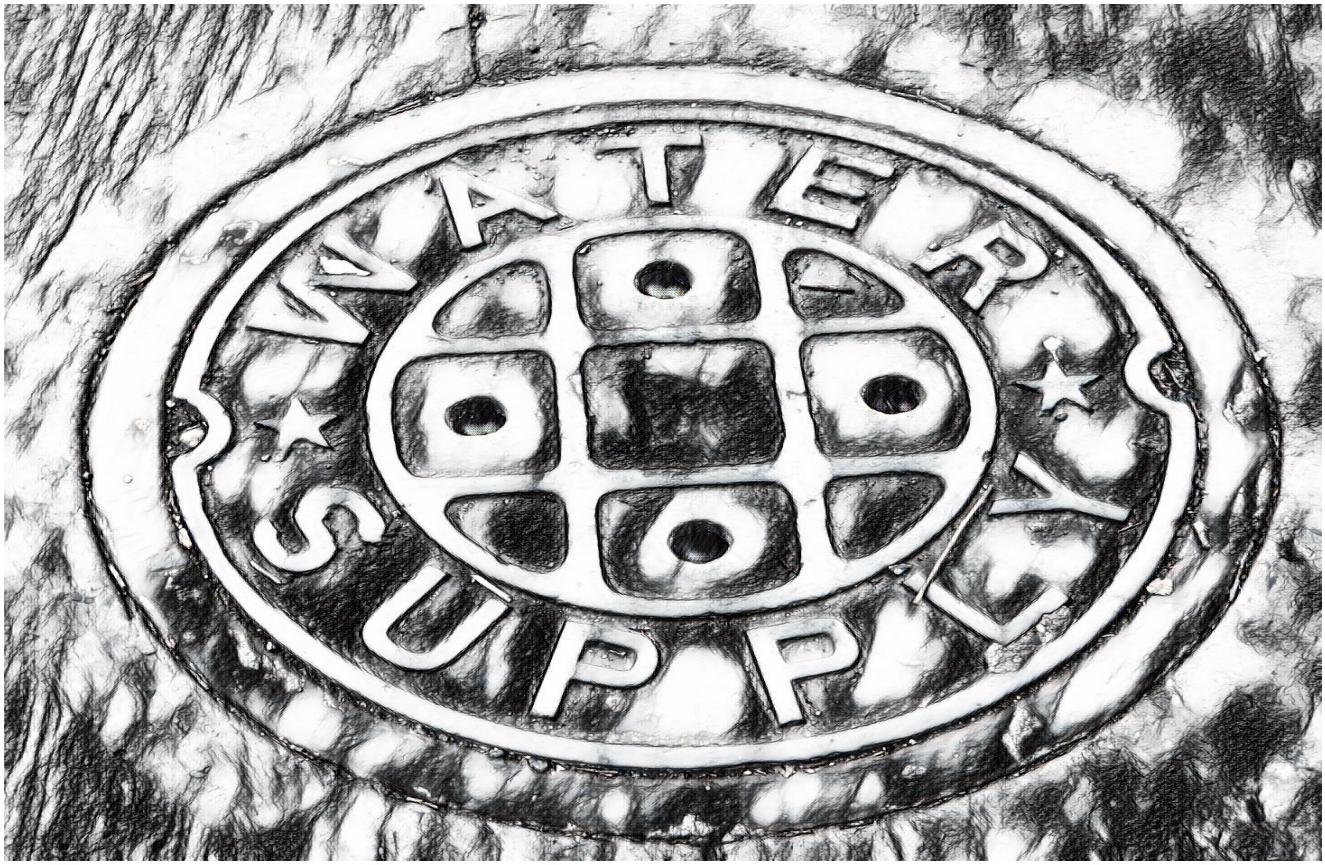

2019 IMPACT FEE FACILITIES PLAN

Mountain Regional Water District

Mountain Regional Water
Special Service District

Mountain Regional Water District
2019 Impact Fee Facility Plan – IFFP

Prepared by the Staff of

Mountain Regional Water
Special Service District

July 17, 2019

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Executive Summary

Mountain Regional Water Special Service District (the "District") has prepared the following Impact Fee Facilities Plan (IFFP) and related Service Strategies in compliance with the Utah Impact Fees Act [Utah Code Title 11 Chapter 36a]. The IFFP serves as the basis for the Impact Fee Analysis where the actual impact fee is calculated. There are four primary components of the IFFP to follow, they include: the Level of Service Standard calculation, the District's 10-year growth projections, the projects the District expects to complete over the next 10 years to support the future growth, and the estimated cost of those projects. With this information and information related to existing District water system assets, an appropriate impact fee can be calculated for future District customers.

The level of service is a term used to describe an Equivalent Residential Connection's (ERC) impact on the core elements of a water district including Water Rights, Source, Storage, and Distribution. Based on water usage data from 2016-2018, the calculated Level of Service is as follows:

Table 1 Levels of Service Summary

LEVEL OF SERVICE ELEMENT	Standard	Unit per ERC
Water Right	0.50	Acre-Feet
Water Source	0.79	GPM
Water Storage	1,000	Gallons
Water Distribution	1.58	GPM

The District's 10-year growth projections suggest an increase of 124 ERCs per year based on the average growth experienced by the District over the last 10 years. Over the next 10 years, the District expects to add 1240 ERCs.

To facilitate the expected growth of 1240 ERCs, the District plans to construct a number of source, storage, and distribution projects. Table 2 on the following page, lists these projects and their estimated construction costs.

Table 2 IFFP Qualified Future Capital Improvements

Ref. #	Project Type	Future IFFP Qualified Capital Projects	Estimated Construction Cost	Project Completion Date
SF1	Source	Share of Regionalization Interconnection Projects	560,084	12/31/20
SF2	Source	Future Well No. 17	789,590	12/31/24
SF3	Source	Pump Capacity Expansion of LCBS	181,700	12/31/22
SF4	Source	Willow Draw Water Treatment Plant	885,500	12/31/28
TF1	Storage	Summit Park Tank 1 Replacement	823,975	12/31/20
DF1	Distribution	The EPA Pipeline Extension	205,000	12/31/19
DF2	Distribution	South Point Distribution Line Size Upgrades	252,353	12/31/21
DF3	Distribution	Willow Creek to Old Ranch Pipeline Connection	137,511	12/31/20
DF4	Distribution	Old Ranch Booster Surge and Pump Upgrades	179,630	12/31/21
DF5	Distribution	Glenwild Pump Station Capacity Upgrades	132,250	12/31/20
DF6	Distribution	Redhawk Pump Station Capacity Upgrades	120,750	12/31/23
DF7	Distribution	Silver Creek Pipeline Extension	715,789	12/31/26

Using the Level of Service Standard, projected growth, the projects needed to support the future growth and their costs, along with the understanding of existing District assets, their capacities, and costs including financing costs, the proportionate share of capacity and related cost can be calculated for a new water connection. This cost becomes the Impact Fee, calculated in the Impact Fee Analysis, to be completed by Zions Public Finance in the fall of 2019. Although financial data is presented later in this report, it is for informational purposes only.

Once the impact fee has been determined, there must be a calculation methodology to understanding what a new project's impact fee shall be since not all projects are equivalent to an ERC of 1. A project's ERC count is calculated in one of the following ways:

- Residential Connections
    - Condo/Townhome: 0.75 ERCs
    - Single Family home up to 3,000 square feet: 1 ERC
    - Single Family home greater than 3,000 square feet: calculated based on the square footage of the home (the District shows a strong correlation of water usage and home living space in Section 5.0)
- Commercial Connections: calculated based on Utah's Division of Drinking Water use tables

This IFFP serves the basis for the Impact Fee Analysis and for the calculation of fees for new connections being added to the District's water system. All of the information summarized in this Executive Summary is provided in more detail in the sections to follow.

1.0 Introduction – The 2019 Impact Fee Facilities Plan (IFFP)

The District has prepared the following IFFP and related Service Strategies to facilitate the fulfillment of its current and long-term water servicing goals and objectives. This plan also meets many goals and objectives presented in the recently approved 2019 Strategic Plan of the District. This 2019 IFFP represents an update to the previous IFFP of 2013. A key component to the IFFP is the Level of Service Standard Analysis. This standard is used to define the proper level of service a typical or Equivalent Residential Customer (ERC) requires of the different types of facilities, in order to receive safe and reliable water service. This IFFP will provide a foundation for the development of the companion 2019 Impact Fee Analysis report.

The IFFP will also aid in future engineering feasibility and preliminary design components associated with the creation of future and possibly other related capital improvements. The future projects listed in this plan and its Subsections may be scoped, designed, engineered, and constructed together or at various times as needed. All of these projects are proposed to be an integral element of the continuing District regionalization strategy, as well as likely future expansion(s) of the Lost Canyon Project or other importation development strategies. The facilities listed in this plan are grouped by their type; they are then discussed in their regional or geographic setting along with a strategy or rationale for their proper development.

All future costs are based on estimates using industry established bond finance costs and/or future inflation costs. The costs are calculated initially using year 2019 dollars. Available alternates, both known and unknown may also prove more viable as the detailed planning and engineering process continues, as well as the refinement of the pros and cons associated with each project. This capital facility development strategy is designed to be modified easily in the future as needs arise.

All of the Capital Facilities or Assets of the District are broken into 4 main types, namely Water Rights, Water Source, Water Storage, and Water Distribution. The assets are further categorized by their location or area within the District and also whether they are existing, or future facilities to be constructed within a future time window of 10 years or less, and beyond 10 years. Their date of acquisition or future construction dates is listed, as well as their Construction Costs, Total Qualifying Costs (which include all financing and inflation costs), their Equivalent Residential Connection (ERC) design capacity in each applicable unit, how much of the capacity is currently utilized, and if there is future capacity—how much of that is available to meet a proper impact fee recovery. Of the Qualifying Costs, a portion may be allocated to the Promontory Impact Fee, which is assessed separately from the General Service Area (GSA) of the District.

Before the facilities are described in detail, it is important to begin with some relevant District background information and data, followed by a definition of the Levels of Service Standards and what exactly an ERC is. Again, these standards are necessary to accurately arrive at the capacity which each facility component can serve in the derived ERC units.

1.1 Background of District

Mountain Regional Water Special Service District has come a long way since its inception in the beginning of 2000. The District started with a couple hundred customers and two employees; now the District employs over 25 and covers an area greater than that of the Northern Salt Lake Valley (over 25,000 acres). Mountain Regional Water has become a premier regional water entity that has complex interconnected water systems spanning much of Western Summit County (Snyderville Basin), all carefully engineered to improve the quality of water and service. The current service area of the District is displayed in the figure below:

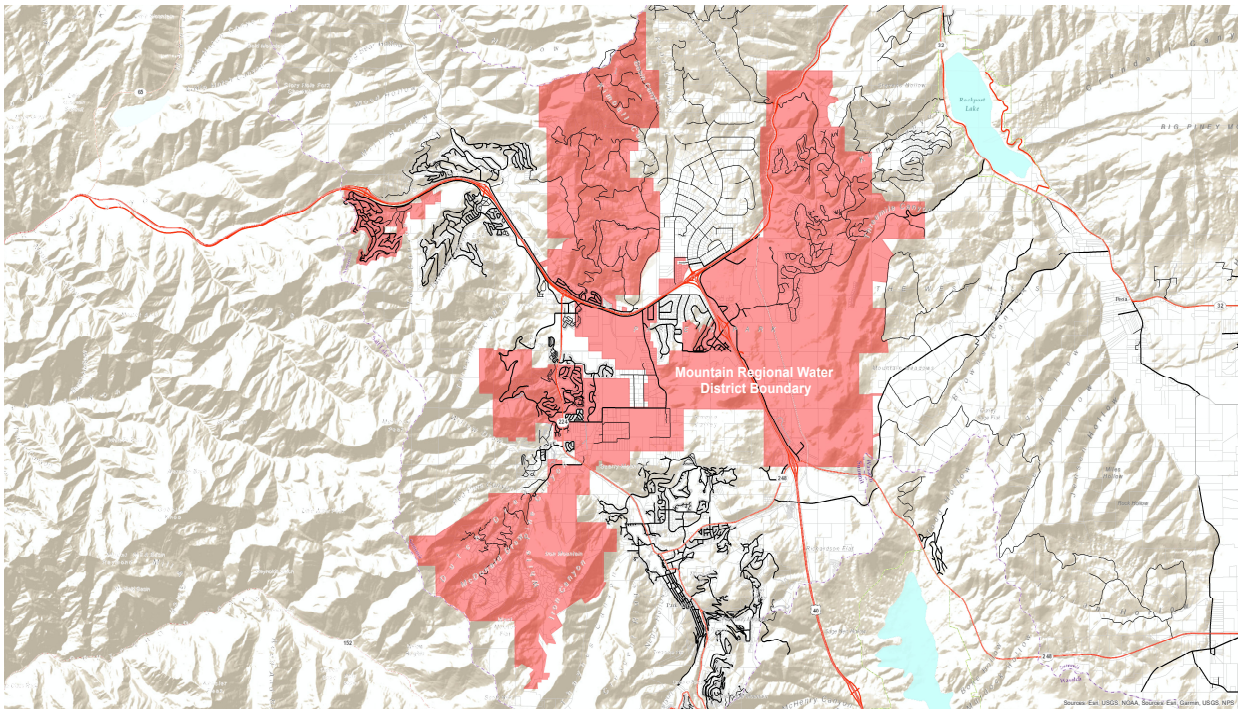


Figure 1 The Service Area of Mountain Regional Water District

1.2 District Organization

Mountain Regional Water is a Special Service District, organized under the laws of Utah (Title 17B-2-1301). The Summit County Commission created the District in January of 2000, and act as the Governing Board of the District. The County Commission (presently a County Council) delegated the majority of its authority to an appointed Administrative Control Board in 2006. This five-member Board is composed of citizen ratepayers of the District which enact most of the operating policies of the District. Management then follows these policies and fulfills the goals and strategies of the governing board and Administrative Control Board.

The District is comprised of five (5) core departments; these include Technology and Energy Management, Operations (which manages three sub-departments), Engineering & Development, Public Services, and Financial Management. Other associated departments or divisions include Human Resources and Services, Legal Services, Pumping Facilities, Distribution, Treatment, and Safety.

1.3 System Statistics

The water system and facilities of the District are complex and cover a scope and geography that can be extremely challenging. Preventive and emergency maintenance and repairs are performed daily and on-call operators staff the system 24 hours a day. Efficiencies are typically suggested by staff and implemented when they are found to be practical and economical. A brief review of the following key system metrics can help paint clear need for continuing review of a comprehensive asset management and IFFP program.

KEY SYSTEM METRICS:

- Approximately 5,500 customers
- Area: 40 square miles
- 10.5 million gallons delivered on a peak day
- 5,800 acre-feet delivered annually
- 10,000 gallons per minute ("GPM") capacity at the Lost Canyon pump station
- 4 million gallons per day ("MGD") capacity water treatment plant
- 18 groundwater wells and 1 groundwater spring
- Over 120 miles of pipe
- 24 storage reservoirs
- 13,000,000 gallons of raw water storage
- 39 water pressure zones
- 30,000 GPM total water pumping capacity
- 80 Pressure Reducing Stations ("PRVs")
- 5 Disinfection Plants
- More than 1,500 fire hydrants
- 9,000 acre-feet of Water Rights
- 10.7 million gallons of water stored which equates to:
  ~172,000 citizen days and ~15 district days
- 140 pumps spread over 44 remote sites
- A pumping elevation which spans from 6,000' to 9,300'
- 9,400 horsepower in electric motors for pumping
- 140 kw Hydro Generation Energy Recovery Facility
- 3.34 billion gallons pumped (2018)
- 10.5 million Kilowatt Hours ("kWh") of Energy used in 2018

2.0 Demographic and Income Profile Report for District

A brief demographic and income profile description of the actual population within the current boundaries of the District as of 2018 is presented in table 3 below. This data is tabulated from adjusted 2010 census data through 2018, as overlaid by the actual District boundaries. It should be noted that population numbers and households are lower than the actual customer or ERC counts used further in this plan because many of our customer units are secondary homes and as such, are not tabulated in Census data.

Table 3 Demographic and Income Profile for Mountain Regional Water District

CURRENT DISTRICT DEMOGRAPHICS	
2018 Total Population	7,539
2018 Total Households	2,664
2018 Average Household Size	2.82
2018 Average Household Income	152,576
2018 Per Capita Income	55,336
2018-2023 Expected Growth/Yr: Population	1.63
2018 Median Household Income	114,377
2018 Population Age 18+	5,656
2023 Total Households	2,880
2018 District Boundary in Acres	25,234

Source: U.S. Census Bureau, Census 2010 Data and ESRI forecasts through 2018.

3.0 The Existing Level of Service Standards

Level of service is defined in the Impact Fees Act as "the defined performance standard or unit of demand for each capital component of a public facility within a service area." With this objective in mind, this Section discusses and calculates the level of service being currently provided to the existing users in the District.

The Levels of Service defines the basic unit standard used by the District to service one Equivalent Residential Connection (ERC) reliably and safely with water. The Level of Service is calculated for each of the 4 key elements of water delivery, namely Water Rights, Source, Storage, and Distribution. Each of these Levels of Service correspond to the 4 types of capital facilities developed in the facilities Sections below. When the Level of Service Unit Standard is divided into the overall capacity of each of the capital facilities described, it produces the total amount of ERC's, each type of facility or its sub-components can adequately serve. A closer examination of what an ERC is, and how it is applied to typical and non-typical users is detailed

in Section 5.0 below. Therefore, an ERC equates to a typical median residential user serviced by the District's water facilities.

3.1 Key Units Used to Develop the Standard

Water Units: The key units used to measure the characteristics of water delivery and referred within this study are listed below (further detailed definitions can be found in Appendix A):

> **Gallons** (US) – the standard unit of volume, for instance per Utah Division of Drinking Water, a typical home uses about 800 gallons of indoor water per day in the summer.
>
> **Gallons per Minute** (GPM) – the standard unit of flow, for instance a well may produce 450 gallons per minute of water or gpm when it is operating.
>
> **Acre-Feet** (af) – a unit of volume equal to an area of one acre, one foot high, or 43,560 cubic feet. It is also equivalent to 325,851 gallons. When volume of water is considered over a large time period, i.e. a year, it is usually expressed in Acre-Feet units instead of gallons. For instance, in Utah, a home uses approximately 0.75 acre feet per year.
>
> **Peaking Factor** (pf) – the ratio of a peak day demand to an average annual day demand. For instance, a typical home or ERC peaking factor is approximately 2.0, meaning the peak day use in the summer is twice the average day use (annual gallons used, divided by 365 days). Peaking factor is a measure of the demand impact a customer has on a water system. A typical water system designs its facilities to meet a peaking factor of approximately 2.0. Certain users may exceed this, such as a recreational park, where most of the annual water demand is in the summer. This type of use can have a peaking factor of 3.0 or above.

Supply and Demand: These terms are used in the water industry to signify the amount of water *supplied* or produced at the water source, as well as the amount of water consumed or used by the customer, as metered through the end user's meter. The consumption is normally referred to as the *demand*. The difference in these two amounts is the "un-accounted" for water, mainly consisting of leaks, theft, emergencies (such as drawn from a fire hydrant), or errors and inaccuracies in metering or the accounting thereof.

Data Periods Used: The statistical periods used to determine the levels of service in this study will be the average of the calendar years of 2016 through 2018. This is significant because 2016 was a relatively normal water year, 2017 was a slightly wetter than normal year and 2018 was a very dry year.

Total Equivalent Residential Connections or ERC's and Related Demands: A summary of the 2016 through 2018 Detailed Demand Reports (see table 4 below), derived from the District's Utility Billing system demonstrates annual and average ERC counts, as well as user demand and

estimated supply side calculations. This data includes all residential customer types, plus all commercial, institutional, and industrial type users. These users are referred to M&I (municipal and industrial) in the table(s) below. It does not, however, include irrigation accounts, agricultural, snowmaking, and any golf courses. It also does not include wholesale contracts for raw or finished water. The total monthly and annual water consumption or demand at the customer meter is calculated, then the highest month is adjusted by a factor of 1.15 to arrive at a peak day of a peak month. This factor is derived from detailed daily water demands provided by the District SCADA system as compared to monthly demand meter reads. Further—to arrive at a supply or source calculation, the demand number is again multiplied by a factor of 1.25, to add a 25 percent system water loss for the peak month of the year (usually July or August), based on actual calculations. Key data utilized further in this plan is shown in red.

Table 4 Total ERC's and Related Demands

#	ANNUAL M&I DEMAND STATISTICS	2016	2017	2018	2016-2018 AVERAGE
A	ERC Count:	3,771	3,876	4,103	3,917
B	Average Gallons per ERC Demand:	120,726	105,503	114,559	113,596
C	Average Ac-Ft per ERC Demand:	0.37	0.32	0.35	0.35
D	Average Day Demand GPM per ERC:	0.23	0.20	0.22	0.22
E	M&I Peaking Factor:	2.25	2.35	2.25	2.28
F	Estimated Peak Day Demand Gallons per ERC:	889	800	833	841
G	Estimated Peak Day Demand GPM per ERC:	0.62	0.56	0.58	0.58
H	Average Gallons per ERC Supply:	158,151	138,209	154,655	150,338
I	Average Ac-Ft per ERC Supply:	0.49	0.42	0.47	0.46
J	Estimated Peak Day Supply Gallons per ERC:	1,075	1,000	1,042	1,039
K	Estimated Peak Day Supply GPM per ERC:	0.75	0.69	0.72	0.72
L	2018 Average Household Size (from Census)	2.82	2.82	2.82	2.82
M	Average Gallons per Capita per Day Demand:	117	102	111	110
N	Peak Day Gallons per Capita Demand:	315	284	295	298
O	Average Monthly Palmer Drought Severity Index:	-0.36	-0.52	-3.69	-1.52

Again—the peaking factor is the ratio of the Peak Day Demand, (PDD), and the Average Day Demand, (ADD). In this case, the peaking factor is close to 2.0, which is a common industry standard for a typical water system of this size.

3.2 The Four Primary Level of Service Standards

A. Water Rights

The Annual Acre Feet of Water Rights per ERC Requirement: This level of service element defines the standard required to provide for an adequate number of legal water rights to provide for the annual water consumption per ERC. This value is calculated by taking the Average Acre-Feet per Unit Supply (line I) of the years 2016 through 2018 on Table 4 above, which provides a value of 0.46 acre feet. This establishes an average annual acre foot amount needed to meet the legal water rights requirements for each ERC. This value is also equivalent to 150,338 gallons consumed annually.

In extended drought cycles, the State of Utah and Weber Basin Water Conservancy District (our largest wholesale water supplier) can cut back on certain lower priority water rights. Including a reasonable ten (10) percent safety factor, the level of service is increased to **0.50 acre feet / year** per ERC.

It is also especially important to remember that impact fees must be calculated to a value which an ERC CAN use – not necessarily what its current use is. The State of Utah Division of Drinking Water requirement is 0.75 acre feet where current viable data is not available by the water supply entity. The District standard is lower than the State standard due to a history of a reliable implementation of valuable conservation practices. The previous IFFP set the standard at 0.60 acre-feet and strict design standards and conservation practices have allowed for this reduction to a current standard.

B. Source

The Peak Day Water Source Supply in GPM per ERC Requirement: This level of service element defines the standard required to provide for an adequate amount of water source capacity needed to match the peak day demand of water consumption per ERC. This value is calculated by taking the peak day of 1,039 gallons (line J of Table 4 above) and dividing it by 1,440 minutes in a day to arrive at a Gallons per Minute (GPM) number. This value is found on line K. and equates to 0.72 GPM, again as averaged over 2016 through 2018. This flow becomes the estimated water source requirement needed per ERC as calculated on an annual peak day of the year and factoring in any system water losses or unaccounted for water. As a further check on this calculation, this value also matches the current 2018 Summit County Water Concurrency Ordinance minimum water source sizing requirement for the District of 0.72 GPM per ERC. Using similar logic to the Water Rights Level of Service above, (where water rights and their interconnected sources could be cut back in severe drought periods), the District likewise increases this Water Source Level of Service by the same 10% safety factor to **0.79 GPM**.

C. Storage

The Equalization Storage Gallons per ERC Requirement: This level of service element defines the standard required to provide for an adequate amount of water storage needed to match the indoor, irrigation, and emergency fire storage demands per ERC. The State of Utah Division of Drinking Water requires a 400 gallon per ERC indoor requirement of distribution system storage plus an outdoor requirement of 1,873 gallons per each irrigated acre. On top of this—any local water purveyor and emergency fire storage requirement may increase that value as needed. Based on previous studies using billing system data and Summit County Assessor data, it was determined that the District has a median residential lot size of 0.3 acres or 13,068 square feet. If we take this number and reduce it further by the associated median living space and garage area of each customer, we arrive at an area of 10,471 square feet or 0.24 acres. Applying this calculation to the outdoor storage requirement, we arrive at 450 additional gallons or 850 total per ERC. Any storage tank must also be at least 240,000 gallons in size (2,000 GPM for 2 hours) to meet the minimum needed fire department requirement, as well.

Mountain Regional Water has adopted a practice of operating most of its pumping systems at night or during "off-peak" energy periods of the day, thus ensuring that the District can conserve energy and power and save on some of the costs of pumping. To achieve this energy conservation and sustainability goal, a slightly greater storage tank capacity would be required for future development. Factoring in this sustainability goal as well as providing adequate fire district emergency storage—the District uses an alternative yet compatible methodology, utilizing the ERC Peak Day Supply Gallons of line J. in Table 4 above as factored into the storage equation. The greatest purpose of storage is to take the peak burden off of sources by averaging demands over a day. The current average of 2016 through 2018 is 1,039 gallons per day. This number is then rounded down to an even **1,000 gallons** of storage per ERC. In other words, both methods complement each other, and there shall always be provided a sufficient equalization storage to meet a typical ERC's peak day demand. This approach is both safe and reliable, especially during the hottest times of the year, when a fire or other emergency is also more likely. The sustainability objective can also provide a viable cost incentive to the customer.

D. Distribution

The Distribution System Peak GPM ERC Requirement: This level of service element defines the standard required to provide for an adequate amount of water distribution system (or pipelines) capacity needed to match the peak hourly and instantaneous demand of water per ERC. The District uses a complex computer modeling system to ensure that its Distribution system, and related pumping and regulation components meet all State of Utah Division of Drinking Water standards.

This calculation is a bit more complicated to present because its level of service is needed to not only ensure that peak flows are provided to each ERC, but that emergency fire flows (approximately 2,000 GPM) are also available at any moment, all while maintaining a minimum pressure of 20 psi in the system. These requirements result in distribution and transmission piping networks being very complex in scope and capacity.

All piping systems must be designed to address these high standards, even if it is seldom utilized. The State of Utah standards increase for a development with a small number of ERC's and decreases— (due to sharing and economies of scale) in flow with a greater number of ERC's, for example, an exceptionally large subdivision. This method makes it difficult to pin an exact GPM number impact per ERC, when, in fact, it may be modified depending on the user's situation and setting. Also – distribution capacity can result from several pipes, including some large and complicated networks and loops, making it difficult to allocate one or more pipes flow volume to any particular ERC. To avoid a detailed computer model for each ERC proposed, the District has established a simpler regime which looks more at the dependent service elements. The logic for this proposed approach is more appropriately described as follows:

Because each level of service element essentially feeds the next level or element with some type of a capacity—we will begin by reviewing the previous described levels of service in a more logical sequence.

First – the Water Rights element is needed to provide an annual total demand in acre-feet with a legal water right (or the right to extract and put to beneficial use a set amount of water, from a particular place of diversion to feed a set service area or user).

This water right allows for the legal development and operation of the ***Second*** element of service, namely the Source – which must be a valid and State approved source of water, i.e. a well, a river treatment facility, or a spring. This source must be capable of feeding the system with a quantity of water needed to meet an ERC's annual AND peak day demand, i.e. the hottest day of the year.

This water is then pumped from a source to the ***Third*** element of service—the correctly sized equalization Storage tank, which provides any given ERC, with a relatively fixed pressure of water (due to the elevation of its tank), and a volume large enough to meet any ERC's *peak hourly and instantaneous flows* in a very high demand period or an emergency. In other words, the storage tank converts the source supply, which could pump at a lower flow, to a very high and short term flow needed in an instant or an emergency. Without the storage—the water sources would need to pump the peak instantaneous flows required, which would be extremely costly and impractical, if not an engineering impossibility.

Because the Distribution system capacity (or ***Fourth*** element of service) is based and designed on established computer models, AND constructed with storage tanks as a key component to their functionality, Mountain Regional will assume that the total new ERC's that are served by the Distribution System will have the same count as that of the storage levels of service. In other words—if there are 1,000 ERC's of capacity remaining in a storage system, there needs to be at least that many available in the distribution system. Therefore, all new, unused capacity ERC's in the Storage element of the impact fee will equal the unused capacity ERC's in the Distribution element of the impact fee calculation.

Even though this figure is not utilized in the final calculation—the level of service standard for the distribution system element is set at a regular peak hourly flow rate of water in GPM needed by the ERC, which is approximately two times the Source capacity needed in GPM (Line K of Table 4), or **1.58 GPM** per ERC.

E. Current Levels of Service Summary

The Summary of all of the Current Level of Service Standards for Mountain Regional Water District per ERC are presented in the following table:

Table 5 Levels of Service Summary

LEVEL OF SERVICE ELEMENT	Standard	Unit per ERC
Water Right	0.50	Acre-Feet
Water Source	0.79	GPM
Water Storage	1,000	Gallons
Water Distribution	1.58	GPM

F. Proposed Levels of Service

The proposed level of service is the performance standard used to evaluate system needs in the future. The Impact Fees Act indicates that the proposed level of service may:

1. Diminish or equal the existing level of service; or
2. Exceed the existing level of service if, independent of the use of impact fees, the District implements and maintains the means to increase the level of service for existing demand within six years of the date on which new growth is charged for the proposed level of service.

In general, the proposed future level of service or performance will be equal to the current standard as presently established herein.

G. Excess Capacity to Accommodate Future Growth

Projected future growth will be met through a combination of available excess capacity in existing facilities and construction of additional capacity in new facilities. Defining existing system capacity in terms of a single number is difficult. To improve the accuracy of the analysis, we have divided the system as stated above into four (4) different components (Water Rights, Source, Storage, and Distribution). The purpose of this breakdown is to consider the available capacity for each component individually. Excess capacity is shown in the detailed tables for each component Subsection which follows.

H. Historical ERC Growth Rates

In order to properly assess and reduce the available capacity on existing approved impact fee capital facilities, the growth rate in ERC's since the last approved plan is an important consideration. For the IFFP, we only look at typical Municipal, Industrial, and Institutional ERC's (M&I), excluding wholesale, agricultural and irrigation customers. New ERC's are further divided into Promontory and the General Service Area ERC's, since these areas are treated different in this IFFP as required by contractual obligations. The growth rate in ERC's as of the end of each year since 2007, and the previous Impact Fee Facility Plan as of December 2013 is shown in Table 6 below as 19.7 percent. ERC populations (not Census) are calculated based on demographic data above, by multiplying the average household size (2.82) by the total annual ERC counts.

Table 6 ERC Past Growth and Demand Data

YEAR	ERC's (End of Year)	Annual New ERC's	Annual Growth Rate	Promontory Service Area	General Service Area	Estimated Population	Peak Gallons per Day / ERC (GPD)	Annual Ac-Ft per ERC	Total Peak Day Demand (MGD)
2007	2,716	115	4.43%	51	64	7,660	934	0.52	2.536
2008	2,861	145	5.34%	61	84	8,069	962	0.54	2.752
2009	3,008	146	5.12%	21	125	8,482	843	0.47	2.536
2010	3,076	69	2.28%	22	47	8,675	900	0.50	2.770
2011	3,149	72	2.34%	19	53	8,879	840	0.47	2.646
2012	3,205	57	1.80%	16	41	9,039	937	0.52	3.003
2013	3,295	89	2.79%	34	55	9,291	839	0.47	2.764
2014	3,413	118	3.58%	33	85	9,623	783	0.44	2.672
2015	3,623	211	6.17%	42	169	10,218	783	0.44	2.837
2016	3,771	148	4.08%	52	96	10,635	889	0.50	3.351
2017	3,876	105	2.77%	50	55	10,929	800	0.45	3.100
2018	4,103	227	5.87%	42	185	11,571	833	0.47	3.419
2019 Est.	4,245	124	3.02%	45	79	11,971	841	0.47	3.568
TOTAL		**1,511**	**35.59%**	**437**	**1,074**				
TOTAL 2014-2018		**808**	**19.70%**	**219**	**589**				

I. Demands Placed on Facilities by New Development

In accordance with the Impact Fee Act, the District is also required to properly assess the percentage of each facility utilization and costs within a future ten (10) year growth window, as well as assessing the percentage of the same beyond ten (10) years. Table 7 below demonstrates the District's estimated ERC growth projections for the next twenty (20) years as taken from the District Growth, Supply and Demands Model. See Appendix B for a detailed chart. Growth from 2020 on is based on a past 10-year average of 124 ERC's per year. For the 10 year window, this equates to approximately 1,240 new ERC's. This then becomes the target facility growth need for all ERC's in the next 10 years.

The growth table below also summarizes updated peak day demand projections based on using the average peak day demand from Table 4, Line F.

Table 7 ERC Future Growth Data

YEAR	ERC's	Estimated ERC Population Equivilant	Peak Gallons per Day / ERC (GPD)	Annual Ac-Ft per ERC	Total Peak Day Demand (MGD)
2019	4,245	11,971	841	0.47	3.568
2020	4,369	12,321	841	0.47	3.673
2021	4,493	12,670	841	0.47	3.777
2022	4,617	13,020	841	0.47	3.881
2023	4,741	13,370	841	0.47	3.985
2024	4,865	13,719	841	0.47	4.090
2025	4,989	14,069	841	0.47	4.194
2026	5,113	14,419	841	0.47	4.298
2027	5,237	14,768	841	0.47	4.402
2028	5,361	15,118	841	0.47	4.507
2029	5,485	15,468	841	0.47	4.611
2030	5,609	15,817	841	0.47	4.715
2031	5,733	16,167	841	0.47	4.819
2032	5,857	16,517	841	0.47	4.924
2033	5,939	16,748	841	0.47	4.992
2034	6,022	16,982	841	0.47	5.062
2035	6,106	17,220	841	0.47	5.133
2036	6,168	17,392	841	0.47	5.185
2037	6,229	17,566	841	0.47	5.236
2038	6,291	17,742	841	0.47	5.289
2039	6,354	17,919	841	0.47	5.342
2040	6,418	18,099	841	0.47	5.395

4.0 Infrastructure Required to Meet Demands of New Development

To satisfy the requirements of state law, the effect of demand placed upon existing system facilities by future development was evaluated using the process outlined below. Each of the steps was completed as part of this plan's development. More description of the methodology used in the process outlined below can be found in the detailed capital facilities Subsections of each component below.

1. **Existing Demand** – The demand existing development places on the District's system was estimated based on historic water use and flow records.

2. **Existing Capacity** – The capacities of existing system facilities were estimated using size data provided by the District and a hydraulic computer model. The capacities of existing production and pumping facilities were taken from the Districts detailed records.

3. **Existing Deficiencies** – Existing deficiencies in the system were looked for by comparing defined levels of service against calculated capacities.

4. **Future Demand** – The demand future development will place on the system was estimated based on development projections as discussed in previous Section(s).

5. **Future Deficiencies** – Future deficiencies in the collection system were identified using defined level of service and results from the District's computer model.

6. **Recommended Improvements** – Needed system improvements were identified to remedy existing deficiencies and meet demands associated with future development.

The steps listed above "identify demands placed upon existing public facilities by new development activity at the proposed level of service; and… the means by which the political subdivision or private entity will meet those growth demands" (Section 11-36a-302(1)(a) of the Utah Code). Additional notes regarding each component of infrastructure is described in detail in the component Subsections and tables below.

In this Section, the capital facilities of existing constructed and proposed projects are presented and evaluated to arrive at a proper new growth impact. Existing projects which have been constructed with District funds and/or bonded are shown, only if they are eligible. Proposed projects which the District believes will serve new development and system expansion within a future ten (10) year window are also shown with a qualified professional engineers estimate of current 2019 costs as well as future costs based on the expected date of the project completion.

Again, projects are separated into four (4) types: Water Rights, Water Source, Water Storage, and Water Distribution. Each of these types of facilities are shown with current and future

facilities (currently Water Rights has no proposed future acquisitions), with a current or proposed available capacity. The capacity is converted to an ERC availability value using the ERC levels of service definitions in Section 3 above, and that value is divided into the total cost of available capacity to arrive at a cost per ERC. Future projects are also accompanied in each sub-Section by a detailed explanation or rational for each project. An overview table of future projects and type is shown in Table 8 below with estimated costs and project completion dates:

Table 8 IFFP Qualified Future Capital Improvements

Ref. #	Project Type	Future IFFP Qualified Capital Projects	Estimated Construction Cost	Project Completion Date
SF1	Source	Share of Regionalization Interconnection Projects	560,084	12/31/20
SF2	Source	Future Well No. 17	789,590	12/31/24
SF3	Source	Pump Capacity Expansion of LCBS	181,700	12/31/22
SF4	Source	Willow Draw Water Treatment Plant	885,500	12/31/28
TF1	Storage	Summit Park Tank 1 Replacement	823,975	12/31/20
DF1	Distribution	The EPA Pipeline Extension	205,000	12/31/19
DF2	Distribution	South Point Distribution Line Size Upgrades	252,353	12/31/21
DF3	Distribution	Willow Creek to Old Ranch Pipeline Connection	137,511	12/31/20
DF4	Distribution	Old Ranch Booster Surge and Pump Upgrades	179,630	12/31/21
DF5	Distribution	Glenwild Pump Station Capacity Upgrades	132,250	12/31/20
DF6	Distribution	Redhawk Pump Station Capacity Upgrades	120,750	12/31/23
DF7	Distribution	Silver Creek Pipeline Extension	715,789	12/31/26

Apart from a detailed analysis of current and future proposed capital facilities, the District also develops a separate impact fee for two different regions of its service area. A separate calculation is used for the Promontory development in the eastern environs of the District and another for the general service area(s) which do not include Promontory.

The Promontory impact fee is calculated differently from the general service area because the major water importation project, known as the Lost Canyon Project, was developed primarily for them, and they funded a large portion of that project. The remaining capacity, as used for development outside of Promontory, was funded by the District. Promontory also pays for all of the water rights needed for their development through build-out.

4.1 10-Year Improvement Plan

In the District's Capital Facilities Plan, capital facility projects needed to provide service to various parts of the District at projected 10-year and buildout scenarios were identified. Many of these projects will need to be constructed in phases as development occurs. Only infrastructure to be constructed within a 10-year horizon will be considered in the calculation of these impact fees to avoid uncertainty surrounding improvements further into the future. Table 8 above summarizes the components of projects identified

in the Capital Facilities Plan that will need to be constructed within the next ten years for the District's general and Promontory service area's.

4.2 Project Cost Attributable to Future Growth

To satisfy the requirements of state law, the Tables in each component Subsection below provides a breakdown of the capital facility projects and the percentage of the project costs attributed to existing and future users. As defined in Section 11-36a-102(15), the impact fee facilities plan should only include the proportionate share of "the cost of public facilities that are roughly proportionate and reasonably related to the service demands and needs of any development activity." While several of the projects identified in the table are required solely to meet future growth, some projects also provide a benefit to existing users. Projects that benefit existing users include those projects addressing existing capacity needs and maintenance related projects. For most projects, the division of costs between existing and future users is easy because 100 percent of the project costs can be attributed to one category or the other (e.g. infrastructure needed solely to serve new development can be 100 percent attributed to new growth, while projects related to existing condition or capacity deficiencies can be 100 percent attributed to existing user needs). For projects needed to address both existing deficiencies and new growth or where a higher level of service is being proposed, costs have been divided proportionally between existing and future users based on their needs in the facility. These percentages have been calculated based on flows in each facility as calculated in the District's planning models and computer hydraulic models.

4.3 Project Cost Attributable to 10-Year Growth

Included in the Tables of each component Subsection below is a breakdown of capacity associated with growth both at full build-out and through the next 10-years. This is necessary because many of the projects identified in the table(s) will be built with capacity to accommodate flows or service beyond the 10-year growth window. This has been done following the same general process as described above.

4.4 Basis of Construction Cost Estimates

The costs of construction for projects to be completed within ten years have been based on the portions of projects that are anticipated to be completed. Unit costs are based on the past District experience with projects of a similar nature in construction while utilizing the District's consulting engineers experience with other projects outside of the District. As necessary, costs have been brought up to current dollars based on estimated construction inflation rates for the area. Appendix D provides the detailed future facility capital construction cost calculations and capacities used in this report as provided by the District's professional Engineering consultant, Aqua Engineering, Inc.

4.5 The Water Right IFFP Components

Water rights owned and listed below in this IFFP are a portion of a much larger portfolio which have been acquired through the District's regionalization process. These water rights do not include as qualifying costs any water rights which are leased from Weber Basin Water Conservancy District and funded by user's water rates. It also excludes rights fully utilized by any current development. The Promontory development is not subject to an impact fee derived from these water rights since they acquired all water rights necessary for their development. Other developers which provide all of the water for a project are also exempt from this component of the overall impact fee assessment.

As can be seen in Table 9 below—there are no planned future water rights purchases which could be applied to impact fees. Only a portion of water rights currently not fully utilized are listed as eligible for impact fee recovery.

Asset Costs: Acquired water rights and their costs which are deemed as qualified costs for future growth in this IFFP are displayed in columns A through F in Table 9 below. The total acquisition costs of the water rights are $11,802,711 dollars.

Eligible Costs: The costs of these assets are further adjusted in columns G through M to arrive at the District Bond Costs if applicable. This value is derived by taking the acquisition cost less any cash the District provided, including funds provided in an Assessment Bond (if relevant), and any impact fee contributions, developer contributions, or other grants received. Assessment bonds, grants, impact fees, and developer contributions are deducted because they are ineligible for impact fee recovery. The final bond costs are then adjusted by a Debt Service (DS) factor to arrive at the Total Debt Costs which includes interest and finance costs over the life of the bond. Eligible cash contributed by the District is then added back in column M to arrive at a Total Cash + Debt cost which becomes the appropriate value utilized in further impact fee calculations.

Capacity Allocations: In columns N through T, the percentage of each asset's capacity as applied to existing customer demands, the next 10-year growth window, and beyond 10 years is shown. The Percent to Existing Demands in column N is calculated by taking the percent used in the 2013 IFFP and adding the percentage of growth as shown in Table 6, which is 19.7%. The Percent to 10 Year Growth is arrived at through the District's growth forecasts. Percent to Growth Beyond 10 Years is the remaining of the total capacity if any. In column Q, the total water right capacity of each asset is displayed in acre-feet. In columns R through T, the capacity in acre-feet of each asset is then proportionally allocated to existing utilization, future 10 year demands, and demands estimated beyond 10 years, using the very same proportional rationale. In the bottom section, the sum of the acre-feet capacity in each category is further divided by the Water Right Level of Service value of 0.50 acre-feet per ERC (from Section 3 above). A utilized and a remaining

available capacity using an ERC Level of Service units is now shown. In the usable future 10-year window, that value is 1,237, which is the only future capacity in ERC units allowed under the Impact Fees Act.

Cost Allocations: In Columns U through W, instead of capacity, the Total Cash plus Debt Costs are now allocated using the same ratio of percentages as utilized in the capacity allocations, which now takes into consideration the amount of asset capacity in value currently allocated among existing customers as well as future availability. The summed value of assets eligible for impact fee recovery in the future 10-year growth window is $8,506,871 dollars.

Gross Impact Fee Summary: After these final Water Right asset costs and capacity adjustments are calculated, a proper gross impact fee per ERC can now be shown in the bottom of Table 9 below. The adjusted cost which is allocable to new growth in the key 10-year window is carried down from the bottom of column V above. That cost is then divided by the Capacity in ERC's within the future 10-year window from column S above, which now provides for a gross water right impact fee. This Gross Impact Fee may be adjusted to a Net Impact Fee in the final Impact Fee Analysis document.

Table 9 Water Rights IFFP Components and Level of Service Capacity

WATER RIGHTS COMPONENTS

a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r	s	t	u	v	w	x
Ref #	EXISTING WATER RIGHTS DESCRIPTIONS	Debt Issue	District Asset Numbers	Com-pletion Date	Total Acquisition Costs	Cash Cost	Assess-ment Funded	Impact Fees, Contri-butions & Grants	MRW Bond Costs	Debt Service Factor	Total Debt Costs	Total Cash + Debt Costs	Percent to Existing Demands	Percent to 10-Year Growth	Percent to Growth Beyond 10-Years	Total Capacity (Ac-Ft)	Existing Capacity Utilized (Ac-Ft)	Capacity for Next 10-Year Demands	Capacity Beyond 10-Year Demands	Cost to Existing Customers	Cost to 10-Year Growth	Costs Beyond 10-Years	Prom-ontory Area
R1	Silver Springs Water Rights / 179 af decreed	Series 2003	5022	5/31/01	896,800	-	-	-	896,800	2.73479	2,452,560	2,452,560	76.9%	23.1%	0.0%	179	138	41	0	1,885,933	566,541	86	
R2	Silver Springs Water Rights / 130 af lease	Series 2003	5024	5/31/01	603,100	-	-	-	603,100	2.73479	1,649,352	1,649,352	76.9%	23.1%	0.0%	130	100	30	0	1,268,294	381,000	58	
R3	Silver Springs Water Rights / 431 af lease	Series 2003	5025	5/31/01	1,999,000	-	-	-	1,999,000	2.73479	5,466,847	5,466,847	76.9%	23.1%	0.0%	431	331	100	0	4,203,815	1,262,842	191	
R4	Silver Springs Water Rights / 100 af lease	Series 2003	5026	5/31/01	463,300	-	-	-	463,300	2.73479	1,267,029	1,267,029	76.9%	23.1%	0.0%	100	77	23	0	974,301	292,684	44	
R5	Spring Creek Water Rights / 200 af lease	Series 2003	5013	6/29/01	14,599	-	-	-	14,599	2.73479	39,925	39,925	9.9%	28.0%	62.1%	200	20	56	124	3,953	11,179	24,794	
R6	Spring Creek Water Rights / 355 af decreed	Series 2003	5014	6/29/01	25,912	-	-	-	25,912	2.73479	70,864	70,864	9.9%	28.0%	62.1%	355	35	99	220	7,016	19,842	44,006	
R7	MJM Water Rights / 1091 af lease	Series 2003	5010/5011	6/29/01	7,800,000	-	-	-	7,800,000	2.73479	21,331,368	21,331,368	54.9%	28.0%	17.1%	961	528	269	164	11,716,484	5,972,783	3,642,101	
				TOTAL COSTS:	11,802,711	-	-	-	11,802,711		32,277,946	32,277,946							TOTAL COSTS:	20,059,796	8,506,871	3,711,279	

	q	r	s	t
TOTAL ACRE-FEET:	2,356	1,229	619	509
WATER RIGHTS LEVEL OF SERVICE (AC-FT/ERC):	0.50	0.50	0.50	0.50
WATER RIGHTS CAPACITY IN ERC UNITS:	4,712	2,457	1,237	1,018

WATER RIGHTS IMPACT FEE SUMMARY	General Service Area	Promontory Service Area
10-Year Growth-Related Cost:	8,506,871	-
10-Year Capacity in ERC Units:	1,237	1,237
Gross Water Rights Impact Fee:	$ 6,877	$ -

4.6 The Water Source IFFP Components

This Subsection of IFFP components account for all of the water source related projects that have been constructed to date, as well as several important future projects which are deemed to be eligible for an impact fee assessment. The current eligible facilities consist primarily of several culinary wells and most all of the related projects associated with the large Lost Canyon Water Importation Project. This project is designed to deliver upwards of 7,000 acre feet of water into the Snyderville Basin and has a sizable future capacity available. The upper section of Table 10 below begins with the existing constructed water source or acquisition costs which are deemed as qualified costs as per this IFFP. In the bottom section of each table the proposed future improvements which qualify are also shown, then both current and future water source components are totaled.

Asset Costs: Water source projects and/or acquisition costs which are deemed as qualified costs for future growth in this IFFP are displayed in columns A through F in Table 10 below. The total construction costs of existing water source projects are $15,021,463 dollars. Future water source projects are projected to cost $3,068,688 dollars when adjusted for a 5% annual inflation rate to their completion dates. Future projects are described in more detail in Appendix C, and each of their values are based on an Engineer's Opinion of Probable Costs as detailed in Appendix D. The total current and future project costs are $18,090,151 dollars.

Eligible Costs: The costs of these assets are further adjusted in columns G through M to arrive at the District Bond Costs if applicable. This value is derived by taking the acquisition cost less any cash the District provided, including funds provided in an Assessment Bond (if relevant), and any impact fee contributions, developer contributions, or other grants received. Assessment bonds, grants, impact fees, and developer contributions are deducted because they are ineligible for impact fee recovery. The final bond costs are then adjusted by a Debt Service (DS) factor to arrive at the Total Debt Costs which includes interest and finance costs over the life of the bond. Eligible cash contributed by the District is then added back in column M to arrive at a Total Cash + Debt cost which becomes the appropriate value utilized in further impact fee calculations.

Capacity Allocations: In columns N through T, the percentage of each asset's capacity as applied to existing customer demands, the next 10-year growth window, and beyond 10 years is shown. The Percent to Existing Demands in column N is calculated by taking the percent used in the 2013 IFFP and adding the percentage of growth as shown in Table 6, which is 19.7%. The Percent to 10 Year Growth is arrived at through District growth forecasts. Percent to Growth Beyond 10 Years is the remaining of the total capacity if any. In column Q, the total water source capacity of each asset is displayed in gallons per minute (GPM). In columns R through T, the capacity in GPM of each asset is then

proportionally allocated to existing utilization, future 10 year demands, and demands estimated beyond 10 years, using the very same proportional rationale. In the bottom section, the sum of the GPM capacity in each category is further divided by the Water Source Level of Service value of 0.79 GPM per ERC (from Section 3 above). A utilized and a remaining available capacity using an ERC Level of Service units is now shown. In the usable future 10-year window of column S, that value is 1,238, which is the only future capacity in ERC units allowed under the Impact Fees Act. There is also a separate calculation below for the assets applicable to the Promontory area as designated in column X with a "Yes."

Cost Allocations: In Columns U through W, instead of capacity, the Total Cash plus Debt Costs are now allocated using the same ratio of percentages as utilized in the capacity allocations, which now takes into consideration the amount of asset capacity in value currently allocated among existing customers as well as future availability. The summed value of current and future assets eligible for impact fee recovery in the future 10-year growth window is $2,021,742 dollars. Again, there is also a separate calculation provided below in the Gross Impact Fee Summary for the assets applicable to the Promontory area as designated in column X with a "Yes."

Gross Impact Fee Summary: After these final current and future water source asset costs and capacity adjustments are calculated, a proper gross impact fee per ERC can now be shown in the bottom of Table 10 below. The adjusted cost which is allocable to new growth in the key 10-year window is carried down from the bottom of column V above. That cost is then divided by the Capacity in ERC's within the future 10-year window from column S above, which now provides for a gross water source impact fee. The same methodology is used for the Promontory service area as shown in the second column of the summary. This Gross Impact Fee may be adjusted to a Net Impact Fee in the final Impact Fee Analysis document.

Table 10 Water Source IFFP Components and Level of Service Capacity

WATER SOURCE COMPONENTS

a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r	s	t	u	v	w	x
Ref #	EXISTING WATER SOURCE DESCRIPTIONS	Debt Issue	District Asset Numbers	Com-pletion Date	Total Project Costs	Cash Cost	Assess-ment Funded	Impact Fees, Contri-butions & Grants	MRW Bond Costs	Debt Service Factor	Total Debt Costs	Total Cash + Debt Costs	Percent to Existing Demands	Percent to 10-Year Growth	Percent to Growth Beyond 10-Years	Total Capacity (GPM)	Existing Capacity Utilized (GPM)	Capacity for Next 10-Year Demands	Capacity Beyond 10-Year Demands	Cost to Existing Customers	Cost to 10-Year Growth	Costs Beyond 10-Years	Prom-ontory Area
SE1	Lost C. - Property Easements	Series 2003	4006,7,8/4409	7/8/03	351,586	136,430	167,708		47,448	2.73479	129,760	266,190											
SE2	Lost C. - Flow Meter		7934	1/1/12	11,703	11,703			-		-	11,703											
SE3	Lost C. - Peoa Well Field	Series 2003	7901	7/8/03	600,147	69,223	440,091		90,833	2.73479	248,409	317,632											
SE4	Lost C. - 8" Culinary Well	Series 2003	7902	2/11/04	92,861		6,224		86,637	2.73479	236,934	236,934											
SE5	Lost C. - Lost Canyon Booster Station	Series 2003	97/6005/7903	2/11/04	2,223,090		1,842,748		380,342	2.73479	1,040,156	1,040,156											
SE6	Lost C. - Booster Station Treatment		7923	11/30/10	166,711	166,711			-		-	166,711											
SE7	Lost C. - Treatment Plant	Series 2003	6/6001,6/790	5/1/05	4,433,663	25,267	3,622,806		785,590	2.73479	2,148,424	2,173,691											
SE8	Lost C. - Treatment Plant Expansion (Initial)	Series 2003	see above	5/1/05	400,000				400,000	2.73479	1,093,916	1,093,916											
SE9	Lost C. - Pretreatment (Post Treatment) Buildin	Series 2011A	6020	7/21/11	1,349,122	316,714		774,306	258,102	1.19451	308,306	625,020											
SE10	Lost C. - Pre & Post Treatment Equipment	Series 2011A	7928	7/21/11	1,264,422	296,830		725,694	241,898	1.19451	288,950	585,780											
SE11	Lost C.- Treatment Plant Boiler		7940	6/12/12	16,410	16,410			-		-	16,410											
SE12	Lost C. - Plant Expansion of 2013 (Green Proj.)	Series 2011B		6/1/13	875,000	-			875,000	1.00000	875,000	875,000											
SE13	**Lost Canyon Sub-Total**				**11,784,715**	**1,039,288**	**6,079,577**	**1,500,000**	**3,165,850**	**2.01205**	**6,369,856**	**7,409,144**	**91.3%**	**6.0%**	**2.7%**	**8,035**	**7,339**	**482**	**214**	**6,767,097**	**444,549**	**197,499**	
SE14	Promontory - Starpointe Well 15B	Series 2003	7914	8/30/03	670,008	20,995			649,013	2.73479	1,774,915	1,795,910	91.3%	8.7%	0.0%	1,200	1,096	104	(0)	1,640,283	156,244	(618)	Yes
SE15	Nugget Well	Series 2003	6010/7016	5/31/01	189,738			57,658	132,080	2.73479	361,211	361,211	83.8%	8.0%	8.2%	195	163	16	16	302,670	28,897	29,645	
SE16	Spring Creek - Gorgoza Well #6		6016	5/31/01	250,000				250,000	2.73479	683,698	683,698	71.8%	24.0%	4.2%	160	115	38	7	491,049	164,087	28,561	
SE17	Spring Creek Well #2R (Blackhawk)	1994 SpCk	7015/6009	5/31/01	282,168				282,168	1.00000	282,168	282,168	71.8%	24.0%	4.2%	105	75	25	4	202,660	67,720	11,787	
SE18	Bison Bluff Well	Series 2014	7966	8/31/17	1,844,834				1,844,834	1.50000	2,767,251	2,767,251	5.0%	24.0%	71.0%	300	15	72	213	138,363	664,140	1,964,749	Yes
				TOTAL EXISTING PROJECT COSTS:	**15,021,463**	**1,060,283**	**6,079,577**	**1,557,658**	**6,323,945**		**12,239,099**	**13,299,382**							**TOTAL EXISTING PROJECT COSTS:**	**9,542,122**	**1,525,638**	**2,231,622**	

a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r	s	t	u	v	w	x
Ref #	FUTURE WATER SOURCE DESCRIPTIONS	Estimated Current Cost	Inflation	Est. Com-pletion Year	Estimated Total Project Costs	Cash Cost	Assess-ment Funded	Impact Fees, Contri-butions & Grants	MRW Bond Costs	Debt Service Factor	Total Debt Costs	Estimated Total Cash + Debt Costs	Percent to Existing Demands	Percent to 10-Year Growth	Percent to Growth Beyond 10-Years	Total Capacity (GPM)	Existing Capacity Utilized (GPM)	Capacity for Next 10-Year Demands	Capacity Beyond 10-Year Demands	Cost to Existing Customers	Cost to 10-Year Growth	Costs Beyond 10-Years	Prom-ontory Area
SF1	Share of Regionalization Interconnection Proje	560,084	28,081	2020	588,165				588,165	1.75000	1,029,289	1,029,289	0.0%	0.0%	100.0%	1,200	-	-	1,200	-	-	1,029,289	
SF2	Future Well No. 17	789,590	197,614	2024	987,204				987,204	1.75000	1,727,607	1,727,607	0.0%	20.0%	80.0%	300	-	60	240	-	345,521	1,382,085	
SF3	Pump Capacity Expansion of LCBS	181,700	27,280	2022	208,980				208,980	1.75000	365,715	365,715	0.0%	20.0%	80.0%	700	-	140	560	-	73,143	292,572	
SF4	Willow Draw Water Treatment Plant	885,500	398,839	2028	1,284,339				1,284,339	1.75000	2,247,593	2,247,593	0.0%	20.0%	80.0%	200	-	40	160	-	449,519	1,798,074	
	TOTAL FUTURE PROJECT COSTS:	**2,416,874**	**651,814**		**3,068,688**	**-**	**-**	**-**	**3,068,688**		**5,370,203**	**5,370,203**							**TOTAL FUTURE PROJECT COSTS:**	**-**	**868,183**	**4,502,020**	
	TOTAL COSTS:	**2,416,874**	**651,814**		**18,090,151**	**1,060,283**	**6,079,577**	**1,557,658**	**9,392,633**		**17,609,303**	**18,669,586**							**TOTAL COSTS:**	**9,542,122**	**2,393,821**	**6,733,642**	

	q	r	s	t
TOTAL EXISTING GPM:	**9,995**	**8,803**	**738**	**454**
TOTAL FUTURE GPM:	**2,400**	**-**	**240**	**2,160**
TOTAL GPM:	**12,395**	**8,803**	**978**	**2,614**
WATER SOURCE LEVEL OF SERVICE (GPM/ERC):	**0.79**	**0.79**	**0.79**	**0.79**
WATER SOURCE CAPACITY IN ERC UNITS:	**15,690**	**11,144**	**1,238**	**3,309**

WATER SOURCE IMPACT FEE SUMMARY	General Service Area	Promontory Service Area
10-Year Growth-Related Cost:	**2,393,821**	**820,385**
10-Year Capacity in ERCs:	**1,238**	**1,238**
Gross Water Source Impact Fee:	**$ 1,934**	**$ 663**

4.7 The Water Storage IFFP Components

The water storage components consist of several of the water tanks and reservoirs located throughout the District. Only a few of these tanks, however, have qualifying costs with excess capacity. The majority of the value of qualifying project(s) consist of a reservoir system necessary to provide vital equalization storage within the growing District, namely within the core Atkinson water zone. This central zone acts as the hub and provides the water to most other water reservoir zones located throughout the District and is vital to achieving reliable and consistent peak day loads and emergency fire flow. It is also the primary receiving zone for water imported from the Lost Canyon Project or any other future importation or storage project. A Timberline/Summit Park enhancement tank is also provided to meet the future development demands necessary in the higher and far western reaches of the District.

Asset Costs: Water storage projects and/or acquisition costs which are deemed as qualified costs for future growth in this IFFP are displayed in columns A through F in Table 11 below. The total construction costs of existing water storage projects are $4,041,894 dollars. Future water storage projects are projected to cost $933,914 dollars when adjusted for a 5% annual inflation rate to their completion dates. Future projects are described in more detail in Appendix C, and each of their values are based on an Engineer's Opinion of Probable Costs as detailed in Appendix D. The total current and future project costs are $4,975,808 dollars.

Eligible Costs: The costs of these assets are further adjusted in columns G through M to arrive at the District Bond Costs if applicable. This value is derived by taking the acquisition cost less any cash the District provided, including funds provided in an Assessment Bond (if relevant), and any impact fee contributions, developer contributions, or other grants received. Assessment bonds, grants, impact fees, and developer contributions are deducted because they are ineligible for impact fee recovery. The final bond costs are then adjusted by a Debt Service (DS) factor to arrive at the Total Debt Costs which includes interest and finance costs over the life of the bond. Eligible cash contributed by the District is then added back in column M to arrive at a Total Cash + Debt cost which becomes the appropriate value utilized in further impact fee calculations.

Capacity Allocations: In columns N through T, the percentage of each asset's capacity as applied to existing customer demands, the next 10-year growth window, and beyond 10 years is shown. The Percent to Existing Demands in column N is calculated by taking the percent used in the 2013 IFFP and adding the percentage of growth as shown in Table 6, which is 19.7%. The Percent to 10 Year Growth is arrived at through District modeling and other growth forecasts. Percent to Growth Beyond 10 Years is the remaining of the total capacity if any. In column Q, the total water storage capacity of each asset is displayed in Gallons. In columns R through T, the capacity in Gallons of each asset is then

proportionally allocated to existing utilization, future 10 year demands, and demands estimated beyond 10 years, using the very same proportional rationale. In the bottom section, the sum of the Gallon capacity in each category is further divided by the Water Storage Level of Service value of 1,000 Gallons per ERC (from Section 3 above). A utilized and a remaining available capacity using an ERC Level of Service units is now shown. In the usable future 10-year window of column S, that value is 1,242, which is the only future capacity in ERC units allowed under the Impact Fees Act. There is also a separate calculation below for the assets applicable to the Promontory area as designated in column X with a "Yes."

Cost Allocations: In Columns U through W, instead of capacity, the Total Cash plus Debt Costs are now allocated using the same ratio of percentages as utilized in the capacity allocations, which now takes into consideration the amount of asset capacity in value currently allocated among existing customers as well as future availability. The summed value of current and future assets eligible for impact fee recovery in the future 10-year growth window is $1,939,142 dollars. Again, there is also a separate calculation provided below in the Gross Impact Fee Summary for the assets applicable to the Promontory area as designated in column X with a "Yes."

Gross Impact Fee Summary: After these final current and future water storage asset costs and capacity adjustments are calculated, a proper gross impact fee per ERC can now be shown in the bottom of Table 11 below. The adjusted cost which is allocable to new growth in the key 10-year window is carried down from the bottom of column V above. That cost is then divided by the Capacity in ERC's within the future 10-year window from column S above, which now provides for a gross water storage impact fee. The same methodology is used for the Promontory service area as shown in the second column of the summary. This Gross Impact Fee may be adjusted to a Net Impact Fee in the final Impact Fee Analysis document.

WATER STORAGE COMPONENTS:

a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r	s	t	u	v	w	x
Ref #	EXISTING WATER STORAGE DESCRIPTIONS	Debt Issue	District Asset Numbers	Com-pletion Date	Total Project Costs	Cash Cost	Assess-ment Funded	Impact Fees, Contri-butions & Grants	MRW Bond Costs	Debt Service Factor	Total Debt Costs	Total Cash + Debt Costs	Percent to Existing Demands	Percent to 10-Year Growth	Percent to Growth Beyond 10-Years	Total Capacity (Gallons)	Existing Capacity Utilized (Gallons)	Capacity for Next 10-Year Demands	Capacity Beyond 10-Year Demands	Cost to Existing Customers	Cost to 10-Year Growth	Costs Beyond 10-Years	Prom-ontory Area
TE1	Colony White Pine Tank	Series 2003	7037	5/1/00	400,000				400,000	2.73479	1,093,916	1,093,916	19.7%	50.0%	30.3%	500,000	98,500	250,000	151,500	215,502	546,958	331,457	
TE2	Silver Springs Mid Mtn Tank	Series 2003	7011	5/31/01	75,037			2,901	72,136	2.73479	197,277	197,277	83.8%	16.2%	0.0%	160,000	134,080	25,920	-	165,318	31,959	-	
TE3	Blackhawk Tank	1994 SpCrk	7009	5/31/01	255,591			213,759	41,832	1.00000	41,832	41,832	71.8%	28.2%	0.0%	500,000	359,000	141,000	-	30,035	11,797	-	
TE4	Silver Creek 2MG Reservoir Project	Series 2014	7972	12/31/18	3,311,266	220,503		1,114,051	1,976,712	1.50000	2,965,068	3,185,571	0.0%	35.0%	65.0%	2,000,000	-	700,000	1,300,000	-	1,114,950	2,070,621	Yes
	TOTAL EXISTING PROJECT COSTS:				4,041,894	220,503	-	1,330,711	2,490,680		4,298,093	4,518,596	TOTAL EXISTING PROJECT COSTS:							410,855	1,705,663	2,402,078	

a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r	s	t	u	v	w	x
Ref #	FUTURE WATER STORAGE DESCRIPTIONS	Estimated Current Cost	Inflation	Est. Com-pletion Year	Estimated Total Project Costs	Cash Cost	Assess-ment Funded	Impact Fees, Contri-butions & Grants	MRW Bond Costs	Debt Service Factor	Total Debt Costs	Estimated Total Cash + Debt Costs	Percent to Existing Demands	Percent to 10-Year Growth	Percent to Growth Beyond 10-Years	Total Capacity (Gallons)	Existing Capacity Utilized (Gallons)	Capacity for Next 10-Year Demands	Capacity Beyond 10-Year Demands	Cost to Existing Customers	Cost to 10-Year Growth	Costs Beyond 10-Years	Prom-ontory Area
TF1	Summit Park 500 K Gallon Tank	823,975	109,939	2022	933,914				933,914	1.75000	1,634,349	1,634,349	35.0%	25.0%	40.0%	500,000	175,000	125,000	200,000	572,022	408,587	653,740	
	TOTAL FUTURE PROJECT COSTS:	823,975	109,939		933,914	-	-	-	933,914		1,634,349	1,634,349	TOTAL FUTURE PROJECT COSTS:							572,022	408,587	653,740	
	TOTAL COSTS:	823,975	109,939		4,975,808	220,503	-	1,330,711	3,424,594		5,932,442	6,152,945	TOTAL COSTS:							982,877	2,114,251	3,055,817	

TOTAL EXISTING GALLONS:	3,160,000	591,580	1,116,920	1,451,500
TOTAL FUTURE GALLONS:	500,000	175,000	125,000	200,000
TOTAL GALLONS:	3,660,000	766,580	1,241,920	1,651,500
WATER SOURCE LEVEL OF SERVICE (GAL/ERC):	1,000	1,000	1,000	1,000
WATER SOURCE CAPACITY IN ERC UNITS:	3,660	767	1,242	1,652

WATER STORAGE IMPACT FEE SUMMARY	General Service Area	Promontory Service Area
10-Year Growth-Related Cost:	2,114,251	1,114,950
10-Year Capacity in ERCs:	1,242	1,242
Gross Water Storage Impact Fee:	$ 1,702	$ 898

4.8 The Water Distribution IFFP Components

This IFFP Section of water Distribution components consists primarily of the water transmission or distribution pipelines and booster stations that interconnect the various subdivisions as well as users within the District with infrastructure needed to deliver water, not only on an average or peak day, but during a fire or other emergency event. The distribution system consists of all piping, master meters, pressure reducing or regulation stations, fire hydrants, valves, and all booster pumping plants (used to raise water from a lower pressure zone to a higher one).

The Distribution system is quite complicated and is developed and improved with complex finite analysis computer models. Most of the existing projects eligible for impact fee recovery in this Section include significant basin wide transmission infrastructure, some Lost Canyon Project and excess capacity in the Promontory system(s), some booster pumping facilities sized for growth in the North Ridge system and other systems. The future projects include transmission and pumping facilities designed to increase capacity in the overall system to safely serve new growth.

Asset Costs: Water distribution projects and/or acquisition costs which are deemed as qualified costs for future growth in this IFFP are displayed in columns A through F in Table 12 below. The total construction costs of existing water distribution projects are $12,194,929 dollars. Future water distribution projects are projected to cost $2,074,954 dollars when adjusted for a 5% annual inflation rate to their completion dates. Future projects are described in more detail in Appendix C, and each of their values are based on an Engineer's Opinion of Probable Costs as detailed in Appendix D. The total current and future project costs are $14,269,883 dollars.

Eligible Costs: The costs of these assets are further adjusted in columns G through M to arrive at the District Bond Costs if applicable. This value is derived by taking the acquisition cost less any cash the District provided, including funds provided in an Assessment Bond (if relevant), and any impact fee contributions, developer contributions, or other grants received. Assessment bonds, grants, impact fees, and developer contributions are deducted because they are ineligible for impact fee recovery. The final bond costs are then adjusted by a Debt Service (DS) factor to arrive at the Total Debt Costs which includes interest and finance costs over the life of the bond. Eligible cash contributed by the District is then added back in column M to arrive at a Total Cash + Debt cost which becomes the appropriate value utilized in further impact fee calculations.

Capacity Allocations: In columns N through T, the percentage of each asset's capacity as applied to existing customer demands, the next 10-year growth window, and beyond 10 years is shown. The Percent to Existing Demands in column N is calculated by taking the percent used in the 2013 IFFP and adding the percentage of growth as shown in Table 6,

which is 19.7%. The Percent to 10 Year Growth is arrived at through District modeling and other forecasts. Percent to Growth Beyond 10 Years is the remaining of the total capacity if any. In columns Q through T, the total water distribution capacity of each asset is not displayed in the typical gallons per minute (GPM). This is due to the fact that pipelines function in a complex network structure, and their capacities can only be calculated in various interconnected series and parallel scenarios. Therefore, the total water distribution capacity of each asset is not shown since in the end, the capacity of the water storage systems will be utilized as described in more detail in Section 3 above.

Cost Allocations: In Columns U through W, instead of capacity, the Total Cash plus Debt Costs are now allocated using the same ratio of percentages as utilized in the capacity allocations, which now takes into consideration the amount of asset capacity in value currently allocated among existing customers as well as future availability. The summed value of current and future assets eligible for impact fee recovery in the future 10-year growth window is $3,512,042 dollars. Again, there is also a separate calculation provided below in the Gross Impact Fee Summary for the assets applicable to the Promontory area as designated in column X with a "Yes."

Gross Impact Fee Summary: After these final current and future water distribution asset costs and capacity adjustments are calculated, a proper gross impact fee per ERC can now be shown in the bottom of Table 12 below. The adjusted cost which is allocable to new growth in the key 10-year window is carried down from the bottom of column V above. That cost is then divided by the Capacity in ERC's within the future 10-year window from column S of the *Water Storage* Component in Table 11 above of 1,242, which now provides for a gross water distribution impact fee. The same methodology is used for the Promontory service area as shown in the second column of the summary. This Gross Impact Fee may be adjusted to a Net Impact Fee in the final Impact Fee Analysis document.

WATER DISTRIBUTION COMPONENTS:

a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r	s	t	u	v	w	x
Ref #	EXISTING WATER DISTRIBUTION DESCRIPTIONS	Debt Issue	District Asset Numbers	Com-pletion Date	Total Project Costs	Cash Cost	Assess-ment Funded	Impact Fees, Contri-butions & Grants	MRW Bond Costs	Debt Service Factor	Total Debt Costs	Total Cash + Debt Costs	Percent to Existing Demands	Percent to 10-Year Growth	Percent to Growth Beyond 10-Years	Total Capacity (GPM)	Existing Capacity Utilized (Gallons)	Capacity for Next 10-Year Demands	Capacity Beyond 10-Year Demands	Cost to Existing Customers	Cost to 10-Year Growth	Costs Beyond 10-Years	Prom-ontory Area
DE1	Atkinson Pipeline Under US-40	Series 2003	7005	9/28/05	158,061				158,061	2.73479	432,264	432,264	59.9%	20.0%	20.1%		-	-	-	258,719	86,453	87,092	
DE2	Atkinson Pipeline Under US-40	Series 2002	7005	9/28/05	241,506	44,531		100,000	96,975	1.21229	117,562	162,093	59.9%	20.0%	20.1%		-	-	-	97,016	32,419	32,658	
DE3	Colony Transmission Line	Series 2003	7036	5/1/00	2,006,214	1,322,226			683,988	2.73479	1,870,564	3,192,790	59.9%	20.0%	20.1%		-	-	-	1,910,954	638,558	643,278	
DE4	Old Ranch Road Transmission Line	Series 2003	7039	4/30/01	800,000				800,000	2.73479	2,187,833	2,187,833	59.9%	20.0%	20.1%		-	-	-	1,309,465	437,567	440,801	
DE5	Trailside 20" Transmission Line	Series 2003	7040	4/30/01	529,029				529,029	2.73479	1,446,784	1,446,784	59.9%	20.0%	20.1%		-	-	-	865,931	289,357	291,496	
DE6	Willow Springs Transmission Line	Series 2003	7041	4/30/01	350,000				350,000	2.73479	957,177	957,177	59.9%	20.0%	20.1%		-	-	-	572,891	191,435	192,850	
DE7	Dairy Booster Pump Station	Series 2003	7042/6015	4/30/01	820,000				820,000	2.73479	2,242,528	2,242,528	59.9%	20.0%	20.1%		-	-	-	1,342,202	448,506	451,821	
DE8	Gorgoza Pipeline (acquired from Timberline)	Series 2006	7004	5/28/04	150,000				150,000	1.00000	150,000	150,000	59.9%	20.0%	20.1%		-	-	-	89,778	30,000	30,222	
DE9	Gorgoza Transmission Line (I-80 Rasmussen)	Series 2003	7038	4/30/01	500,000				500,000	2.73479	1,367,395	1,367,395	59.9%	20.0%	20.1%		-	-	-	818,416	273,479	275,501	
DE10	Summit Park - Interconnect Pipeline	Series 2003	7003	1/19/04	494,485	219,252			275,233	2.73479	752,705	971,957	59.9%	20.0%	20.1%		-	-	-	581,737	194,391	195,828	
DE11	Summit Park - Crestview Booster		7001	1/19/04	132,866	132,866			-		-	132,866	59.9%	20.0%	20.1%		-	-	-	79,523	26,573	26,770	
DE12	Summit Park - Kilby Booster		7002	1/19/04	186,941	186,941			-		-	186,941	59.9%	20.0%	20.1%		-	-	-	111,888	37,388	37,665	
DE13	Promontory to Park City 12" MRW Trans. Line		7925	1/19/04	359,780	359,780			-		-	359,780	59.9%	20.0%	20.1%		-	-	-	215,336	71,956	72,488	Yes
DE14	Lost Canyon - Lost Canyon Raw Water Pipeline	Series 2003	95/7912	2/11/04	4,353,223	56,305	3,563,290		733,628	2.73479	2,006,319	2,062,624	91.3%	8.7%	0.0%		-	-	-	1,883,885	179,448	(709)	
DE15	Promontory - Spine Road Extension	Series 2003	7913	10/20/05	807,066		514,166		292,900	2.73479	801,020	801,020	100.0%	0.0%	0.0%		-	-	-	801,020	-	-	
DE16	Blackhawk Booster Upgrade		7929	5/31/01	107,429	107,429			-		-	107,429	71.8%	20.0%	8.2%		-	-	-	77,158	21,486	8,785	
DE17	Blackhawk (Stonehouse) Vault		7930	5/31/01	36,472	36,472			-		-	36,472	100.0%	0.0%	0.0%		-	-	-	36,472	-	-	
DE18	Red Hawk Antenna			12/31/12	18,941	18,941			-		-	18,941	71.8%	20.0%	8.2%		-	-	-	13,604	3,788	1,549	
DE19	Summit Park - Kilby Booster Chlorine Facility		6022	9/15/11	6,727	6,727			-		-	6,727	71.8%	20.0%	8.2%		-	-	-	4,832	1,345	550	
DE20	Equestrian Transmission Line	Series 2014	7956	12/31/16	136,189	4,172			132,017	1.50000	198,026	202,198	71.8%	20.0%	8.2%		-	-	-	145,223	40,440	16,535	Yes
	TOTAL EXISTING PROJECT COSTS:				12,194,929	2,495,642	4,077,456	100,000	5,521,831		14,530,177	17,025,819								11,216,052	3,004,589	2,805,178	

a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r	s	t	u	v	w	x
Ref #	FUTURE WATER DISTRIBUTION DESCRIPTIONS	Estimated Current Cost	Inflation	Est. Com-pletion Year	Estimated Total Project Costs	Cash Cost	Assess-ment Funded	Impact Fees, Contri-butions & Grants	MRW Bond Costs	Debt Service Factor	Total Debt Costs	Estimated Total Cash + Debt Costs	Percent to Existing Demands	Percent to 10-Year Growth	Percent to Growth Beyond 10-Years	Total Capacity (GPM)	Existing Capacity Utilized (Gallons)	Capacity for Next 10-Year Demands	Capacity Beyond 10-Year Demands	Cost to Existing Customers	Cost to 10-Year Growth	Costs Beyond 10-Years	Prom-ontory Area
DF1	The EPA Pipeline Extension	205,000	-	2019	205,000	205,000			-	1.75000	-	205,000	98.0%	2.0%	0.0%		-	-	-	200,900	4,100	-	Yes
DF2	South Point Distribution Line Size Upgrades	252,353	25,270	2021	277,623				277,623	1.75000	485,840	485,840	0.0%	10.0%	90.0%		-	-	-	-	48,584	437,256	
DF3	Willow Creek to Old Ranch Pipeline Connectio	137,511	6,894	2020	144,405				144,405	1.75000	252,709	252,709	0.0%	50.0%	50.0%		-	-	-	-	126,355	126,355	
DF4	Old Ranch Booster Surge and Pump Upgrades	179,630	17,988	2021	197,618				197,618	1.75000	345,831	345,831	0.0%	50.0%	50.0%		-	-	-	-	172,915	172,915	
DF5	Glenwild Pump Station Capacity Upgrades	132,250	6,631	2020	138,881				138,881	1.75000	243,041	243,041	55.0%	45.0%	0.0%		-	-	-	133,673	109,368	-	
DF6	Redhawk Pump Station Capacity Upgrades	120,750	24,167	2023	144,917				144,917	1.75000	253,604	253,604	53.0%	47.0%	0.0%		-	-	-	134,410	119,194	-	
DF7	Silver Creek Pipeline Extension	715,789	250,722	2026	966,511				966,511	1.75000	1,691,395	1,691,395	82.0%	18.0%	0.0%		-	-	-	1,386,944	304,451	-	
	TOTAL FUTURE PROJECT COSTS:	1,743,283	331,671		2,074,954	205,000	-	-	1,869,954		3,272,420	3,477,420								1,855,926	884,968	736,526	
	TOTAL COSTS:	1,743,283	331,671		14,269,883	2,700,642	4,077,456	100,000	7,391,785		17,802,597	20,503,239								13,071,978	3,889,556	3,541,705	

WATER DISTRIBUTION IMPACT FEE SUMMARY	General Service Area	Promontory Service Area
Water Distribution Level of Service (GPM):	1.44	1.44
10-Year Growth-Related Cost:	3,889,556	116,496
10-Year Capacity in ERCs (From Storage Tables):	1,242	1,242
Gross Water Distribution Impact Fee:	$ 3,132	$ 94

4.9 Gross Impact Fee Summary

Table 13 below summarizes the Gross Impact Fees for Water Rights, Water Source, Water Storage, and Water Distribution components. The fees for the General Service Area (SA) and Promontory Service Area are each shown. Again, it should be remembered that these fees are only a preliminary calculation at this point, other adjustments to arrive at a Net Impact Fee can more appropriately be made in the Impact Fee Analyses document which follows this effort.

Table 13 Gross Impact Fee Summary

IMPACT FEE SUMMARY (GROSS)	General SA	Promon-tory SA
Water Rights:	6,877	-
Water Source:	1,934	663
Water Storage:	1,702	898
Water Distribution:	3,132	94
TOTAL:	**13,645**	**1,654**

5.0 The ERC and the Project Assessment Process

One of the arts of providing reliable water service to customers is defining just what a customer unit really is, or using proper water terms, what the Equivalent Residential Connection or ERC is, and how that unit is applied to a home or other project to establish a unified quantity of a total impact in ERC units. We have described in the previous Section(s) what Level of Service an ERC should receive, but we now need to define the actual ERC and how it is used in any new project assessment process. This is also necessary for proper planning purposes—since there must be a standard unit that can be divided into different types of customers, (i.e. office buildings, large residential estates, schools, etc.) to determine how a base water service charge is calculated, or as more applicable to this review, the impact fee will be applied. Generally, a water system attempts to establish an ERC as the most common typical residential customer they service. This is accomplished by analyzing customer statistics and properties to find what the median residence is, then applying that standard to other types of customers to establish, in the end, some useful form of ERC multiplier, which could then be used across the spectrum of customer types.

In 2013, the District accomplished this feat by analyzing each residential customer in its billing system and applying to each one their total annual water use in gallons as well as the area of their residence AND their property in square feet. With this information, various statistical analyses were applied to determine some type of pattern or trend, and after thorough review it was determined that there is more of a usable correlation to water use and home size, than lot size (lots vary too widely within the District), see chart 1 below. This finding was then used to determine how many ERC units are used in each type of residence, and then within the many other types of users. Customers types serviced by the District are namely: commercial, institutional, recreational, industrial, and four types of residential users. The residential types are further described as follows:

Residential – This is the standard home of 3,000 square feet of living space and less, and represents most of the customers served, and is defined as the standard unit of 1.0 ERC.

Condominiums and Town Homes – These are considered similar and are smaller homes (less than 1,700 square feet of living space), which have attached walls and share a common irrigated area, which acreage is typically small relative to each unit. These are defined as 0.75 ERC units and impact fees are assessed at this factor relative to the standard ERC.

Large Residential – These homes account for most of the larger homes in more “up-scale” neighborhoods of the District. These are defined as homes above the 3,000 square foot living space and are assessed based on a linear formula, relative to the standard ERC, and are explained in more detail below.

Chart 1 below, compares the relationships of living space to lot size and to water demands. A distribution of accounts per size is also displayed. Chart 2 zooms in on the 6,300 square foot

home size and below to show in greater detail the water demand patterns of each residential type of customer.

Chart 1 Relationships of Living Area to Lot Size and Water Demands

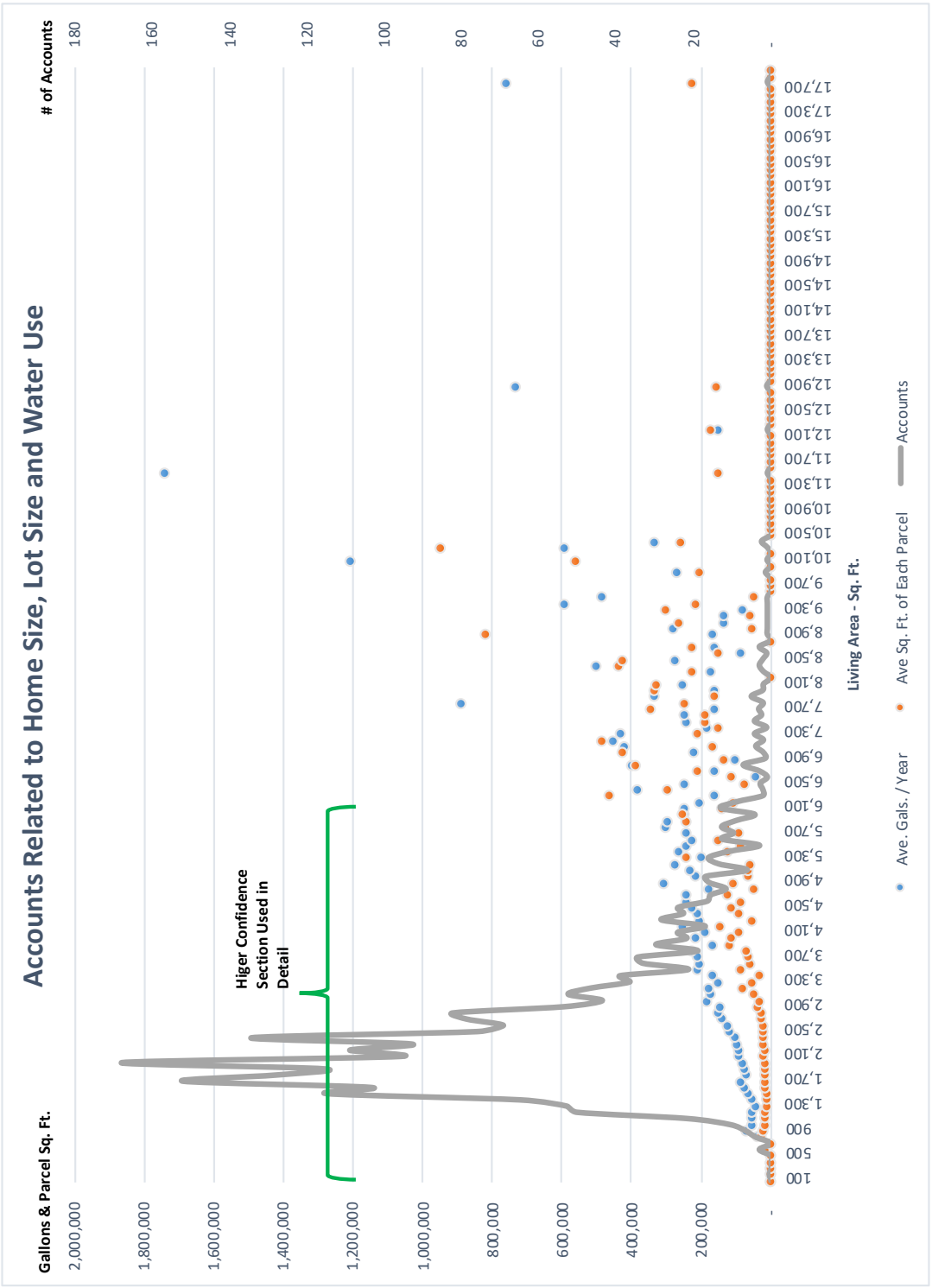


Chart 2 Relationships of Home Size to Water Demands and Supply

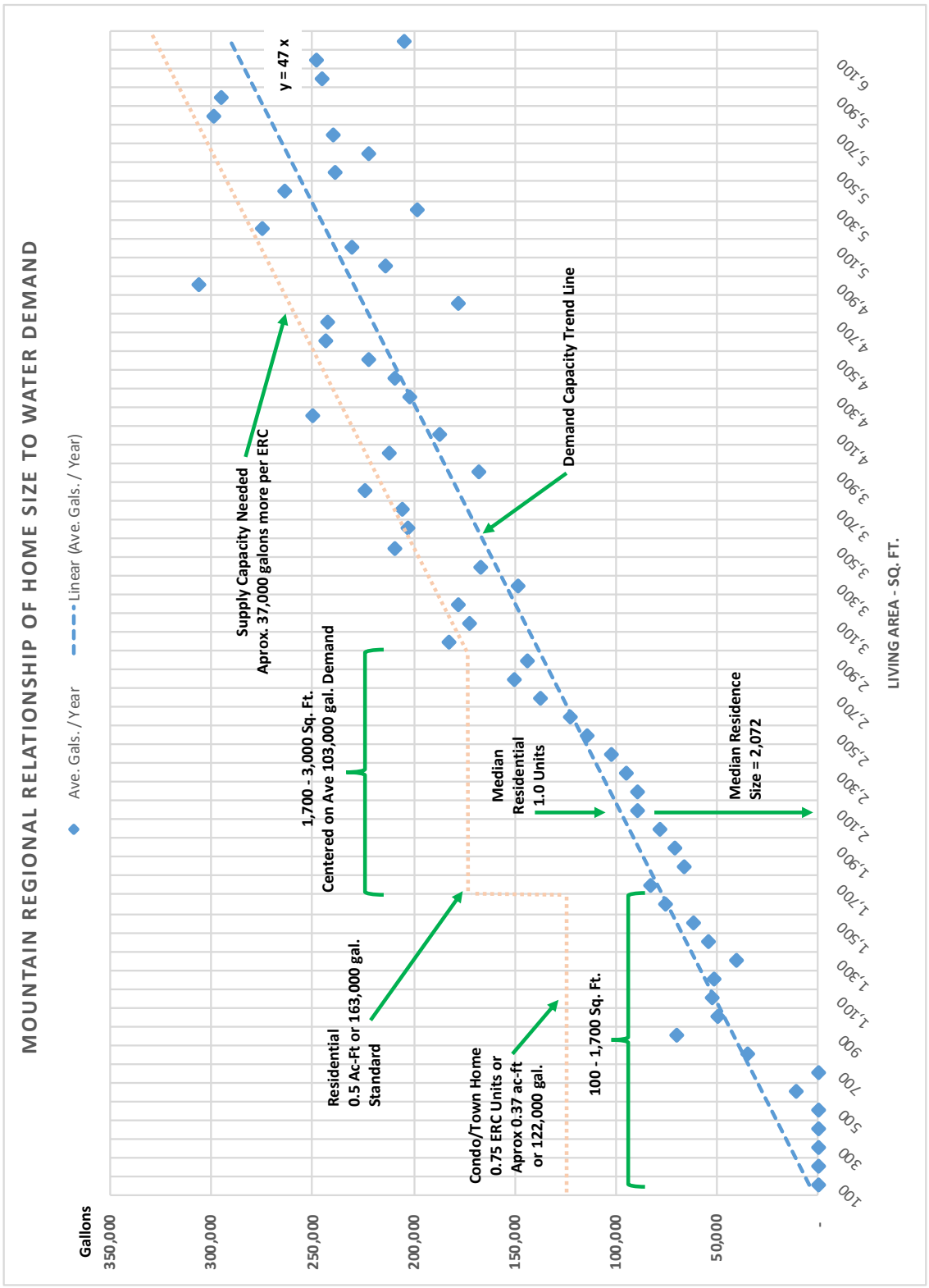


Chart 1 above demonstrates the relationships of all the tested properties of a residential customer, with the home living area applied to water use and property size. A line (grey) showing the number of accounts in each home size division is also represented. This chart was used to pick the range of customer accounts that offer a higher level of statistical confidence, i.e. a greater number of accounts, to be viewed in the window of trends offered in Chart 2.

Chart 2 shows in detail the District's residential experience as home sizes present their annual water uses in gallons. A clear mathematical trend line tracks the user demands through the high confidence areas (below approximately 6,300 sq. ft.) This *demand* line has a slope of 39.1 and the displayed *supply* line (below 3,000 sq. ft.) has the same slope with an added off-set of 78,200 for typical residential customers. The blue demand trend intersects the "Y" axis at zero, but the green supply line levels out at a base residential standard of 1 ERC, or 0.5 acre-feet per year for homes at 3,000 square feet and below.

The median residential home size is marked on the chart at 2,072 square feet, which median home has a demand of 0.32 acre feet a year or approximately 100,000 gallons per year, where the demand trend crosses. The supply trend slope at this same point is at [actually closer to 0.5 acre feet or 163,000 gallons per year, and this again becomes the basic ERC standard of 1.0. The median Condominium / Town Home level is shown on the demand trend line at 0.75 times the standard ERC (or 122,200 gallons), and only applies to attached units below 1,700 square feet.

The break point for the Large Residential customer type begins at 3,000 square feet of home living space and carries with it a base annual usage of 0.5 acre feet or 163,000 gallons per year, PLUS an additional supply calculation based on living space in square feet up to any size. The gallons estimated in this area are based upon the slope of the blue dotted linear function line of the demand on Chart 2, or 47x. In other words, the total annual gallons of demand equals 47 times the residential living area in square feet. For the annual supply needed in gallons, we refer back to Table 4 above, which shows a difference of approximately 37,000 gallons between the annual demand on line "B" and the necessary annual supply on line "H". Therefore, the impact on the annual supply requirement (in gallons) of a home will be calculated using the livable area in square feet, multiplied by 47 and adding 37,000. This value will then be divided by the standard annual ERC Level of Service to arrive at an ERC multiplier (i.e. 1.8). All other impact fee elements will then be derived using this same calculated multiplier. This calculation is necessary due to the increased peak loads on sources and additional irrigation demands imposed upon the water system infrastructure by progressively larger homes, as seen in historical water use data.

Further—homes above 8,000 square feet in living space, may also be assessed an additional irrigation ERC multiplier for disturbed irrigated acreage associated with the home if it exceeds 0.2 acres in size.

6.0 Additional Considerations

6.1 Manner of Financing - 11-36a-302(2)

The District may fund the infrastructure identified in this IFFP through a combination of different revenue sources.

Federal and State Grants and Donations

Impact fees cannot reimburse costs funded or expected to be funded through federal grants and other funds that the City has received for capital improvements without an obligation to repay. Grants and donations are not currently contemplated in this analysis. If grants become available for constructing facilities, impact fees will need to be recalculated and an appropriate credit given. Any existing infrastructure funded through past grants will be removed (or that proportion of the project) from the system value during the impact fee analysis.

Bonds

Where appropriate, costs contained in this IFFP include the cost of bonding. The cost of bonding required to finance impact fee eligible improvements identified in the IFPP may be added to the calculation of the impact fee. This final calculation of bonding costs will be considered in the Impact Fee Analysis.

Interfund Loans

Because infrastructure must generally be built ahead of growth, there often arise situations in which projects must be funded ahead of expected impact fee revenues. In some cases, the solution to this issue will be bonding. In others, funds from existing user rate revenue will be loaned to the impact fee fund to complete initial construction of the project and will be reimbursed later as impact fees are received. Consideration of potential interfund loans may be included in the impact fee analysis and should be considered in subsequent accounting of impact fee expenditures.

Impact Fees

It is recommended that impact fees be used to fund growth-related capital projects as they help to maintain the proposed level of service and prevent existing users from subsidizing the capital needs for new growth. Based on this IFFP, an impact fee analysis will be able to calculate a fair and legal fee that new growth should pay to fund the portion of the existing and new facilities that will benefit new development.

Developer Dedications and Exactions

Developer exactions are not the same as grants. If a developer constructs a system improvement or dedicates land for a system improvement identified in this IFFP, or dedicates a public facility that is recognized to reduce the need for a system improvement, the developer will be entitled to an appropriate credit against that particular developer's impact fee liability or a proportionate reimbursement. Credits may apply to individual improvement components (i.e. Water Right, Source, Storage, Distribution) or a combination, in all or in a fraction thereof, depending on what improvements the developer provides.

If the value of the credit is less than the development's impact fee liability, the developer will owe the balance of the liability to the District. If the recognized value of the improvements/land dedicated is more than the development's impact fee liability, the District must reimburse the difference to the developer from impact fee revenues collected from other developments.

The concept of impact fee credits pertains to system level improvements only. Developers will be responsible for the construction of project improvements (i.e. improvements not identified in the impact fee facilities plan) without credit against the impact fee.

6.2 Necessity of Improvements to Maintain Level of Service - 11-36a-302(3)

According to State statute, impact fees cannot be used to correct deficiencies in the District's system and must be necessary to maintain the proposed level of service established for all users. Only those facilities or portions of facilities that are required to maintain the proposed level of service for future growth have been included in this IFFP. This will result in an equitable fee as future users will not be expected to fund any portion of the facilities that will benefit existing residents.

School Related Infrastructure -11-36a-302(2)

As part of the noticing and data collection process for this plan, information was gathered regarding future school district and charter school development. Where the District is aware of the planned location of a school, required public facilities to serve the school have been included in the impact fee analysis.

Noticing and Adoption Requirements -11-36a-502

The Impact Fees Act requires that entities must publish a notice of intent to prepare or modify any IFFP. If an entity prepares an independent IFFP rather than include a capital

facilities element in the general plan, the actual IFFP must be adopted by enactment. Before the IFFP can be adopted, a reasonable notice of the public hearing must be published in a local newspaper at least 10 days before the actual hearing. A copy of the proposed IFFP must be made available in each public library within the District during the 10-day noticing period for public review and inspection. Utah Code requires that the District must post a copy of the ordinance in at least three places. These places may include the District offices and the public libraries within the District's jurisdiction. Following the 10-day noticing period, a public hearing will be held, after which the District may adopt, amend and adopt, or reject the proposed IFFP.

6.3 Impact Fee Certification 11-36a-306(1)

This IFFP has been prepared in accordance with Utah Code Title 11 Chapter 36a (the "Impact Fees Act"), which prescribes the laws pertaining to the imposition of impact fees in Utah. The accuracy of this IFFP relies in part upon planning, engineering, and other source data, provided by the District and its designees.

In accordance with Utah Code Annotated, 11-36a-306(1), Mountain Regional Water Special Service District (the District) makes the following certification:

The District certifies that the attached impact fee facilities plan:

1. Includes only the costs of public facilities that are:
    a. allowed under the Impact Fees Act; and
    b. actually incurred; or
    c. projected to be incurred or encumbered within six years after the day on which each impact fee is paid;

2. Does not include:
    a. costs of operation and maintenance of public facilities;
    b. costs for qualifying public facilities that will raise the level of service for the facilities, through impact fees, above the level of service that is supported by existing residents; or
    c. an expense for overhead, unless the expense is calculated pursuant to a methodology that is consistent with generally accepted cost accounting practices and the methodological standards set forth by the federal Office of Management and Budget for federal grant reimbursement; and

3. Complies in each relevant respect with the Impact Fees Act.

Appendix A Common Water Terms, Acronyms, and Definitions

Terms or Acronym	DEFINITION
Ac-Ft	Acre Foot, A unit of water volume which equals one acre of area, one foot deep. Approximately 326,000 gallons. An average home would use about three fourths of an acre-foot of water a year.
ADD	Average Day Demand. A statistical water calculation based on an annual water use divided by 365.
ASR	Aquifer Storage and Recovery
AWWA	American Water Works Association
BPS	Booster Pumping Station
C	The discharge coefficient used in the Hazen Williams equation of flow (the higher the C value the higher the flow through a pipe)
CFM	Cubic Feet per Minute. A common unit of flow for air or gas movement.
CFS	Cubic Feet per Second. A common unit of stream or large pipe flow, equaling approximately 448 gallons per minute.
CNG	Compressed Natural Gas
Coliform	A microbiological water quality indicator.
DC /AC	An electrical property meaning Direct Current or Alternating Current
DEQ	Utah Department of Environmental Quality
DDW	The Division of Drinking Water, a Division of DEQ
DI	Ductile Iron Pipe
Drawdown	The ground water level of a well as referenced to the surface elevation in feet. Static level is the elevation with the well off, and dynamic is the level with the well running.
DRC	An operational or management person who is in Direct Responsible Charge for the operation of the water system during a given period.
Dynamic	The system is in an operational or moving state.
ERC	Equivalent Residential Connection, a water system's standard unit of capacity for sizing of a water supply and related system(s).
ET	Evapotranspiration
gal	Gallons
GIS	Geographic Information System
gpm	Gallons per minute
GPS	Global Positioning Systems
HGL	Hydraulic Grade Line
HVAC	Heating, Ventilating and Air Conditioning
Hz	Hertz (a measure of the cycles per second – commonly used with electrical equipment)
IFFP	Impact Fee Facility Plan
IFA	Impact Fee Analysis

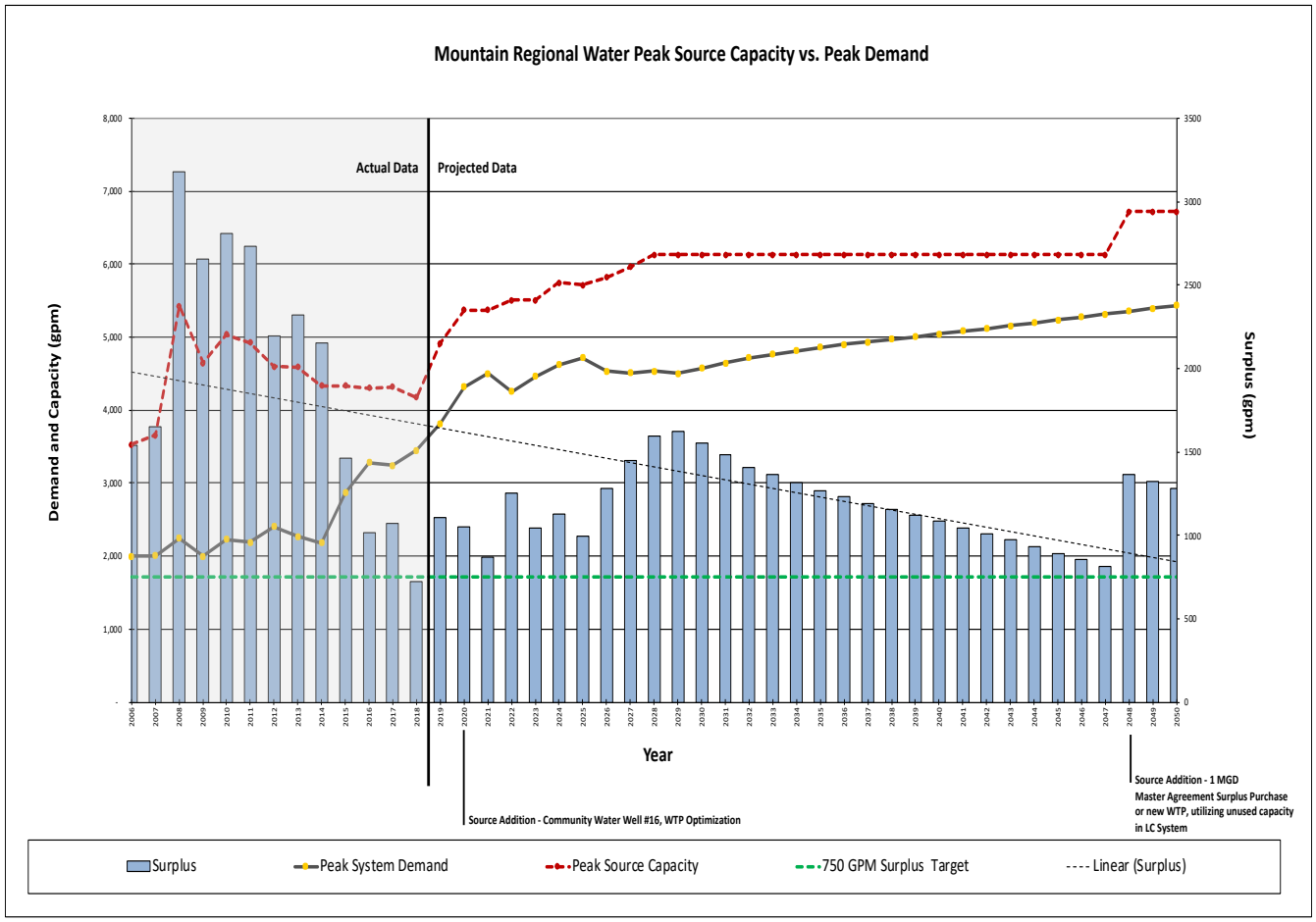
IP	Internet Protocol
IR	Infrared
IT	Information Technology
KG	1,000 gallons
kw	Kilowatts – the primary unit of Power.
kwh	Kilowatt Hours – the primary unit of Energy usage.
KVAR	1,000 VAR's. See VAR below
KVARHr	The portion of energy usage attributed to reactive energy.
LED	Light-emitting Diode
LF	Load Factor (the measure of a time an electrical facility runs during a billing cycle)
MG	Million gallons
mgd	Million gallons per day. A common unit of water flow in large facilities, such as water treatment plants. 1 mgd equals 694.4 gallons.
mg/l	Milligrams per liter (the equivalent of PPD)
M&I	Municipal and Industrial Water— meaning all water provided for residential, commercial, industrial, and institutional users, excluding agricultural and recreational types of users.
mw	Megawatts
NTU	Nephelometric Turbidity Units. A measure of the clarity of water.
O & M	Operation and Maintenance
OPS	Operations Department
PCV	Pump Control Valve or Pressure Control Valve
PDD	Peak Day Demand. A statistical water calculation meaning the peak day demand of a user referenced over a year. Often this is an average day of the peak month if the actual peak day usage is unknown.
PE	Professional Engineer or Polyethylene when referring to pipe.
pf or PF	Peaking Factor. The ratio of the PDD to ADD.
PLC	Programmable Logic Controller
PPD	Pounds per Day
PPM	Parts per million (the equivalent of mg/l)
PRV	Pressure Reducing Valve
PSI	Pounds per Square Inch. A common pressure measurement. 1 PSI equals 2.31 feet of water.
PVC	Polyvinylchloride Pipe
RMP	Rocky Mountain Power
RTD's	Resistance Temperature Detectors (temperature sensors)
RWAU	Rural Water Association of Utah
RVSS	Reduced Voltage Soft Starters

SCADA	Supervisory Control and Data Acquisition (common in Water system operation, automation, and data collection)
SMART Energy Grid	A method by which energy suppliers can monitor and control energy loads, such as reducing AC loads during the peak periods of the day.
Smart Meters	Meters which are remotely read by fixed radio or cellular systems every day and are accurate to hour or sub-hour intervals.
Static	The system is in a non-operational or non-moving state.
TDH	Total Dynamic Head. A pumping system parameter.
TDS	Total Dissolved Solids. A water quality measurement.
THD	Total Harmonic Distortion
TOC	Total Organic Carbon. A water quality measurement.
TSH	Total Suction Head. A pumping system parameter.
TSS	Total Suspended Solids. A water quality measurement.
Transducer	An electronic device used to measure flow, pressure, level, or another parameter which is usually transmitted to a SCADA system.
UPS	Uninterruptible Power Source
UV	Ultraviolet
VAR	Volt-Ampere Reactive, a unit of reactive power in an electrical system. Reactive power exists in an AC circuit when the current and voltage are not in phase.
VFD	Variable Frequency Drive. Used to operate an electrical motor at different speeds.

Appendix B District Supply and Demand Projections

The District is meticulous in its ongoing planning and engineering efforts to meet any demands and infrastructure needs for the immediate and distant future. The chart below is very relevant when looking into the future growth patterns of the District. The future ERC counts which generate the projected water source demand data in this chart are reflected in the ERC growth figures of Table 7 above.

Chart 3 District Supply and Demand Projections



Appendix C Detailed Future Capital Facility Descriptions

Future Water Source Project Details:

SF-1 Regional Interconnect Pipelines and Pumping Facilities

a.	**Type of Project**:	Source
b.	**Description**:	This project includes all necessary interconnects between the District, Summit Water Distribution Company, and Park City, to ensure adequate ability to provide surplus and emergency water between all parties. These interconnects include any related structures, regulation valves, piping, and pumping facilities.
c.	**Capacity**:	1,200 gpm
d.	**Objective**:	To provide for the interim as well as long term interconnects between the three systems. This project will allow water to be sold from one system to another, as well as provide for a long-term distribution allocation system if a new importation and/or storage project is developed. All parties will contribute to the funding. The District will be able to request some capacity for new growth in the future.
e.	**Impact Fee Eligible**:	Yes
f.	**Current Cost:**	$ 560,084 (Represents MRW 1/3 Portion of Project)
g.	**Future Costs (Including Inflation and Financing):**	$ 588,165
h.	**Funding Mechanism**:	District Cash and Impact Fee Revenue
i.	**Start Date**:	9/1/2019
j.	**Completion Date**:	12/31/2020
k.	**Priority**:	Medium
l.	**Pros**:	Key to the future development of a new importation or storage project, and also needed to provide interim supply prior to

		that project(s) completion. Important as an emergency supply of water to any party.
m.	**Cons**:	May require property acquisitions, new access and easements, as well as some environmental work. Capacity for new growth will be in distant future.
n.	**Current Status**:	Engineering

SF-2 Future Well #17

a.	**Type of Project**:	Source
b.	**Description**:	This project consists of a new well source in the lower Silver Creek watershed area drilled into the Keetley Volcanic formation.
c.	**Capacity**:	300 gallons per minute
d.	**Objective**:	To provide additional source water to meet the growing demands of the District
e.	**Impact Fee Eligible**:	Yes
f.	**Current Cost:**	$ 789,590
g.	**Future Costs (Including Inflation and Financing):**	$908,137
h.	**Funding Mechanism**:	District Cash and Impact Fee Revenue
i.	**Start Date**:	1/1/2021
j.	**Completion Date**:	12/31/2022
k.	**Priority**:	Medium
l.	**Pros**:	Prolific aquifer
m.	**Cons**:	Architectural design must meet local requirements of the setting.
n.	**Current Status**:	In feasibility and planning stage

SF-3 Pump Capacity Expansion of Lost Canyon Pump Station

a.	**Type of Project**:	Distribution
b.	**Description**:	This project consists of an upgrade to the current booster pumping facility by adding needed capacity and providing for essential electrical upgrades. This will replace Pump #1 with a larger capacity pump and provide

		other related electirical and piping upgrades.
c.	**Capacity**:	700 gpm
d.	**Objective**:	To provide for additional pumping capacity at the Lost Canyon pump station to meet the growing water demands of the District.
e.	**Impact Fee Eligible**:	Yes
f.	**Current Cost:**	$ 75,000
g.	**Future Costs (Including Inflation and Financing):**	$
h.	**Funding Mechanism**:	District Cash and Impact Fee Revenue
i.	**Start Date**:	1/1/2022
j.	**Completion Date**:	12/31/2022
k.	**Priority**:	Medium
l.	**Pros**:	All construction is within a current facility and is a very cost effective upgrade.
m.	**Cons**:	None
n.	**Current Status**:	Planning and impact fee CFP stage

SF-4 Willow Draw Water Treatment Plant

a.	**Type of Project**:	Source
b.	**Description**:	This project consists of the construction of a water treatment plant in the vicinity of Willow Draw/Lower Canyons Village to replace the old Community Water Plant.
c.	**Capacity**:	200 gallons per minute
d.	**Objective**:	To provide additional summer peak supply water to meet the growing demands of the District.
e.	**Impact Fee Eligible**:	Yes
f.	**Current Cost:**	$ 885,500
g.	**Future Costs (Including Inflation and Financing):**	$1,107,118
h.	**Funding Mechanism**:	District Cash and Impact Fee Revenue
i.	**Start Date**:	7/1/2023
j.	**Completion Date**:	12/31/2024
k.	**Priority**:	Low
l.	**Pros**:	Water rights on Willow Creek are currently owned and not utilized.

m.	**Cons**:	Space is limited and access to current facility is challenging.
n.	**Current Status**:	In feasibility and planning stage

Future Water Storage Project Details:

TF-1 Summit Park 500,000 Gallon Reservoir Upgrade

a.	**Type of Project**:	Storage
b.	**Description**:	This project consists of a 500,000-gallon concrete reservoir, to improve or replace aging metal tank infrastructure feeding Summit Park and connected areas.
c.	**Capacity**:	500,000 gallons.
d.	**Objective**:	To develop additional needed storage solutions for the lower zone (Tank1) of Summit Park and connected areas. This project could be built in connection and/or as an upgrade and replacement for the aging Tank 1 at Summit Park and would benefit these areas as well as the new Discovery subdivision and other future projects located along Kilby Rd.
e.	**Impact Fee Eligible**:	Yes
f.	**Current Cost:**	$ 823,975
g.	**Future Costs (Including Inflation and Financing)**:	$ 933,914
h.	**Funding Mechanism**:	District Cash and Impact Fee Revenue
i.	**Start Date**:	1/1/2020
j.	**Completion Date**:	1/1/2022
k.	**Priority**:	High
l.	**Pros**:	Provides extra water storage to replace or extend the available capacity of Summit Park Tank due to new development. Affordable source of new development storage.
m.	**Cons**:	Construction in the middle of developed and established areas.
n.	**Current Status**:	Planning and CFP stage

Future Water Distribution Project Details:

DF-1 EPA Pipeline Line Extension

a.	**Type of Project**:	Distribution
b.	**Description**:	This project consists of 2,500 feet of 12" diameter PVC transmission pipe, installed along Silver Gate Dr. between the Promontory and Silver Creek Village subdivisions.
c.	**Capacity**:	3,200 gpm
d.	**Objective**:	To provide a needed loop around the Business Park to facilitate the added delivery capacity of Wells 15c and the treatment plant to the central basin customers.
e.	**Impact Fee Eligible**:	Yes
f.	**Current Cost:**	$ 205,000
g.	**Future Costs (Including Inflation and Financing):**	N/A
h.	**Funding Mechanism**:	District Cash and Impact Fee Revenue
i.	**Start Date**:	6/1/2019
j.	**Completion Date**:	12/31/2019
k.	**Priority**:	High
l.	**Pros**:	Unimproved roadway surface
m.	**Cons**:	Located in the Silver Creek Overlay Zone
n.	**Current Status**:	Construction Stage

DF-2 South Point Distribution System Capacity Upgrades

a.	**Type of Project**:	Distribution
b.	**Description**:	This project consists of a capacity upgrade to the South Point subdivision main transmission line into Browns Canyon.
c.	**Capacity**:	2,000 gpm
d.	**Objective**:	To allow future service into the Brown's Canyon periphery as well as providing a key transmission line to allow for the

		development of water sources (wells) in the Browns Canyon area. This water could be pumped into the entirety of the District
e.	**Impact Fee Eligible**:	Yes
f.	**Current Cost:**	$ 658,547
g.	**Future Costs (Including Inflation and Financing)**:	$724,492
h.	**Funding Mechanism**:	District cash and Impact Fee Revenue
i.	**Start Date**:	1/1/2021
j.	**Completion Date**:	12/31/2021
k.	**Priority**:	Low
l.	**Pros**:	Improvements to an approved development
m.	**Cons**:	None
n.	**Current Status**:	Feasibility and planning stage

DF-3 Willow Creek to Old Ranch Pipeline Connection

a.	**Type of Project**:	Distribution
b.	**Description**:	This project consists of 1,000 feet of an 8" diameter PVC distribution water main installed between the Willow Creek Development and the Old Ranch Rd. booster pump station.
c.	**Capacity**:	1,500 gpm
d.	**Objective**:	To place the Willow Creek system on the Atkinson zone and free up storage in the White Pine Tank to support future connections related to growth.
e.	**Impact Fee Eligible**:	Yes
f.	**Current Cost:**	$ 137,511
g.	**Future Costs (Including Inflation and Financing):**	$144,405
h.	**Funding Mechanism**:	District Cash and Impact Fee Revenue
i.	**Start Date**:	5/1/2020
j.	**Completion Date**:	12/31/2020
k.	**Priority**:	Medium
l.	**Pros**:	Short pipe length, and significant energy efficiency improvements.
m.	**Cons**:	Alignment challenges

n.	**Current Status**:	Planning and impact fee CFP stage

DF-4 Old Ranch Booster Station Surge and Pump Upgrades

a.	**Type of Project**:	Distribution
b.	**Description**:	This project includes the installation of a surge tank on the suction side of the pump station and the addition of pump upgrades including a jockey pump.
c.	**Capacity**:	NA
d.	**Objective**:	To provide for surge protection at the Old Ranch Rd. booster pump station on the suction or low-pressure side and to improve the energy efficiency of the District's operations through the installation of a jockey pump. This project is necessary due to the expanded capacity of the pump station to handle new growth.
e.	**Impact Fee Eligible**:	Yes
f.	**Current Cost:**	$ 179,630
g.	**Future Costs (Including Inflation and Financing):**	$ 188,636
h.	**Funding Mechanism**:	District Cash and Impact Fee Revenue
i.	**Start Date**:	1/1/2020
j.	**Completion Date**:	12/31/2020
k.	**Priority**:	Medium
l.	**Pros**:	Improvements to an existing facility
m.	**Cons**:	NA
n.	**Current Status**:	Planning and impact fee CFP stage

DF-5 Glenwild Pump Station Capacity Upgrade

a.	**Type of Project**:	Distribution
b.	**Description**:	This project consists of an upgrade to the current booster pumping facility by adding needed capacity and providing for essential electrical upgrades.
c.	**Capacity**:	750 gpm

d.	**Objective**:	To provide for the booster pumping capacity and servicing of future projects along the upper North Ridge service area of the District. This project adds a needed increase in pumping capacity to meet future demands.
e.	**Impact Fee Eligible**:	Yes
f.	**Current Cost:**	$ 132,250
g.	**Future Costs (Including Inflation and Financing):**	$138,881
h.	**Funding Mechanism**:	District Cash and Impact Fee Revenue
i.	**Start Date**:	5/1/2020
j.	**Completion Date**:	12/1/2020
k.	**Priority**:	High
l.	**Pros**:	All construction is within a current facility
m.	**Cons**:	None.
n.	**Current Status**:	Planning and impact fee CFP stage

DF-6 Redhawk Pump Station Capacity Upgrade

a.	**Type of Project**:	Distribution
b.	**Description**:	This project consists of an upgrade to the current booster pumping facility by adding needed capacity and providing for essential electrical upgrades.
c.	**Capacity**:	300 gpm
d.	**Objective**:	To provide for the booster pumping capacity and servicing of future projects along the upper North Ridge service area of the District. This project adds a needed increase in pumping capacity to meet future demands.
e.	**Impact Fee Eligible**:	Yes
f.	**Current Cost:**	$ 120,750
g.	**Future Costs (Including Inflation and Financing):**	$ 144,917
h.	**Funding Mechanism**:	District Cash and Impact Fee Revenue
i.	**Start Date**:	5/1/2023
j.	**Completion Date**:	12/31/2023
k.	**Priority**:	High

l.	**Pros**:	All construction is within a current facility
m.	**Cons**:	None
n.	**Current Status**:	Planning and impact fee CFP stage

DF-7 Silver Creek Estates Pipeline Extension (Chris' Loop)

a.	**Type of Project**:	Distribution
b.	**Description**:	This project consists of approximately 6,200 LF of new 12" PVC pipe connecting the Silver Creek Estates and Silver Creek Village developments.
c.	**Capacity**:	3,500 gpm
d.	**Objective**:	To provide for additional capacity in the District's distribution system to serve the North Ridge and Summit Park areas and to serve District growth along the water main alignment.
e.	**Impact Fee Eligible**:	Yes
f.	**Current Cost:**	$ 715,789
g.	**Future Costs (Including Inflation and Financing):**	$ 859,045
h.	**Funding Mechanism**:	District Cash and Impact Fee Revenue
i.	**Start Date**:	1/1/2023
j.	**Completion Date**:	12/31/2023
k.	**Priority**:	Low
l.	**Pros**:	Straightforward alignment
m.	**Cons**:	Private roads
n.	**Current Status**:	Planning and impact fee CFP stage

Appendix D Future Construction Project(s) Cost and Capacities

Future IFFP eligible projects referenced herein, including their related capacity, current, and future costs, have been studied and an Engineer's Opinion of Probable Costs was prepared by Professional Consulting Engineers at Aqua Engineering, Inc. of Bountiful, Utah. The attached report forms the cost basis for all qualifying IFFP projects presented in this study.

Mountain Regional Water Special Service District
Regional Interconnect and Pumping Facility
Engineer's Opinion of Probable Costs
4/10/2019

ITEM NO.	ITEM	UNIT	EST. QTY	UNIT PRICE	TOTAL COST
1	Building Permitting	LS	1	$ 10,000.00	$ 10,000.00
2	Mobilization	LS	1	$ 20,000.00	$ 20,000.00
3	Furnish and install 8' x 12' Precast Concrete Interconnect Vault	LS	1	$ 20,000.00	$ 20,000.00
4	Furnish and Install Interconnect Piping, Isolation and Control Valves, Flow Meter and Air/Pressure Transducer Trees	LS	1	$ 50,000.00	$ 50,000.00
5	Furnish and Install Power from Pump Station, Update Panel and Install EC&I Equipment	LS	1	$ 35,000.00	$ 35,000.00
6	Directional Drill of Silver Creek Parkway	LF	100	$ 120.00	$ 12,000.00
7	Hot Tap Existing 18-inch and 20-inch Lines	EA	2	$ 8,500.00	$ 17,000.00
8	Site Stabilization and Revegetation	LS	1	$ 2,500.00	$ 2,500.00
9	Traffic Control Signage	LS	1	$ 5,000.00	$ 5,000.00
				Construction Total	$ 171,500.00
				Contingency (15%)	$ 25,725.00
				Subtotal	$ 197,225.00
10	PCMC Regionalization Costs	LS	1	$ 1,500,000.00	$ 1,500,000.00
				PROJECT TOTAL	$ 1,697,225.00
				1/3 MRWSSD Cost Share	**$ 560,084.25**

Number of Months to Completion		21
Construction and materials inflation Interest Rate		5%
Financing Interest Rate		0.04
Number of Years Financed		25
Current Cost	$	560,084.25
Construction Year Cost (12/31/2020)	$	610,006.74
Estimated Total Project Cost (including Financing)	$	(965,952.09)

Mountain Regional Water Special Service District
Future Tank Well #2
Engineer's Opinion of Probable Costs
6/6/2019

ITEM NO.	ITEM	UNIT	EST. QTY	UNIT PRICE	TOTAL COST
1	Permitting / Easement Acquisition (SLC County)	LS	1	$ 60,000.00	$ 60,000.00
2	Mobilization	LS	1	$ 20,000.00	$ 20,000.00
3	Drilling and Construction of 8" Production Well	LF	500	$ 720.00	$ 360,000.00
4	Well Development	HR	48	$ 200.00	$ 9,600.00
5	Well House Controls Building	SF	180	$ 650.00	$ 117,000.00
6	Equip Developed Well with Submersible Pump System	LS	1	$ 75,000.00	$ 75,000.00
7	Well Electrical / Controls and Integration	LS	1	$ 35,000.00	$ 35,000.00
8	6" Pump to Waste Piping, Valves and Appurtenances	LS	1	$ 10,000.00	$ 10,000.00
				Construction Total	**$ 686,600.00**
				Contingency (15%)	**$ 102,990.00**
				PROJECT TOTAL	**$ 789,590.00**

*Assumed native backfill and road base can be salvaged and reused

Number of Months to Completion		21
Construction and materials inflation Interest Rate		5%
Financing Interest Rate		0.04
Number of Years Financed		25
Current Cost	$	789,590.00
Construction Year Cost (12/31/2020)	$	859,969.23
Estimated Total Project Cost (including Financing)	$	(1,361,770.32)

Mountain Regional Water Special Service District
Lost Canyon Pump Station Capacity Upgrade
Engineer's Opinion of Probable Costs
6/6/2019
Option 1B - Dual Surface Mount Vertical Turbine in Series

ITEM NO.	ITEM	UNIT	EST. QTY	UNIT PRICE	TOTAL COST
1	Mobilization	LS	1	$ 10,000.00	$ 10,000.00
2	DDW Permitting	LS	1	$ 3,000.00	$ 3,000.00
3	Remove and Salvage Existing 500 gpm Pump	LS	1	$ 5,000.00	$ 5,000.00
4	Furnish and install Surface Mount Vertical Turbine Including Connect to Existing Suction and Discharge Piping, Valves, and Appurtenances	EA	2	$ 65,000.00	$ 130,000.00
5	Electrical / Controls and Integration	LS	1	$ 10,000.00	$ 10,000.00
				Construction Total	**$ 158,000.00**
				Contingency (15%)	**$ 23,700.00**
				PROJECT TOTAL	**$ 181,700.00**

Note: Installation of upgraded pump into existing can will not be capable of 1000 gpm as this drives velocities within the can above the Hydraulic Institutes reccomendation for internal and suction velocities.

Number of Months to Completion		21
Construction and materials inflation Interest Rate		5%
Financing Interest Rate		0.04
Number of Years Financed		25
Current Cost	$	181,700.00
Construction Year Cost (12/31/2020)	$	197,895.63
Estimated Total Project Cost (including Financing)	$	(313,369.81)

Mountain Regional Water Special Service District
Willow Draw Water Treatment
Engineer's Opinion of Probable Costs
6/6/2019

ITEM NO.	ITEM	UNIT	EST. QTY	UNIT PRICE	TOTAL COST
1	DDW Permitting	LS	1	$ 7,500.00	$ 7,500.00
2	Mobilization	LS	1	$ 10,000.00	$ 10,000.00
3	Furnish and Install PALL ARIA Membrane Filtration with 0.288 MGD Capacity	LS	1	$ 600,000.00	$ 600,000.00
4	Install and Configure Primary Settling Tanks, Sludge tanks, Backwash Water Tank, Miscelaneous Piping and Connections to Existing Facilities	LS	1	$ 125,000.00	$ 125,000.00
5	Electrical Controls and Integration	LS	1	$ 35,000.00	$ 35,000.00
				Construction Total	**$ 770,000.00**
				Contingency (15%)	**$ 115,500.00**
				PROJECT TOTAL	**$ 885,500.00**

*Assumed native backfill and road base can be salvaged and reused

Number of Months to Completion		21
Construction and materials inflation Interest Rate		5%
Financing Interest Rate		0.04
Number of Years Financed		25
Current Cost	$	885,500.00
Construction Year Cost (12/31/2020)	$	964,428.06
Estimated Total Project Cost (including Financing)	$	(1,527,181.98)

Mountain Regional Water Special Service District
Summit Park Reservoir Upgrade 500,000 Gallon
Engineer's Opinion of Probable Costs
4/17/2019

ITEM NO.	ITEM	UNIT	EST. QTY	UNIT PRICE	TOTAL COST
1	Permitting / Easement Acquisition (SLC County)	LS	1	$ 100,000.00	$ 100,000.00
2	Mobilization	LS	1	$ 20,000.00	$ 20,000.00
3	Demo Existing Steel Tank	LS	1	$ 15,000.00	$ 15,000.00
4	Construct New 500,000 Gallon Capacity Water Storage Tank	Gal	500,000	$ 0.85	$ 425,000.00
5	Precast Valve Vault	LS	1	$ 20,000.00	$ 20,000.00
6	Supply and Discharge Piping, Valving and Connections to Existing Pipelines	LS	1	$ 100,000.00	$ 100,000.00
7	Imported Bedding	CY	600	$ 10.00	$ 6,000.00
8	Disinfection & Hydrostatic Leak Test	LS	1	$ 5,500.00	$ 5,500.00
9	Site Stabilization and Revegetation	LS	1	$ 25,000.00	$ 25,000.00
				Construction Total	**$ 716,500.00**
				Contingency (15%)	**$ 107,475.00**
				PROJECT TOTAL	**$ 823,975.00**

*Assumed native backfill and road base can be salvaged and reused

Number of Months to Completion		21
Construction and materials inflation Interest Rate		5%
Financing Interest Rate		0.04
Number of Years Financed		25
Current Cost	$	823,975.00
Construction Year Cost (12/31/2020)	$	897,419.10
Estimated Total Project Cost (including Financing)	$	(1,421,072.59)

Mountain Regional Water Special Service District
South Point Distribution System Capacity Upgrades
Engineer's Opinion of Probable Costs
6/13/2019

ITEM NO.	ITEM	UNIT	EST. QTY	UNIT PRICE	TOTAL COST
1	Permitting	LS	1	$ 750.00	$ 750.00
2	Mobilization	LS	1	$ 3,000.00	$ 3,000.00
3	Increased Cost to Furnish and Install 16" Diameter PVC Water Main Including Fittings and Appurtenances	LF	5,000	$ 40.00	$ 200,000.00
4	Half of Total Import Select Bedding	CY	1,525	$ 8.00	$ 12,200.00
4	Flush & Hydrostatic Pressure Test	LS	1	$ 1,125.00	$ 1,125.00
5	Pavement Restoration @ Brown's Canyon Rd	SF	75	$ 4.50	$ 337.50
6	Site Stabilization and Revegetation	LS	1	$ 1,275.00	$ 1,275.00
7	Traffic Control	LS	1	$ 750.00	$ 750.00
				Construction Total	**$ 219,437.50**
				Contingency (15%)	**$ 32,915.63**
				PROJECT TOTAL	**$ 252,353.13**

*Assumed native backfill and road base can be salvaged and reused
*Assumed MRW will pay the difference in materials cost plus 15% of other associated costs

Number of Months to Completion	21
Construction and materials inflation Interest Rate	5%
Financing Interest Rate	0.04
Number of Years Financed	25

Current Cost	$ 252,353.13
Construction Year Cost (12/31/2020)	$ 274,846.34
Estimated Total Project Cost (including Financing)	$ (435,222.07)

Mountain Regional Water Special Service District
Willow Creek to Atkinson Connection
Engineer's Opinion of Probable Costs
3/15/2019

ITEM NO.	ITEM	UNIT	EST. QTY	UNIT PRICE	TOTAL COST
1	Permitting (PCMC & Stream Alterations)	LS	1	$ 12,000.00	$ 12,000.00
2	Mobilization	LS	1	$ 10,000.00	$ 10,000.00
3	Furnish and Install 8" Diameter PVC Water Main Including Fittings and Appurtenances	LF	1,050	$ 60.00	$ 63,000.00
4	Imported Bedding	CY	550	$ 8.00	$ 4,400.00
5	Locate and connect to Old Ranch Discharge Pipeline	LS	1	$ 2,500.00	$ 2,500.00
6	Locate and connect to Low Pressure Side of Rec PRV		1	$ 2,500.00	$ 2,500.00
7	Directional Drill of Stream	LF	40	$ 150.00	$ 6,000.00
8	Remove and Replace Fencing at Rec Dog Park	LS	1	$ 1,500.00	$ 1,500.00
9	Pavement Restoration	SF	150	$ 4.50	$ 675.00
10	Remove and Replace Curb & Gutter	LS	1	$ 1,000.00	$ 1,000.00
11	Site Stabilization and Revegetation	LS	1	$ 3,500.00	$ 3,500.00
12	Tree and Landscape Restoration at Rec	LS	1	$ 7,500.00	$ 7,500.00
13	Flush & Hydrostatic Pressure Test	LS	1	$ 2,500.00	$ 2,500.00
14	Traffic Control Signage	LS	1	$ 2,500.00	$ 2,500.00
				Construction Total	**$ 119,575.00**
				Contingency (15%)	**$ 17,936.25**
				PROJECT TOTAL	**$ 137,511.25**

*Assumed native backfill and road base can be salvaged and reused

Number of Months to Completion	21
Construction and materials inflation Interest Rate	5%
Financing Interest Rate	0.04
Number of Years Financed	25

Current Cost	$	137,511.25
Construction Year Cost (12/31/2020)	$	149,768.16
Estimated Total Project Cost (including Financing)	$	(237,159.46)

Mountain Regional Water Special Service District
Old Ranch Suction Side Surge Tank
Engineer's Opinion of Probable Costs
6/6/2019

ITEM NO.	ITEM	UNIT	EST. QTY	UNIT PRICE	TOTAL COST
1	DDW Permitting	LS	1	$ 5,000.00	$ 5,000.00
2	Mobilization	LS	1	$ 10,000.00	$ 10,000.00
3	Demolish and Dispose of Existing Partition Wall Within Booster Pump Building	LS	1	$ 1,200.00	$ 1,200.00
4	Furnish and Install Tank Mechanical Including Rerouting of Existing Piping and Connections to New Surge Arrestor Tank	LS	1	$ 30,000.00	$ 30,000.00
5	Furnish and Install 750 Gallon Bladder Style Surge Arrestor Tank Including Valves, Fittings, and Appurtenances	EA	1	$ 100,000.00	$ 100,000.00
6	Electrical and SCADA Controls	LS	1	$ 10,000.00	$ 10,000.00
				Construction Total	**$ 156,200.00**
				Contingency (15%)	**$ 23,430.00**
				PROJECT TOTAL	**$ 179,630.00**

Number of Months to Completion	21
Construction and materials inflation Interest Rate	5%
Financing Interest Rate	0.04
Number of Years Financed	25

Current Cost	$ 179,630.00
Construction Year Cost (12/31/2020)	$ 195,641.12
Estimated Total Project Cost (including Financing)	$ (309,799.77)

Mountain Regional Water Special Service District
Glenwild Pump Station Upgrade
Engineer's Opinion of Probable Costs
3/15/2019

ITEM NO.	ITEM	UNIT	EST. QTY	UNIT PRICE	TOTAL COST
1	Permitting	LS	1	$ 1,500.00	$ 1,500.00
2	Mobilization	LS	1	$ 5,000.00	$ 5,000.00
3	Furnish and Install Grundfos CR90 2-1 Pumps (450 gpm)	EA	2	$ 30,000.00	$ 60,000.00
4	Furnish and Install New Suction and Discharge Headers and Valving	LS	1	$ 13,500.00	$ 13,500.00
5	General Electrical, New Soft Starts & Misc. Electrical	LS	1	$ 15,000.00	$ 15,000.00
6	Upgrade EC&I including PLC Panel Upgrades	LS	1	$ 20,000.00	$ 20,000.00
				Construction Total	**$ 115,000.00**
				Contingency (15%)	**$ 17,250.00**
				PROJECT TOTAL	**$ 132,250.00**

Number of Months to Completion		21
Construction and materials inflation Interest Rate		5%
Financing Interest Rate		0.04
Number of Years Financed		25
Current Cost	$	132,250.00
Construction Year Cost (12/31/2020)	$	144,037.96
Estimated Total Project Cost (including Financing)	$	(228,085.62)

Mountain Regional Water Special Service District
Redhawk Pump Station Upgrade
Engineer's Opinion of Probable Costs
4/17/2019

ITEM NO.	ITEM	UNIT	EST. QTY	UNIT PRICE	TOTAL COST
1	Permitting	LS	1	$ 1,500.00	$ 1,500.00
2	Mobilization	LS	1	$ 5,000.00	$ 5,000.00
3	Furnish and Install Grundfos Booster Pumps (150 gpm)	EA	2	$ 25,000.00	$ 50,000.00
4	Furnish and Install New Suction and Discharge Headers and Valving	LS	1	$ 13,500.00	$ 13,500.00
5	General Electrical, New Soft Starts & Misc. Electrical	LS	1	$ 15,000.00	$ 15,000.00
6	Upgrade EC&I including PLC Panel Upgrades	LS	1	$ 20,000.00	$ 20,000.00
				Construction Total	**$ 105,000.00**
				Contingency (15%)	**$ 15,750.00**
				PROJECT TOTAL	**$ 120,750.00**

*Assumed native backfill and road base can be salvaged and reused

Number of Months to Completion	21
Construction and materials inflation Interest Rate	5%
Financing Interest Rate	0.04
Number of Years Financed	25

Current Cost	$ 120,750.00
Construction Year Cost (12/31/2020)	$ 131,512.92
Estimated Total Project Cost (including Financing)	$ (208,252.09)

Mountain Regional Water Special Service District
Silver Creek Estates Pipeline Extension (Chris' Loop)
Engineer's Opinion of Probable Costs
4/17/2019

ITEM NO.	ITEM	UNIT	EST. QTY	UNIT PRICE	TOTAL COST
1	Permitting (UDOT Crossing)	LS	1	$ 15,000.00	$ 15,000.00
2	Mobilization	LS	1	$ 20,000.00	$ 20,000.00
3	Furnish and Install 12" Diameter PVC Water Main Including Fittings and Appurtenances	LF	6,000	$ 80.00	$ 480,000.00
4	Imported Bedding	CY	3,100	$ 10.00	$ 31,000.00
5	Directional Drill Interstate 80	LF	350	$ 150.00	$ 52,500.00
6	Pavement Restoration	SF	650	$ 4.50	$ 2,925.00
7	Flush & Hydrostatic Pressure Test	LS	1	$ 3,500.00	$ 3,500.00
8	Site Stabilization and Revegetation	LS	1	$ 7,500.00	$ 7,500.00
9	Traffic Control	LS	1	$ 10,000.00	$ 10,000.00
				Construction Total	**$ 622,425.00**
				Contingency (15%)	**$ 93,363.75**
				PROJECT TOTAL	**$ 715,788.75**

*Assumed native backfill and road base can be salvaged and reused

Number of Months to Completion	21
Construction and materials inflation Interest Rate	5%
Financing Interest Rate	0.04
Number of Years Financed	25

Current Cost	$	715,788.75
Construction Year Cost (12/31/2020)	$	779,589.79
Estimated Total Project Cost (including Financing)	$	(1,234,488.63)