

DRINKING WATER SYSTEM MASTER PLAN

September 2017



BEAR RIVER WATER CONSERVANCY DISTRICT DRINKING WATER SYSTEM MASTER PLAN



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TABLE	OF	CON	TENTS
	<u> </u>		

TABLE OF CONTENTS	i
ACKNOWLEDGMENTS	
PROJECT TEAM	iv
GLOSSARY OF TECHNICAL TERMS	vi
ABBREVIATIONS	
Executive Summary	viii
CHAPTER 1 - PURPOSE AND SCOPE	1-1
MASTER PLANNING PURPOSE	1-1
EXISTING BRWCD SERVICE AREAS	1-2
MASTER PLAN SCOPE OF WORK	1-3
PUBLIC PROCESS	
CHAPTER 2 - BOX ELDER COUNTY POPULATION PROJECTIONS	2-1
PLANNING PERIOD	2-1
GROWTH PROJECTIONS	2-1
Average Historical Growth Projection	2-1
State of Utah Projections	2-1
Potential for More Rapid Growth	
Rapid Growth Scenario	
COMPARISON OF POPULATION PROJECTIONS	
CHAPTER 3 - PUBLIC PROCESS (BY THE LANGDON GROUP)	3-1
INTRODUCTION	
STAKEHOLDERS INPUT	
Stakeholders Interviewed	
Stakeholder Kick-off Meeting	
Key Stakeholder Committee Report-Back Meeting	
Information Gathered from the Stakeholder Interviews	
WATER SUPPLY AGENCY INTERVIEWS	
Goals of Water Agency Interviews	
Summary of Information Gathered	3-5
CHAPTER 4 - WATER SUPPLY AND DEMAND	
AVAILABLE DRINKING WATER SUPPLIES	
WATER SUPPLY AND DEMAND ANALYSES	
Calculations Methodology	
Data Sources	
Data Precision	
Drought Effects on Water Supply	
Limiting Factor	
Dependable Peak Day Supply	
WATER SHORTAGE HORIZON	
Build-Out Projections	4-8
CHAPTER 5 - BEAR RIVER DEVELOPMENT (BY BOWEN COLLINS & ASSO	OCIATES) 5-1
INTRODUCTION	

BEAR RIVER PROJECT BACKGROUND	-2
CHAPTER 6 - CONSERVATION	-1 -1
CHAPTER 7 - EXTENDING EXISTING GROUNDWATER SUPPLIES	-1
CHAPTER 8 - BRWCD SERVICE AREA MASTER PLANNING 8 INTRODUCTION 8 Projects to be Implemented Within 0 - 10 Years 8 Projects to be Implemented Within 10 – 20 Years 8 Projects to be Implemented Beyond 20 Years 8 PRECISION OF COST ESTIMATES 8 SYSTEM IMPROVEMENT PROJECTS 8	-1 -1 -1 -1
REFERENCESR	1

APPENDICES

A Stakeholders List

- В
- Water Supply Analyses Cost Estimate Calculations С

LIST OF TABLES

NO.	TITLE	PAGE
4-1	Water Suppliers' Future Service Capacity	4-4
4-2	BRWCD Service Areas Future Service Capacity	4-5
4-3	Build-Out Projections	4-8
5-1	BRWCD Facilities Required at Full Development of BRP	5-3
6-1	Incorporated Cities and Towns Residential Per Capita Water Use	6-1
6-2	Unincorporated Areas Residential Per Capita Water Use	6-2
6-3	BRWCD Service Areas Per Capita Water Use	6-2
8-1	Master Planned Projects 0 – 10 Year Time Frame	8-3
8-2	Master Planned Projects 10 – 20 Year Time Frame	8-4
8-3	Master Planned Projects Beyond 20 Year Time Frame	8-5

LIST OF FIGURES

NO. TITLE

2-1	County Population (U.S. Census)	2-3
2-2	Projected Decade for Rapid Growth	After 2-4
2-3	Box Elder County Population Growth Estimates	2-5
3-1	Stakeholder Kickoff Meeting Input – Water Priorities	3-3
3-2	Stakeholder Kickoff Meeting Input – Water Improvement Strategies	3-3
3-3	Stakeholder Water Planning Preferences	3-4
4-1	Water Shortage Horizon 2020	After 4-6
4-2	Water Shortage Horizon 2020	After 4-6
4-3	Water Shortage Horizon 2020	After 4-6
4-4	Water Shortage Horizon 2020	After 4-6
4-5	Water Shortage Horizon 2020	After 4-6
4-6	Supply vs. Demand – Peak Day Flow	4-6
4-7	Supply vs. Demand – Ave Annual Volume	4-7
5-1	BRWCD Facilities for the Bear River Project at Full Development	After 5-1
8-1	Master Planned Projects – Northern Area	After 8-1
8-2	Master Planned Projects – Southern Area	After 8-1

PAGE

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Bear River Water Conservancy District

Voneene Jorgensen – General Manager

BRWCD Board

Roger Fridal – Chairman David Forsgren – Vice Chairman Charles Holmgren – Financial Chairman Richard Day – Trustee Tyler Vincent – Trustee Jay Carter – Trustee Jeff Scott – Trustee Russell Howe – Trustee Neil Capener – Trustee Jay Capener – Trustee Mark Larson - Trustee

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Bob Fotheringham

Utah Drinking Water Board

Utah State Division of Drinking Water Michael Grange

Utah State Division of Water Resources Todd Adams Marissa Egbert

PROJECT TEAM

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Hansen, Allen & Luce, Inc. Bill Bigelow – Project Manager/Engineer Lance Nielsen – Project Engineer Ryan Christensen – Staff Engineer

The Langdon Group Josh King – Public Process (Chapter 3)

Bowen Collins & Associates

Thayne Clark – Bear River Development (Chapter 5)

GLOSSARY OF TECHNICAL TERMS

<u>Average Daily Flow</u>: The average yearly demand volume expressed in a flow rate.

<u>Average Yearly Demand</u>: The volume of water used during an entire year.

Build-out: When the development density reaches maximum allowed by planned development.

<u>Demand</u>: Required water flow rate or volume.

<u>Distribution System</u>: The network of pipes, valves and appurtenances contained within a water system.

<u>Drinking Water</u>: Water of sufficient quality for human consumption. Also referred to as Culinary or Potable water.

<u>Dynamic Pressure</u>: The pressure exerted by water within the pipelines and other water system appurtenances when water is flowing through the system.

<u>Equivalent Residential Connection</u>: A measure used in comparing water demand from non-residential connections to residential connections.

<u>Fire Flow Requirements</u>: The rate of water delivery required to extinguish a particular fire. Usually it is given in rate of flow (gallons per minute) for a specific period of time (hours).

<u>Head</u>: A measure of the pressure in a distribution system that is exerted by the water. Head represents the height of the free water surface (or pressure reduction valve setting) above any point in the hydraulic system.

<u>Head Loss</u>: The amount of pressure lost in a distribution system under dynamic conditions due to the wall roughness and other physical characteristics of pipes in the system.

<u>Peak Day</u>: The day(s) of the year in which a maximum amount of water is used in a 24-hour period.

<u>Peak Day Demand</u>: The average daily flow required to meet the needs imposed on a water system during the peak day(s) of the year.

<u>Peak Instantaneous Demand</u>: The flow required to meet the needs imposed on a water system during maximum flow on a peak day.

<u>Pressure Reducing Valve (PRV)</u>: A valve used to reduce excessive pressure in a water distribution system.

<u>Pressure Zone</u>: The area within a distribution system in which water pressure is maintained within specified limits.

<u>Service Area</u>: Typically, the area within the boundaries of the entity or entities that participate in the ownership, planning, design, construction, operation and maintenance of a water system.

Bear River Water Conservancy District

<u>Static Pressure</u>: The pressure exerted by water within the pipelines and other water system appurtenances when water is not flowing through the system, i.e., during periods of little or no water use.

<u>Storage Reservoir</u>: A facility used to store, contain and protect drinking water until it is needed by the customers of a water system. Also referred to as a Storage Tank.

<u>Transmission Pipeline</u>: A pipeline that transfers water from a source to a reservoir or from a reservoir to a distribution system.

Water Conservation: Planned management of water to prevent waste.

ABBREVIATIONS

ac	acre
ac-ft	acre-feet
DDW	The State of Utah Division of Drinking Water
BRWCD	Bear River Water Conservancy District
ERC	Equivalent Residential Connection
GIS	Geographic Information System
gpd	Gallons per Day
gpd/conn	Gallons per Day per Connection
gpa/conn gpm	Gallons per Day per Connection Gallons per Minute
gpm	Gallons per Minute
gpm HAL	Gallons per Minute Hansen, Allen & Luce, Inc.
gpm HAL MG	Gallons per Minute Hansen, Allen & Luce, Inc. Million Gallons

The Bear River Water Conservancy District (BRWCD) has authority to help plan, provide and support water development in Box Elder County. BRWCD now serves 5 unincorporated areas in eastern Box Elder County and has wholesale water service connections to 14 public water supply agencies.

BRWCD's previous 2005 Master Plan recommendations have essentially all been accomplished, so a new Master Plan is needed to provide guidance for the next several decades. Some of the current major questions for Box Elder County that are examined in this master plan are:

- How long will current water supplies last as the County grows?
- How can BRWCD help public water suppliers meet their growing needs in the future?
- How can Bear River Development water help future growth in the County?
- How can BRWCD support and encourage conservation?

As the first phase in the master planning work, BRWCD conducted a wide-ranging outreach effort to individuals and agencies that have an interest in the growth of Box Elder County and the supply of water to its residents. Interviews and public meetings were held with these stakeholders where important questions were asked about water supply and demand in the County. The resulting consensus of water development priorities included the following top three priorities:

- Securing Water Supplies for the Future
- Conserving Water
- Bear River Water Development

Water demand projections were developed based on population projections from the Kem C. Gardner Policy Institute (GPI, 2017), the average historical growth rate of the County, and a projected rapid growth scenario in the case that development pressure from the Wasatch Front extends into the county. Planning for a rapid growth scenario will allow BRWCD to be prepared for rapid growth in case it occurs, but still have the flexibility to delay plans if growth rates are slower.

BRWCD invited all of the water suppliers in the County to share their water system information with BRWCD in order to develop a future water needs projection. Analyses included water supply and water demand for each water supplier, with evaluation of how many new residential connections may be served with existing water supplies. These analyses show that the majority of communities in the County will need additional water supplies between the year 2045 and 2055.

The State of Utah has been studying future development of storage water on the Bear River since the Utah State Legislature adopted the 1990 Bear River Development Act. Box Elder County has actively participated in planning efforts sponsored by the State along with Cache, Weber, Davis and Salt Lake Counties. Recent Bear River Development plans by the State

Division of Water Resources were used to prepare a conceptual level plan for future sizes and locations of water treatment plants and conveyance pipelines for future treatment and use of Bear River Water within eastern Box Elder County.

Suggestions were prepared to help the County make the best possible use of existing groundwater supplies, including conservation strategies and groundwater supplies augmentation through:

- Renovation of Wells and Springs
- Water Treatment of Poor Quality Groundwater
- Blending Poor Quality and High Quality Groundwater
- Pressurized Irrigation Water Systems
- Aquifer Storage and Recovery
- Wastewater Reuse

Lastly, facilities were master planned for the 5 areas that are now served by BRWCD to resolve existing deficiencies and to provide additional capacity to serve existing and new growth. Master planned facilities were developed with the goal to provide water for future demands while minimizing negative impacts on the environment, wildlife, and individual property owners.

MASTER PLANNING PURPOSE

The Bear River Water Conservancy District (BRWCD) was formed in 1988 to assist Box Elder County in providing a broad range of services related to improving water supplies for the County. BRWCD's stated goals are to:

- Conserve and protect water and water rights.
- Develop and provide water for municipal, industrial and agricultural use.
- Use these resources to best serve the residents of Box Elder County.

In 1994, BRWCD constructed their first public drinking water system in the Harper Ward area, which is an unincorporated area located along State Highway 38 between Brigham City and Honeyville. Prior to this project there was no public drinking water system in the area. In 1995, BRWCD constructed another public drinking water system near Tremonton City. The main purpose of this system was to provide wholesale water supplies to Tremonton City and several other water suppliers in the vicinity of Tremonton City.

BRWCD's first master plan was completed in 2005. The 2005 Master plan has provided much needed direction for expanding BRWCD's services in areas of critical need in eastern Box Elder County. All of the major projects identified in the 2005 Master Plan have been constructed and are now in service. Most recently, BRWCD completed a public drinking water system in the Collinston area.

New vision for the future is now needed to guide BRWCD's priorities and decision-making processes for the next several decades. BRWCD is concerned about several issues that will increasingly affect the public water supply in the eastern portion of the County, such as:

- How long will current water supplies last as the County grows?
- How can BRWCD help public water suppliers meet their growing needs in the future?
- How can Bear River Development water help future growth in the County?

WATER SUPPLY IN EASTERN BOX ELDER COUNTY

Public drinking water supplies are provided exclusively by groundwater sources in Box Elder County, including many springs and wells.

The Bear River flows through eastern Box Elder County, but this surface water source is not currently being used for drinking water supplies. The Bear River is the source for most of the irrigation that is being done in the eastern portion of the County via the Bear River Canal Company (BRCC). Several communities including Brigham City, Perry, Willard and South Willard receive irrigation water supplies from Pineview Reservoir east of Ogden. The Bear River and Pineview Reservoir are essentially fully appropriated and are, in any event, not currently available for municipal and industrial uses. However, both Pineview and Bear River Canal Company water are available to be used for pressurized irrigation systems, especially as agriculture lands are turned into residential developments.

In 1990 the State of Utah Legislature passed the Bear River Act to formally adopt a plan to capture and develop spring runoff water on the Bear River. The Act proposed that a new surface storage reservoir be constructed on the Bear River's course through Cache and Box Elder Counties. The Act further estimated the quantities of water that would be available to northern Utah counties as follows:

Cache County	60,000 Acre Feet
Box Elder County	60,000 Acre Feet
Davis & Weber Counties	50,000 Acre Feet
Salt Lake County	50,000 Acre Feet

Over the past decade, the State has completed numerous reservoir site investigations in Cache and Box Elder Counties. Pipeline corridor studies have been conducted in Box Elder County. These studies have resulted in a short list of reservoir sites and corridor alignments that appear to be feasible.

EXISTING BRWCD SERVICE AREAS

BRWCD currently serves retail and wholesale customers in 5 services areas in Box Elder County:

- Beaver Dam
- Bothwell
- Collinston
- Harper-Ward
- South Willard

These BRWCD service areas are briefly described in the following paragraphs:

Beaver Dam Service Area – This water system is located in an unincorporated area in the northeast quadrant of Box Elder County. The service area currently provides water to 27 residential customers. The delivery system includes three spring sources, an arsenic-removal water treatment plant, a storage reservoir, and an 8-inch transmission pipeline.

Bothwell Municipal and Industrial (M&I) Service Area - This water system is located in unincorporated areas both west and north of Tremonton City. This service area currently provides water to 46 residential connections and 6 wholesale connections to water supply agencies in the vicinity:

- Tremonton City
- Thatcher Penrose Service District
- Bothwell Cemetery and Water Company
- UKON Water Company
- Riverside North Garland Water Company
- S&K Water Company

The Bothwell M&I Service area is supplied by 2 deep wells and includes a 0.5 MG storage reservoir and 12-inch, 10-inch and 8-inch transmission pipelines.

Collinston Service Area - This water system is located in unincorporated areas north of Deweyville Town along State Highway 38. This service area currently provides water to 25 residential connections and 30 inactive connections. The system also has 3 wholesale connections to water supply agencies in the vicinity:

- UKON Water Company
- Tremonton City
- Cedar Ridge Subdivision

The Collinston Service area is currently supplied by a surplus water sales contract with Deweyville Town and includes two 0.5 MG storage reservoirs, two booster stations, and 12-inch and 8-inch transmission pipelines.

Harper Ward Service Area - This water system is located in unincorporated areas between Brigham City on the south and Honeyville on the north along State Highway 38. This service area currently provides water to 99 residential connections and has 3 wholesale connections to water supply agencies in the vicinity:

- Honeyville City
- Corinne City
- West Corinne Water Company

The Harper Ward Service area is currently supplied by a surplus water sales contract with Brigham City, and includes 10-inch and 8-inch transmission pipelines.

South Willard Service Area - This water system is located in unincorporated areas south of Willard City along State Highway 89. This service area currently provides water to an LDS Church and has 3 wholesale connections to water supply agencies in the vicinity:

- South Willard Water Company
- Hot Springs Mobile Home Park
- Coleman Mobile Home Park

The South Willard Service area is supplied by 1 deep well and includes a 1.0 MG storage reservoir and 16-inch, 12-inch and 8-inch transmission pipelines.

One of the purposes of this Master Plan is to analyze these service areas and to plan future new facilities to serve BRWCD's growing water service agencies.

MASTER PLAN SCOPE OF WORK

Master planning activities included the following major categories:

Public Process (By The Langdon Group)

At the beginning of the master planning activities, BRWCD wanted to first assess perceptions towards BRWCD by other government agencies, water suppliers and the public. BRWCD regards many of these agencies as important stakeholders in their mission. The master plan scope included plans to conduct stakeholder meetings to invite input and opinions regarding

which water supply challenges are most important, and how to meet these water supply challenges.

BRWCD planned significant public outreach with a wide cross section of individuals representing many different government agencies that are interested in water supply issues in Box Elder County, including local, State and Federal agencies.

In addition to the outreach to government agencies, BRWCD planned meetings with the public drinking water suppliers in the County to evaluate their current and future water supply needs and to assess whether they will need to request assistance from BRWCD in the future.

Population Projections – The key to future water supply forecasting is population growth. BRWCD planned a review of current population and future growth projections in order to quantify water demands both now and in the future for the County.

Evaluate Existing Water Resources & Demands – BRWCD planned technical analyses of the existing water supply and demand for all of the major public water agencies in the County. A forecast of the current and future water needs throughout the County would result from the outcome of the analyses was planned to prepare. In addition, BRWCD planned technical analyses for the retail and wholesale service areas served by BRWCD.

Water Shortage Horizon – This analysis was planned to predict when each water supply agency in the County would need additional water supplies in order to continue to support new growth within their service areas.

Bear River Development Water Supply (By Bowen Collins & Associates) - The State of Utah has been studying water development of more water on the Bear River for several decades. In the past 15 years, the State has invested significant efforts on finding potential dam sites for water storage as well as possible transmission routes for Bear River Development water conveyance pipelines. The master plan scope of work included analyses to determine:

- Where Bear River water would likely be needed in the County
- When the Bear River Development water would be needed
- Locations for future water treatment plants, storage and transmission pipelines where Bear River Development water could be treated, stored and distributed for use within the County

Conservation – The role of conservation is an important factor in future water planning for the County and for the entire State. BRWCD planned to evaluate current per capita water use in the County and make comparisons with the State of Utah's conservation goals. The scope of work included a list of conservation strategies and incentives to help the County with efforts to encourage future conservation by water users.

Extending Existing Groundwater Supplies - Currently the County is 100% reliant on groundwater supplies for public drinking water. Some communities are already almost fully utilizing their groundwater sources. The master plan scope of work included study to discuss idea to help these communities extend and optimize existing groundwater sources to allow more future growth.

Bear River Water Conservancy District

Master Planning BRWCD Facilities – In some of the areas now served by BRWCD, the existing capacity is not sufficient to meet the demands. New projects are needed to serve these areas. In some areas, BRWCD facilities need extensions to serve new areas that have requested BRWCD water service. One of the major goals of this master plan is to plan new and upsized BRWCD facilities in these areas.

CHAPTER 2 - BOX ELDER COUNTY POPULATION

PROJECTIONS

PLANNING PERIOD

BRWCD has identified two planning periods that correspond with two major goals of this Master Plan. The first goal is to identify capital facilities necessary for meeting BRWCD's potential water demands within the next 20 years. The second goal is to forecast long range water supply needs through the year 2060 so that BRWCD can be begin preparing to meet these needs. BRWCD also needs to determine when they may expect to need Bear River Development project water. The determination of anticipated water demands is dependent upon the projected population growth throughout the planning periods.

GROWTH PROJECTIONS

Average Historical Growth Projection

Based on U.S. Census records, Box Elder County has grown at an average rate of approximately 1.7% per year from about 1950 through 2010. With a 2010 population of 49,975, continuation of this growth rate through the planning period would result in a 2060 population of approximately 109,600.

State of Utah Projections

In 2012, the Utah Governor's Office of Management and Budget (GOMB) prepared population projections through the year 2060. GOMB assumed a rural growth rate of 0.9% per year for Box Elder County, resulting in a 2060 population of 77,030. This growth rate is just over half of the average historical growth rate since the year 1950.

GOMB has contracted with the University of Utah's Kem C. Gardner Policy Institute (GPI) to update the State's population projections. 50-year statewide and county projections have recently been released. Data from GPI indicates a growth rate from 1.4% to 1.5% per year through the year 2021 and then dropping to 1% or below by the year 2026 and stabilizing at about 0.7% by 2047. The 2060 population projected by GPI is 83,248.

Potential for More Rapid Growth

As part of this master plan, interviews were conducted with representatives of Box Elder County, municipalities, public water suppliers, and the Bear River Association of Governments (BRAG). Based on these interviews, there are indications that Box Elder County may be poised for more rapid growth than they have experienced over the past several years. The following statements represent the general opinions of the stakeholders regarding growth within Box Elder County.

- Municipality "getting weekly calls" for development and "construction is as fast as I've ever seen." Expects higher growth rate as a result.
- Another municipality has seen increased building permits and is receiving interest from "big developments" to come in.

- County planning and economic development are currently working on 5 to 6 large projects for new industries to move into the county. This would increase employment opportunities and draw more people into the county.
- Water suppliers have seen consistent growth and expect to see either sustained growth or increasing growth.

Because of Box Elder County's location relative to the larger population centers along the Wasatch Front, and because it is located along the primary transportation corridor leading to these areas, there is reasonable likelihood that development pressure could extend into Box Elder County within the next couple of decades. This is supported by the recent expansion of I-15 through Brigham City and by Utah Department of Transportation (UDOT) plans to extend the FrontRunner commuter rail to Brigham City.

Some communities are already seeing this development pressure affect them. For example, the number of connections to the Perry City water system has increased at an average rate of about 5% per year since 2000. Similarly, Tremonton water connections have increased by almost 3% per year since 2000.

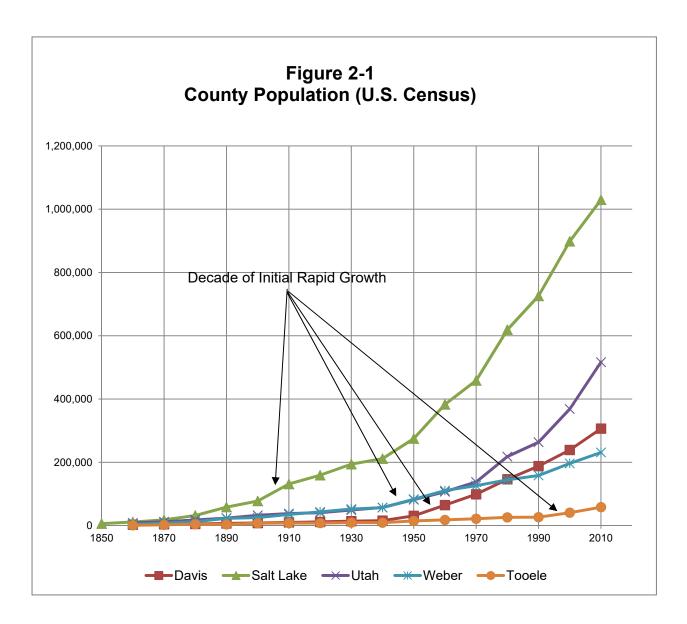
Rapid Growth Scenario

BRWCD's mission is to assist in providing future water supplies to Box Elder County communities where needed. Because development of additional water sources can take many years of planning, it is in BRWCD's best interests to plan their future water sources for a more rapid growth scenario so they are prepared to meet increased water demands. If actual growth doesn't keep pace with the rapid growth scenario, then the plans will already be in place and BRWCD can delay the plans as necessary.

Population growth patterns from the U.S. Census data were analyzed for five counties in Utah that have experienced rapid growth, including Salt Lake, Utah, Davis, Weber, and Tooele counties. Evaluation of the data revealed similar patterns for each of the counties. Figure 2-1 charts the population of these counties since 1850.

It can be seen from this chart that each of these counties initially had a relatively flat growth rate until experiencing a notable increase in growth. This was then followed by a period of sustained increased growth. The average growth rate experienced by these counties in the initial decade of increased growth was 6.1% per year with an average growth rate in the following 3 decades ranging from approximately 3% to 4.7% per year.

The population density of the counties in the decade before rapid growth ranged from 124 to 344 people per square mile with an average density of 204 people per square mile. The current density of the main Bear River Valley area of Box Elder County is just over 200 people per square mile. As population density increases, the value of land for development also increases. This induces owners of large parcels of land to subdivide and develop their land for commercial and residential uses, which in turn attracts people from neighboring urbanized areas seeking either more space or larger homes.



The following list summarizes the reasons that BRWCD believes that Box Elder County is likely to experience more rapid growth than historical growth rates and current projections.

- Population density in Box Elder County is about the same as Salt Lake, Utah, Davis, Weber, and Tooele counties were just prior to their experiencing rapid growth.
- Box Elder County is located adjacent to a rapidly growing county that has a much higher density resulting in development pressure (Population density of Weber County was about 1,400 people per square mile in 2010).
- Box Elder County is located along the major transportation route (I-15) connecting the urbanized areas of Weber, Davis, Salt Lake, and Utah counties.
- Recent expansion of I-15 to three lanes through Box Elder County has made the commute into the more urbanized areas quicker and more convenient.
- UDOT plans to extend the Front Runner commuter rail to Brigham City would provide additional convenience for commuting into the more urbanized areas.

- Some communities are already experiencing more rapid growth.
- Community planners and other stakeholders are seeing increased building permit requests.
- Multiple large industries are showing interest in locating in Box Elder County due to the availability of large parcels at a significantly lower cost relative to the more populated counties along the Wasatch Front. An example of this is the Proctor & Gamble plant that was constructed west of Bear River City within the last 10 years.

It was assumed that the maximum growth rate for a Box Elder County rapid growth scenario would be 3% per year. It was also assumed that rapid growth would progress in stages instead of occurring throughout the County in the same decade as described below and as shown on Figure 2-2.

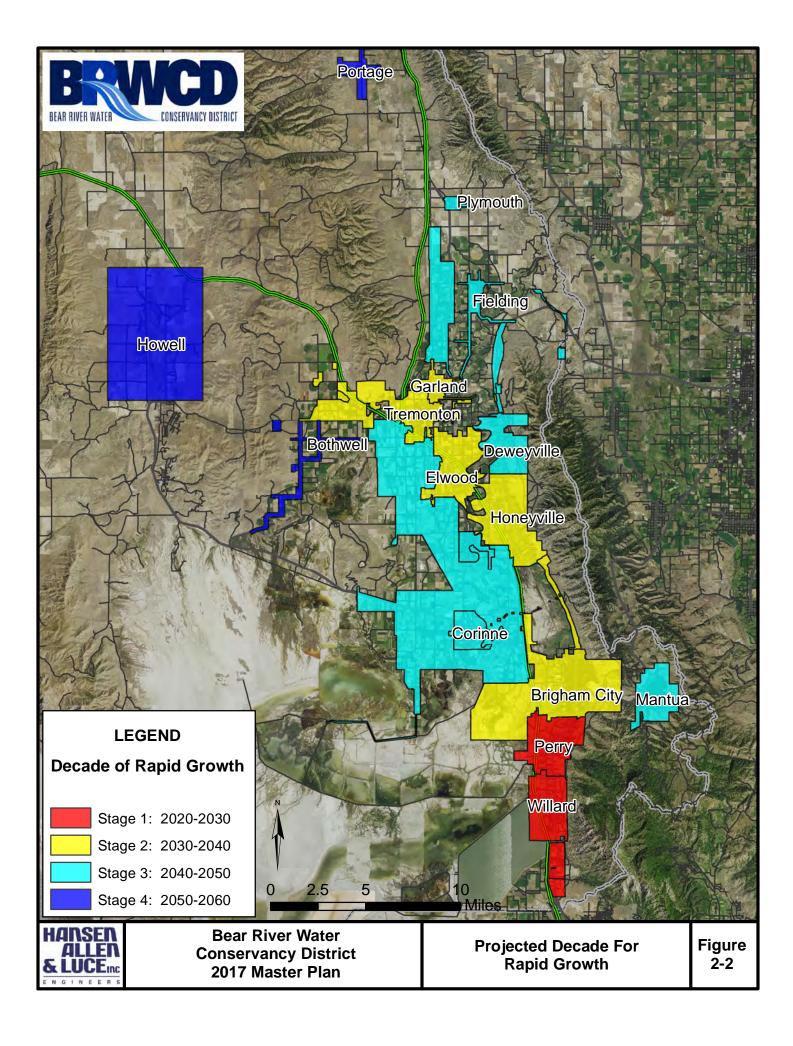
- 1. Stage 1 (2020-2030): 3% per year growth begins in communities closest to the Wasatch Front. Includes Perry, Willard, and South Willard.
- 2. Stage 2 (2030-2040): 3% per year growth begins in communities adjacent to I-15. Includes Brigham City, Honeyville, Elwood, Tremonton, Garland, and the retail area served by BRWCD north of Bothwell.
- 3. Stage 3 (2040-2050): 3% per year growth begins in remaining portion of Bear River Valley and Mantua. Includes Mantua, Corinne, Bear River City, Deweyville, Riverside, North Garland, Fielding, and Plymouth.
- 4. Stage 4 (2050-2060): 3% per year growth begins in remainder of Box Elder County. Includes Bothwell, Thatcher, Howell, and Portage.

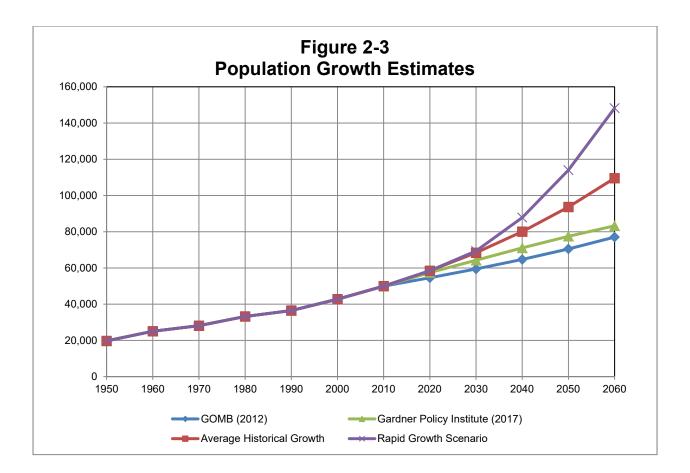
The projected 2060 population for Box Elder County using this staged rapid growth approach is approximately 148,000.

COMPARISON OF POPULATION PROJECTIONS

Figure 2-3 compares the population projections prepared by GOMB (2012) and Kem C. Gardner Policy Institute (2017) with the Average Historical Growth projection and the Rapid Growth Scenario.

BRWCD recognizes that there is a great deal of uncertainty with projecting population growth. There are numerous social, economic, political, and infrastructural factors that could influence growth one way or the other. While BRWCD acknowledges the work that went into the population projections developed by the State of Utah and the Kem C. Gardner Policy Institute, BRWCD also has the responsibility to be prepared to meet the potential water supply demands of a more rapid growth scenario. Therefore, the Rapid Growth Scenario was used for planning purposes to secure water supplies for Box Elder County.





INTRODUCTION

Water is a very important resource and plays an important role in social and physical needs. The water interests of stakeholders in the County play a major role in the design of a comprehensive water strategy. Water stakeholders include those representing agricultural, environmental, and municipal interests. BRWCD's master plan team implemented a strategic stakeholder involvement campaign with key stakeholders in the planning process.

BRWCD desired an engagement process for the 2015 Master Plan Update that was genuine, authentic and effective. The primary objective was to create a master plan that reflected the needs and interests of the community and key stakeholders through a process that built trust and identified community solutions to community problems. This strategy has helped regional water leaders feel ownership in the process of evaluating existing water resources and demands, determining future water demands, educating and building consensus, deciphering which management structure best meets the County's needs, and ultimately creating a plan for the future.

The strategy involved executing a situational assessment to develop an understanding of influential individuals and agencies (stakeholders) about BRWCD and their mission, developing and consulting with a steering committee, updates to BRWCD's Board and holding additional meetings with other entities for a comprehensive understanding of issues at hand.

A comprehensive list of stakeholders that have participated in the public process through interviews or attendance at planning meetings is given in Appendix A.

STAKEHOLDERS INPUT

One of the first steps of the master plan was to identify key planning stakeholders, meet with the stakeholders, and discover their perceptions of BRWCD and their suggestions for future BRWCD priorities. Stakeholders to be interviewed included individuals and organizations such as the following:

- Culinary water users and providers;
- Communities;
- Government Agencies;
- County; and
- Other key interest groups (agriculture, developers, etc.).

Once a list of key planning stakeholders was created, interviews were scheduled to enhance BRWCD's relationship with the stakeholders, facilitate efforts to obtain funding for the master plan, build social capital and trust and receive valuable input to BRWCD's master planning effort.

Stakeholders Interviewed

Representatives from a variety of water backgrounds and positions were interviewed, including the following individuals:

- Box Elder County, Scott Lyons, Mitch Zundel
- Dept. of Agriculture, LuAnne Adams
- NRCS, Dave Brown
- PacifiCorp, Claudia Conder, Conley Baldwin
- Weber Basin Water Conservancy District, Tage Flint, Mark Anderson, Scott Paxman
- Jordan Valley Water Conservancy District, Richard Bay
- Utah Department of Environmental Quality, Walt Baker
- Utah Division of Water Resources, Eric Millis, Todd Adams
- Utah Division of Drinking Water, Ken Bousfield
- Rep. Scott Sandal
- Rep. Pete Knudson
- Rep. Lee Perry
- Bear River Canal Company, President, Charles Holmgren
- Cache County, Bob Fotheringham (Water Manager)
- Bear River Association of Governments
- Bird Refuge, Bob Barrett

Stakeholder Kick-off Meeting

BRWCD also invited many of the key stakeholders and representatives from water supply agencies in the County to a master planning kick-off meeting. BRWCD wanted the stakeholders to be part of the process with the goal to effectively collaborate and coordinate with them to more fully understand their current and future water needs. Gathering this initial input and feedback was key to guiding the master plan development. Establishing the desire for and expectation of continued collaboration throughout the master planning process was also helpful.

Key Stakeholder Committee Report-Back Meeting

The key stakeholders that were involved in the Kick-off Meeting and that were interviewed were asked to participate in a Report-Back Meeting. The purpose of the Report-Back meeting was to provide key themes and insights gathered and receive input and guidance during the creation of the master plan and recommendations. The purpose of this meeting was to review synthesized data collected through the key interviews and meetings with water stakeholders. The key themes that came from the situational assessment were presented, and input was received from the group.

Information Gathered from the Stakeholder Interviews

The interviews and the meeting with the stakeholders provided valuable information about the key water issues, needs and concerns. A summary of the key points are given in Figure 3-1, Figure 3-2 and Figure 3-3.

The data presented in Figure 3-1 makes it clear that the top three priorities for water in Box Elder County include securing water supply for the future, water conservation and Bear River Development. Figure 3-2 data shows again that water conservation and Bear River Development are top priorities. The data collected and presented in Figure 3-3 show that a regional approach to water supply planning is most highly valued.

Bear River Water Conservancy District

Figure 3-1 Stakeholder Kickoff Meeting Input

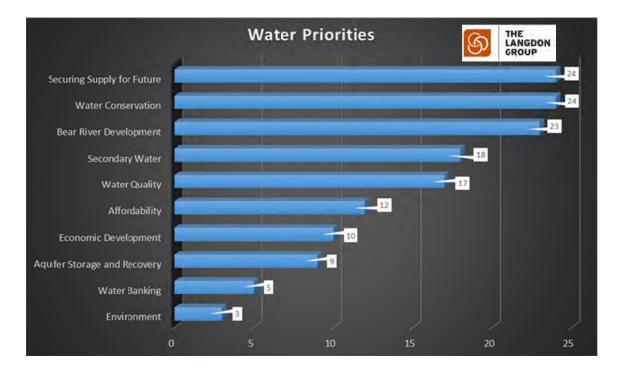


Figure 3-2 Stakeholder Kickoff Meeting Input

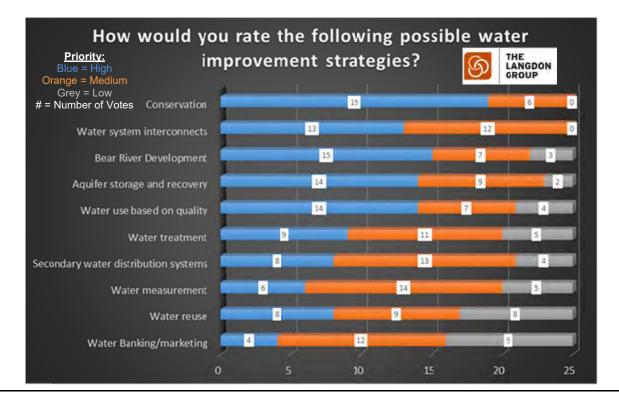


Figure 3-3 Stakeholder Water Planning Preferences



WATER SUPPLY AGENCY INTERVIEWS

The next step of the master plan was to conduct interviews with the water supply agencies in Box Elder County. The interviews were planned to emphasize effective communication and collaboration between BRWCD and the water agencies. A facilitator was present at the interviews as well as BRWCD's General Manager and an engineer to help gather technical information.

Goals of Water Agency Interviews

The goals of the interviews with the water agencies were to:

- Gather information about each of the water systems in the area;
- Identify their water concerns and goals
- Understand their water development priorities
- Understand their views about how to plan water supplies for the future
- Understand positions with regards to development of the Bear River
- Hear their views of potential water management options
- Identify opportunities, needs, and communication strategies
- Build trust through an open and inclusive process

Summary of Information Gathered

The interviews with the stakeholders provided valuable information about the key water issues, needs and concerns.

Stakeholder Input Implementation

Based on responses from stakeholders, the preferred model for meeting water demands in Box Elder County is a community to regional water supply system with priorities placed on water conservation and securing sufficient water supply for future demands. BRWCD's mission statement focuses on conserving and protecting water and water rights in Box Elder County by developing and providing water for municipal, industrial, and agricultural uses to serve the residents of the County. The goal of this master plan is to identify when individual communities will need additional water supply and how much they will need and then develop plans for BRWCD to help these communities meet their needs as a regional water supplier.

The scope of the master plan is tailored to address stakeholder objectives by addressing how the County can use their allotment from the Bear River Development project, identifying the County's water conservation goal, planning for compliance with the State's conservation goal, and planning how the District can effectively meet water supply needs in the county as a regional water supplier. Additionally, during interviews with individual stakeholders, BRWCD identified specific concerns and supply needs for local water systems. These needs and concerns have been incorporated into the development of master planned projects.

INTRODUCTION

As the population within Box Elder County continues to grow, additional water supplies will be needed to meet the increasing water demand. A necessary first step in identifying how to supply water to the growing population of Box Elder County is to identify where water will be needed in the future.

In the 2005 Master Plan, BRWCD met with the water supply agencies in the County to get a sense of which water supply agencies needed future water service from BRWCD. From that information, the Master Plan was developed and several needed water supply projects were identified.

A similar approach was taken with this Master Plan. An outreach was made to the water suppliers in the County, including a data review of each water supplier's water supply and demands. This data was then analyzed to help identify where future water supply deficiencies would be located within the County.

This chapter documents the outreach to the public water suppliers in the County, describes the methodology for evaluating the water supply and demand analyses, and the results of the analyses.

OUTREACH INTERVIEWS

Interviews were held with the public drinking water suppliers in Box Elder County in May, June and July 2016. Topics of discussion included descriptions of the water suppliers' water system facilities, current challenges or problems, future water supply plans and possible BRWCD assistance in the future.

AVAILABLE DRINKING WATER SUPPLIES

Box Elder County is currently completely dependent upon groundwater for drinking water sources. According to USGS Technical Publication No. 44 (Bjorklund & McGreevy 1974), recharge to the groundwater system in the Bear River Valley area of Box Elder County is from precipitation falling within the mountains and foothills surrounding the valley and infiltration from canals, the Bear River, and the Malad River.

Although there is a large groundwater reservoir in the valley, most of the water is not of drinking water quality. Utah Division of Drinking (DDW) has defined drinking water quality as less than 1,000 mg/L total dissolved solids (TDS). TDS concentrations exceed 1,000 mg/L throughout most of the valley. High quality groundwater (TDS <500 mg/L) is primarily available along the eastern benches of the valley in the foothills of the Wellsville and Clarkston Mountains and in the benches east of the West Hills near Portage. There is some moderate quality water (TDS from 500 to 1,000 mg/L) in the Bothwell Pocket that is used for drinking water.

Existing drinking water supplies within the county are from developed springs and wells. Most of these sources are located along the benches of the Wellsville Mountains. All of the drinking water quality springs in the area have previously been developed for drinking water use. Therefore, any new development of groundwater supplies will have to be wells.

Bear River Water Conservancy District

Based on conversations with representatives of the Division of Water Rights, there is currently a moratorium on new water right appropriations within the Bear River Valley area while they complete a study of the area. It is anticipated, based on preliminary data from the study, that if they don't close the water right area to new appropriations, there will be very little groundwater remaining to new appropriations. Therefore, only a small portion of future drinking water supplies will be able to be developed from groundwater and it will be necessary for BRWCD to develop surface water resources for drinking water supply.

Currently, most smaller surface water sources within the County, such as Box Elder Creek, are fully developed for agricultural purposes. Because there are still large tracts of land available for farming that are currently not irrigated, it is unlikely that existing surface water sources will be able to be converted to municipal use. Because of this, the Bear River Development project water will be critical for the future drinking water supply for Box Elder County.

WATER SUPPLY AND DEMAND ANALYSES

Data analyses were prepared for each public water supply agency in the County. The main purpose of the analyses was to estimate how much excess capacity each public water supply agency has available to serve new connections within their service area. Another important purpose was to identify areas that would need additional water supplies in the future, how much water may be needed, and how the District may be of service.

Calculations Methodology

The method that was used to calculate a water supplier's excess capacity is outlined as follows:

- 1. Document the number of water connections served currently and historically.
- 2. Project future connections every decade through 2060.
- 3. Calculate the annual water volume requirements using the State Division of Drinking Water criteria for public drinking water systems.
- 4. Estimate the amount of outdoor irrigation on the public drinking water system. The information obtained in the interviews was used to document the presence or absence of secondary water for outdoor irrigation. The estimated amount of outdoor irrigation on the public water system was calculated by 1) comparing the total public drinking water system use reported divided by the number of connections and 2) calibrating the average outdoor use per connection so that the calculated total matches the actual total.
- 5. Calculate the peak day water demand using the State Division of Drinking Water criteria for public drinking water systems.
- 6. Document the water agency's water sources and document the reported physical capacity and water rights capacity for each source.
- 7. Apply a safety factor and calculate how much water supply is available as a "dependable" supply for the water system.
- 8. Calculate how many new residential connections the water system can safely serve beyond the current number served without using more water than is available.

The results of the water supply and demand analyses show which water supply agencies have significant excess water reserves, and which agencies are already having difficulties keeping up with the current demands on their system. The results are presented in Tables 4-1 and 4-2.

Data Sources

The analyses were performed by using information obtained in the outreach interviews and by using existing public information about the annual usage, number of service connections and source data for each water supplier. All public water suppliers are required to submit this data annually to the Utah Division of Water Rights.

Data Precision

The calculations were limited in precision to the data that was submitted by the individual water suppliers to the Utah Division of water rights and to data provided by water suppliers during the interview process. In some cases there were data gaps for years when no data was submitted. Also, some data was inconsistent from year to year for a given water source. Wherever there was missing or inconsistent data, the best and most consistent data was used to calculate the available water supply.

Drought Effects on Water Supply

The data showed that the ground water supply varied dramatically from wet to dry years, especially for springs. It was interesting to note that some springs had their worst and best flow years on different years than others, even within the same water supplier's systems. It was also interesting to note that some of the springs showed their worst flow year in 2013 or in the following year 2014 for data submitted over a period of 30 years. Other springs showed their worst flow years during or immediately following other drought years, including 1988/89, 2003, and 2013. Apparently, drought conditions are not affecting all areas within the County to the same degree on the same drought year.

Because water systems still need to meet demands in dry years when spring flows are low, the dependable spring supply is limited to the dry year flows. Therefore, the dry year spring flows were used in determining water system physical source capacity.

Limiting Factor

Tables 4-1 and 4-2 include a report of the limiting factor for allowing new growth within each water supply agency in the county. The criteria for limiting factors included the following possibilities:

- 1. Peak Day Physical Source Capacity
- 2. Annual Volume Physical Source Capacity
- 3. Water Rights Peak Day Capacity
- 4. Water Rights Annual Volume Physical Source Capacity

Table 4 – 1Water Suppliers' Future Service Capacity

Water Supplier	Number of Connections Served in 2015	Number of Additional Connections That Can Be Served	Limiting Factor
Acme Water Company (Bear River City)	344	709	
Bothwell Cemetery and Water Company	118	99	Peak Day Physical Source Capacity
Brigham City	5494	1,942	
Cedar Ridge Subdivision	33	44	
Coleman Trailer Court	28	0	Water Rights
Corinne City	304	399	Peak Day Physical
Deweyville Town	132	89	Source Capacity
Elwood Town	364	294	
Five C's Trailer Court	26	26	Water Rights
Garland City	831	150	Peak Day Physical
Grouse Creek	45	35	Source Capacity
Honeyville City	489	403	
Hot Springs Trailer Court	45	-4	Water Rights
Howell Town	109	101	Peak Day Physical Source Capacity
Mantua Town	246	158	Water Rights
Marble Hills Subdivision	75	-19	Book Doy Physical
Perry City	1570	370	Peak Day Physical
Plymouth Town	168	61	Source Capacity
Portage Town	108	-7	Water Rights
Riverside North Garland Water Company	634	175	Peak Day Physical Source Capacity
Snowville Town	130	109	Peak Day Physical Source Capacity
South Willard Water Company	450	60	
Sunset Park Subdivision	15	12	Water Rights
Thatcher Penrose Service District	259	194	U U
Tremonton City	2506	-123	
Ukon Water Company (Fielding)	384	39	Peak Day Physical Source Capacity
West Corinne Water Company	619	162	
Willard City	652	682	
Willow Creek Water Company	59	6	
Totals	16,237	6,166	
Averages	560	212 (32%)	72% Peak Day Demand 28% Water Rights

Table 4 – 2BRWCD Service Areas Future Service Capacity

Water Supplier	Number of Connections Served in 2015	Number of Additional Connections That Can Be Served	Limiting Factor
BRWCD Beaver Dam	23	13	Peak Day Demand
BRWCD Bothwell M&I	44	826	Water Rights
BRWCD Collinston	21	16	
BRWCD Harper Ward	83	121	Peak Day Demand
BRWCD South Willard	96	408	
Totals	267	1384	
Averages	53	277 (600%)	80% Peak Day Demand 20% Water Rights

The data presented in Tables 4-1 and 4-2 shows that the most common limitation in the water supply agencies and BRWCD's five service areas is peak day physical source capacity. The water supply agencies' average is 72% and BRWCD's service area average is 80% of the systems limited by peak day capacity, respectively.

The other less common limiting factor is water rights. An average of 28% of the water supply agencies are limited by water rights factors, while 1 of BRWCD's 5 service areas, or 20%, is limited by water rights issues. Some of the systems have peak day capacity water rights flow limitations while others have annual volume water rights limitations.

Dependable Peak Day Supply

Box Elder County is 100% dependent on groundwater for public drinking water supply. Most of Box Elder County's water supply agencies use springs in part for water supply, and a few are totally dependent on springs. To the degree that water suppliers rely on springs they are also restricted by the flow patterns of the springs that they use.

Compared to wells, the nature of springs as a source of water supply makes it difficult to rely on as dependable sources of supply. This is due to the natural fluctuations of spring flows in wet and dry years. During wet years, there is generally plenty of water flowing from the springs to satisfy water demand. However, in dry years the flows can drop dramatically to a small fraction of the average flows. Pumping systems in wells, in contrast, can be turned on and off as desired, thus preserving the groundwater for times when the wells are most beneficial.

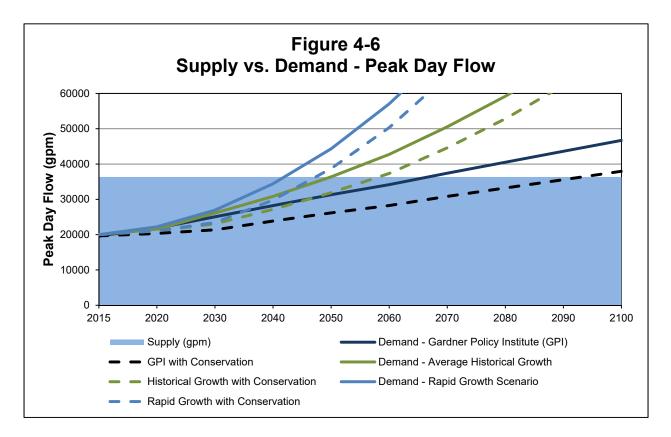
The result of the County's heavy reliance on springs is that the dependable source of supply, especially for meeting peak day demand, is curtailed because of the uncertainty of spring flows from year to year.

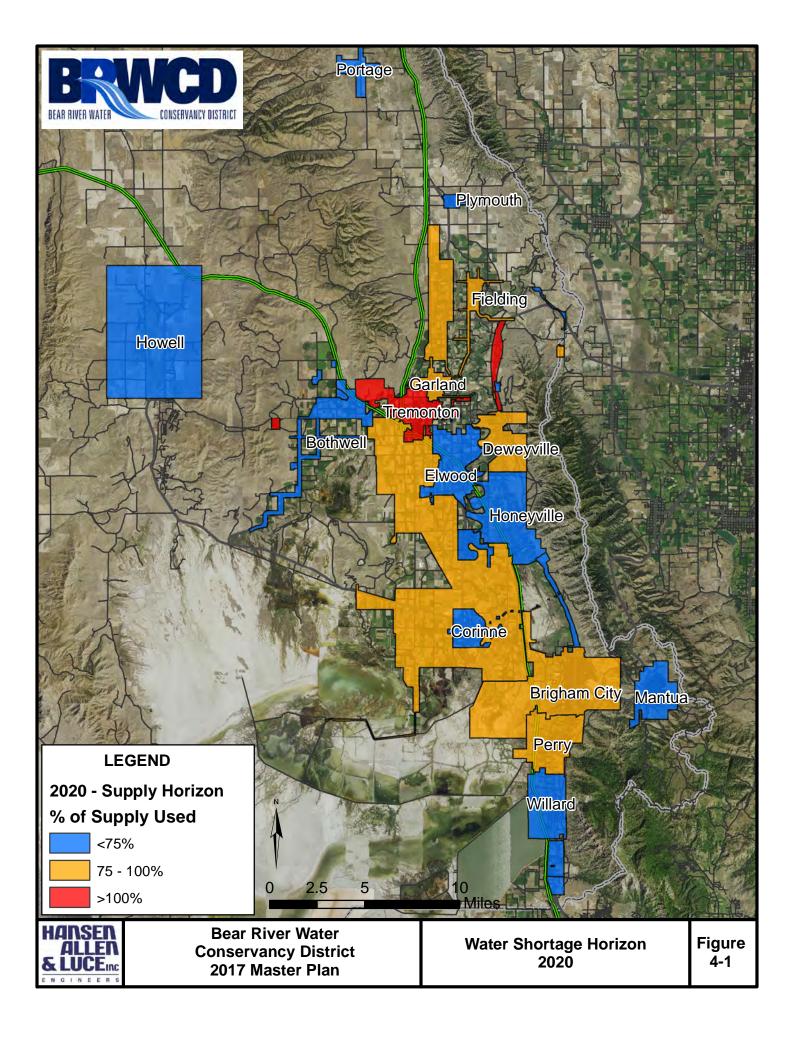
An additional factor limiting the peak day supply is the County's sole reliance upon groundwater in general. Areas in the State of Utah that have access to storage reservoirs and water treatment plants are provided with additional peak day supply during drought conditions due to the large volumes that can be stored in the reservoirs during wetter years. Box Elder County, however, has to meet all peak day demands during drought periods with only what flows from springs and can be pumped from wells, which are both reduced during drought due to declining groundwater levels.

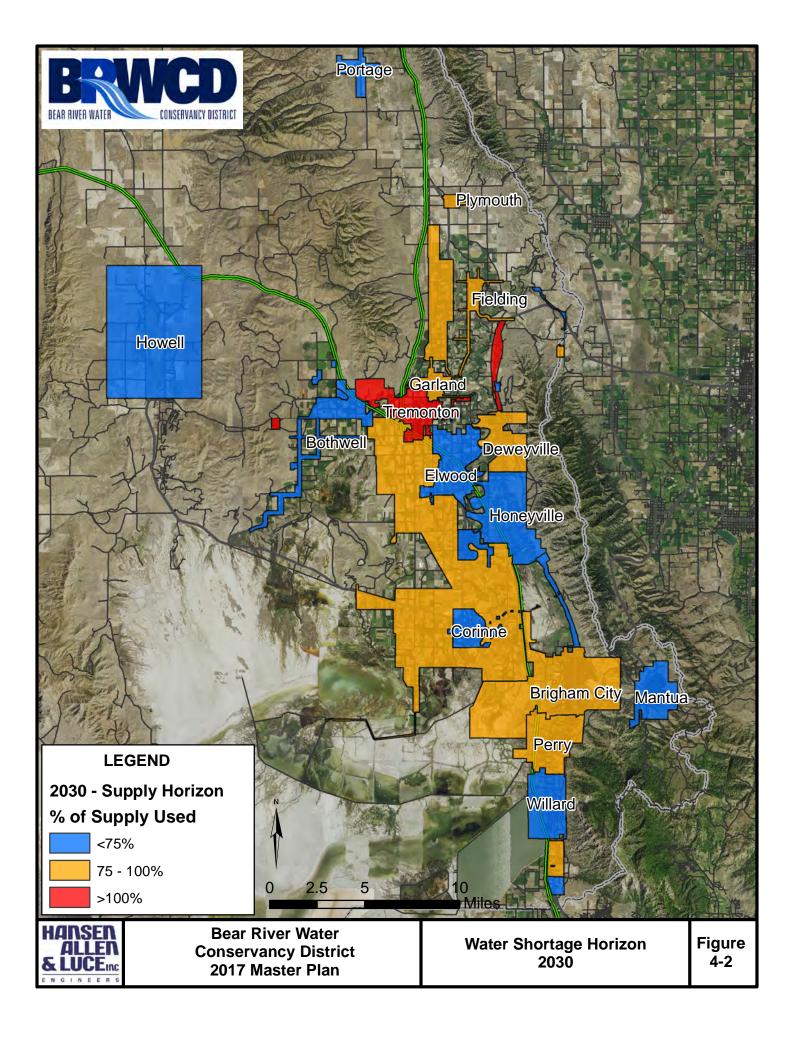
WATER SHORTAGE HORIZON

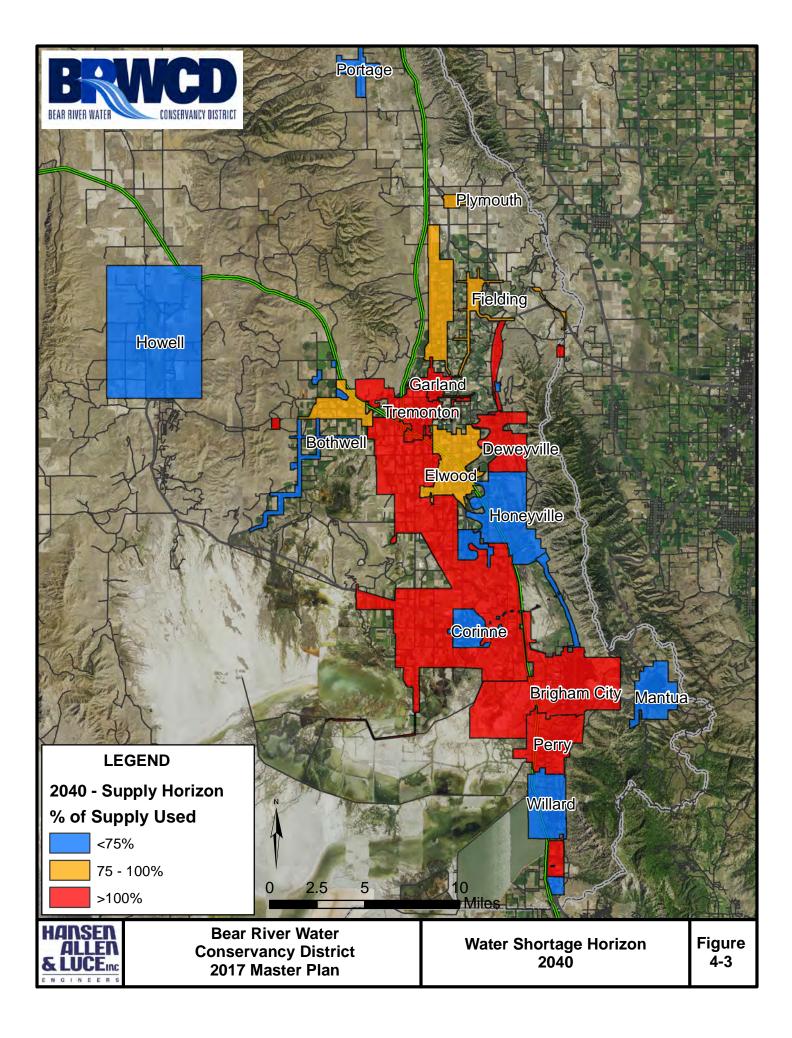
The available water supply (peak day and annual average) for each public water supplier was compared to the projected water demand throughout the planning period. This was done to better understand when water systems would need additional source of supply and which areas of the county would need additional sources first. It was assumed that water suppliers would begin to seek additional water supply when their demand reached 75% of their source of supply. A series of maps was prepared to demonstrate the water shortage horizon for each decade until 2060 as shown on Figures 4-1 through 4-5. If the projected demand is less than 75% of the supply, the water system area was shown in blue. If the demand is between 75% and 100% of supply, it is shown in yellow. Systems with demands greater than the supply are shown in red. It can be seen from these maps that most water systems will have either exceeded their supply or will be seeking additional water supply by the year 2060. These figures assume that the State's water conservation goal will be achieved for Box Elder County by the year 2025. If conservation goals are not achieved by individual systems, supply may exceed demands sooner than predicted on these figures.

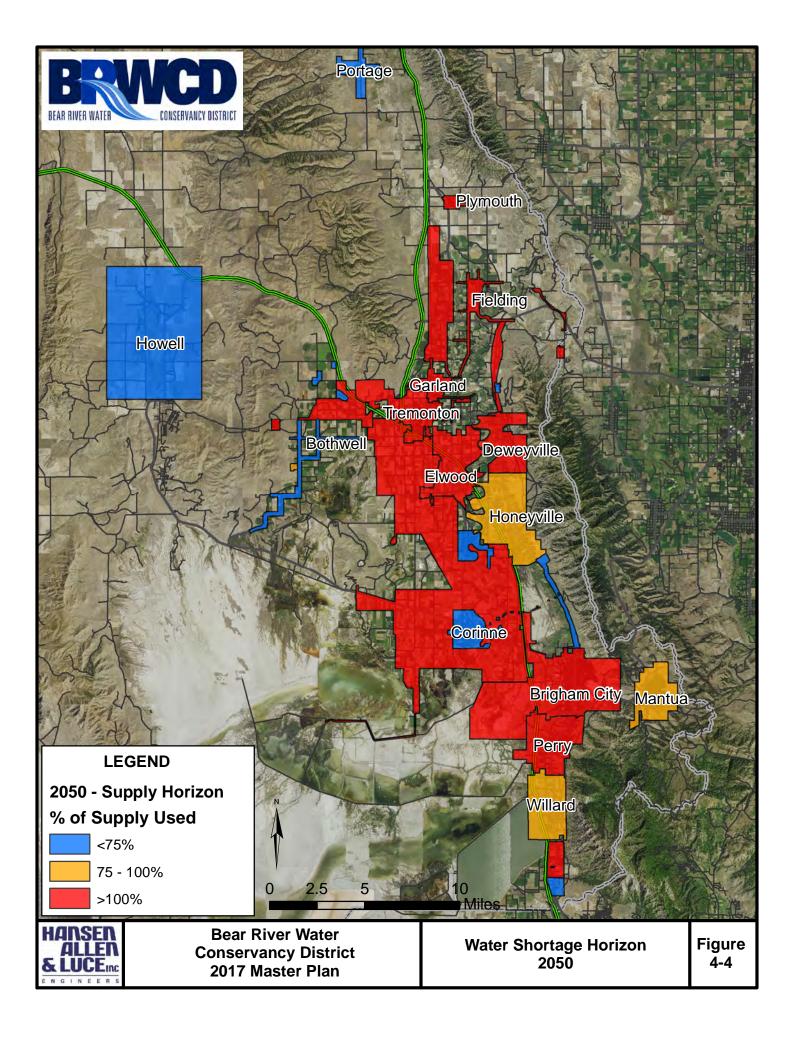
The water shortage horizon maps help show when specific water systems will need water, but do not show when existing overall county water supplies will be exceeded by the projected demand. Figures 4-6 and 4-7 below show the projected water demand using the Gardner Policy Institute (2017) projection, Average Historical Growth Projection, and the Rapid Growth Scenario projection compared to the existing county-wide supply using peak day and annual average volume calculations. Demands were calculated assuming the County meets the conservation goal and assuming current per capita use rates. These figures demonstrate that existing supplies may be exhausted as soon as 2045-2050 if rapid growth is experienced by the County. If future growth follows the pattern developed by GPI, water may not need water until

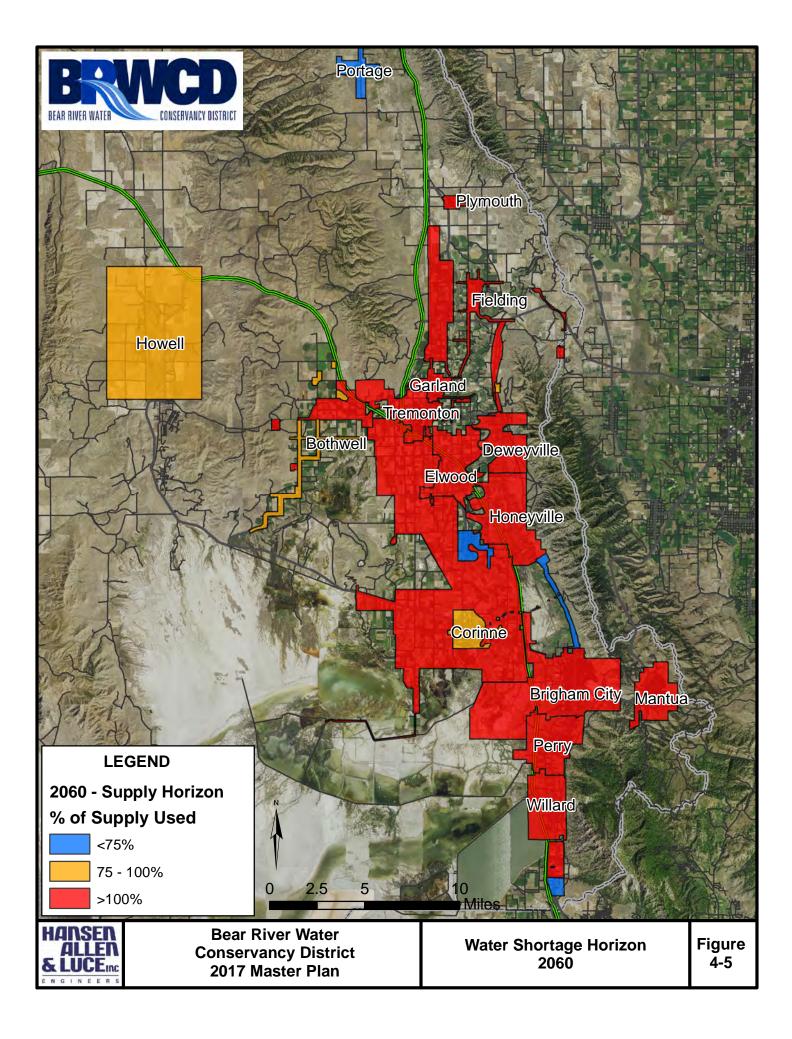


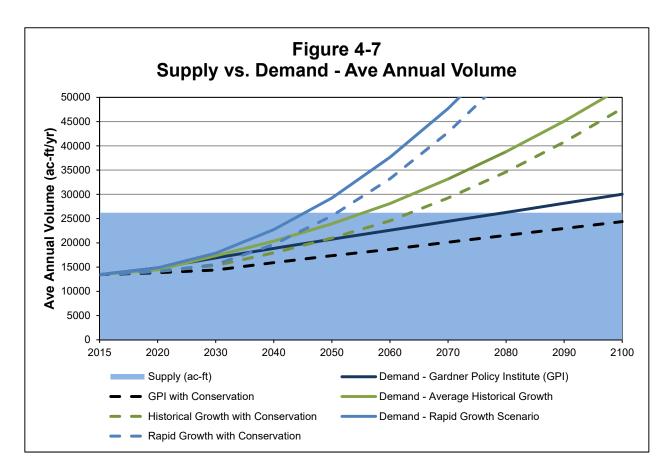












2080. We believe it is more likely that if rapid growth is not experienced, population growth will follow either historical growth rates or somewhere between historical growth and the rapid growth scenario. In this case water from the Bear River Development project will be need 2055-2060. The Bear River Development project is Box Elder County's future water supply.

Build-Out Projections

In June 2010, BRWCD obtained two independent evaluations of the projected build-out demand for eastern Box Elder County (the Bear River Valley). These evaluations were performed by Hansen, Allen & Luce, Inc. (HAL) and Bowen, Collins & Associates (BC&A). The developable area for both evaluations was very comparable (149,000 to 159,000 acres) and is shown on Figure 5-1. It is interesting to note that the methodology for estimating demands was different for the evaluations. HAL developed a unit demand per equivalent residential connection based on typical water use patterns and projected the total number of connections per acre. BC&A developed a range of unit demands per developable acre based on typical values experienced by large water districts in Salt Lake, Davis, and Weber counties. The HAL unit demands were converted to acre-feet per developable acre for comparison purposes. Table 4-3 summarizes the projected water demand for the HAL and BC&A projections.

Table 4 – 3 Build-Out Projections

	HAL Projection	BC&A Projection
Unit Demand per Developable Acre	2.3 ac-ft/ac	2.0 ac-ft/ac – 2.8 ac-ft/ac (ave = 2.4)
Total Developable Acres	159,000 ac	149,000 ac
Projected Build-Out Demand	361,000 ac-ft	298,000 ac-ft – 417,200 ac-ft (ave = 357,000)

Assuming full development of existing firm water rights held by public water suppliers, the total existing available water supply is estimated to be 32,527 acre-feet. Based on these projections, the Bear River Valley will need more than 300,000 acre-feet of additional water to meet buildout demands. The Bear River Development project allocates 60,000 acre-feet of water to Box Elder County to be administered by BRWCD. This still leaves a deficiency of more than 250,000 acre-feet of water.

The Bear River Canal Company (BRCC) has estimated that the current irrigated acreage in the Bear River Valley is about 66,000 acres and that they currently deliver between 250,000 and 280,000 acre-feet of water for irrigation purposes. However, based on the Bear Lake Compact, these water rights are limited to irrigation only and cannot be converted to municipal use. Therefore, no attempt has been made to estimate any conversion of BRCC water to municipal use. However, BRCC could consider providing pressurized irrigation service to new developments in the future. If this were to occur, and a pressurized irrigation system was constructed throughout most of the study area, a total of approximately 163,000 acre-feet of BRCC water could be used for outdoor watering. This would reduce the projected build-out deficiency to around 100,000 acre-feet.

In order to meet build-out demands, the Bear River Valley will need their full portion of the Bear River Development, BRCC water will need to be used in pressurized irrigation systems, and additional water will need to be developed. BRWCD will move forward in securing additional water rights and water supplies to meet future demands.

INTRODUCTION

The purpose of this chapter is to provide a general overview of how BRWCD would integrate into the proposed Bear River Project (BRP). It is important to BRWCD to include all future water supply sources in this Master Plan document, including the BRP water. Box Elder County has the potential to grow at normal Wasatch Front growth rates or higher, and it will soon begin to look more like the current Weber/Davis County areas. This potential for increasing demand from growth requires that additional drinking water supply sources be planned for now. The BRP water, as the population grows, will play a key role in the future water supply for Box Elder County.

This BRWCD Master Plan documents and describes the approach and results for estimating population growth within BRWCD boundaries and associated water supply needs (see Chapter 4). BRWCD service area is estimated to begin needing additional water supply between the years 2045 and 2055.

Depending on population growth and long-term availability/reliability of existing water sources, BRWCD's service area could see a need to develop an initial allotment of BRP water prior to the full scale BRP development. Based on this potential need, this chapter also summarizes a conceptual approach to developing the BRP water prior to the initiation of the full project.

It should be noted that the layout of BRWCD's and BRP facilities shown should be considered as very conceptual at this stage of the project. The BRP facilities are shown for the purposes of providing a concept for integration of BRWCD's system.

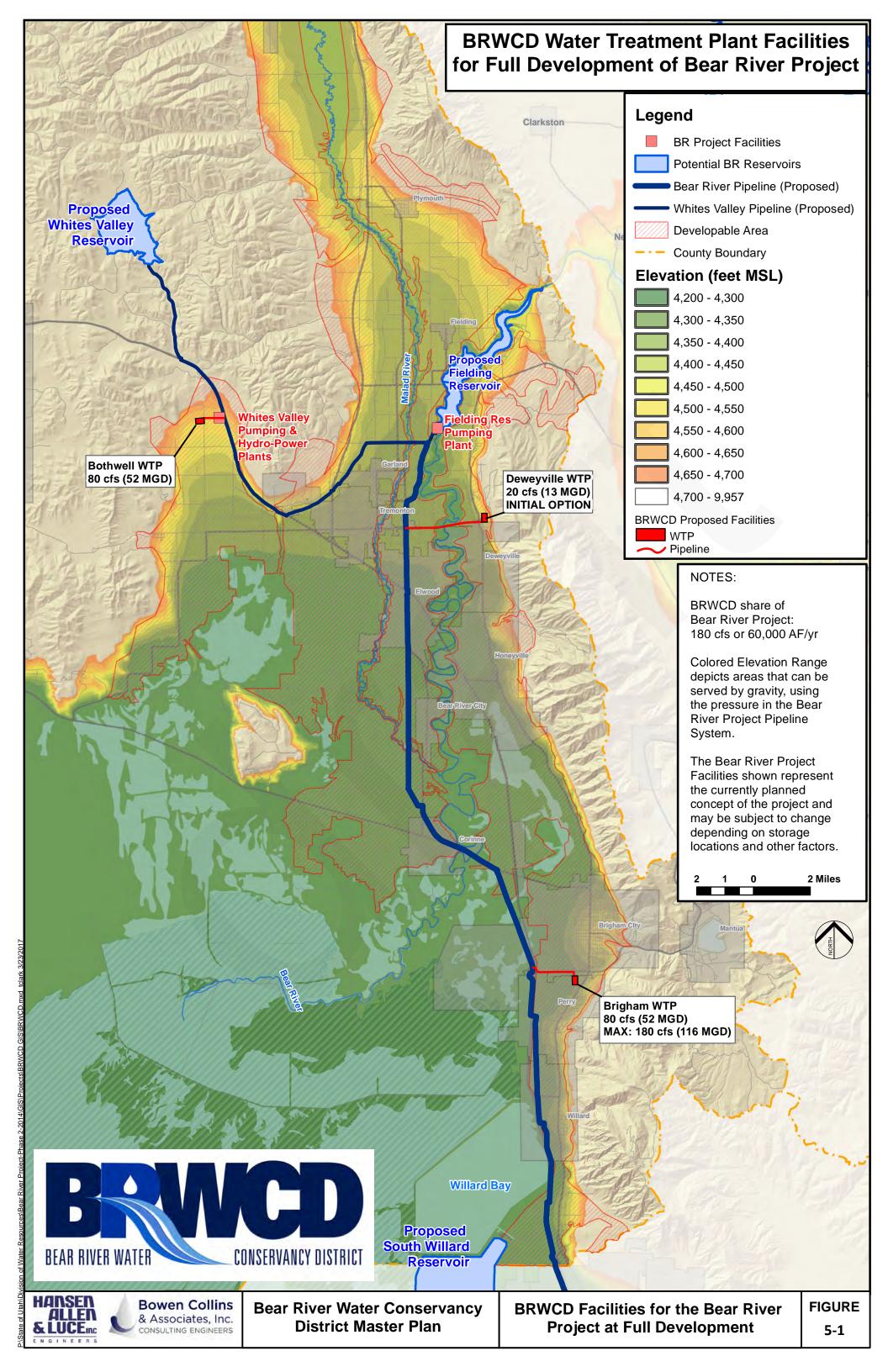
BEAR RIVER PROJECT BACKGROUND

The purpose of the BRP is to develop Bear River water and deliver it to the four water agencies in Box Elder, Cache, Weber/Davis, and Salt Lake Counties. In 1991, the Utah State Legislature passed the Bear River Development Act. The Act directs the DWRe to develop 220,000 acrefeet (AF) of water right applications held by the Board of Water Resources. The overall Project will consist of reservoir storage and conveyance facilities necessary to deliver water from the Bear River to the four participating water agencies.

The State holds the water rights for the project and will contract with each participating water district to provide the water through the BRP. Box Elder County's set allocation of BRP water is 60,000 AF per year. The cost of the water conveyance and storage aspects of the BRP (minus any public purpose aspects, such as recreation, flood control, etc.) will be equally divided between the four participating water agencies: BRWCD, Cache County Water District, Jordan Valley Water Conservancy District, and Weber Basin Water Conservancy District.

The BRP concept is currently being developed and refined, with reservoir (storage) sites being evaluated. Depending on where those reservoirs are located, the pipeline and pumping facilities may change. Figure 5-1 shows the planned conceptual BRP facilities in the Box Elder County area. Currently the BRP is looking at four reservoirs in the Box Elder County area for storage: Washakie to the north (not shown), Whites Valley to the West, Fielding (on the Bear River near Fielding), and South Willard (south of Willard Bay). These sites are currently being evaluated for

Bear River Water Conservancy District



feasibility and cost. Modifications to the storage size and location may have some impacts on the sizes and locations of BRWCD's facilities shown.

BRWCD FACILITIES AT FULL DEVELOPMENT OF BEAR RIVER PROJECT

The purpose of this section is to outline the future BRWCD facilities needed under the full development of the BRP. BRWCD will have a 60,000 AF allocation from the BRP that generally will be distributed throughout the service area from Fielding to Willard. Figure 5-1 depicts BRWCD's main service area, including the approximate developable area (in red hatching).

The BRP main transmission pipeline (90" to 114" diameter) runs north to south, generally parallel to the Bear River in the north and Willard Bay in the south of the County, as shown in Figure 5-1, stretching the length of BRWCD's service area. The colored areas in Figure 5-1 show the elevation range at which the pressurized BRP Pipelines could deliver water without additional pumping. The main BRP storage facilities, in relation to BRWCD, being evaluated are the Fielding and Whites Valley Reservoirs, located as shown.

The Fielding Reservoir will be located on the Bear River, and has a planned storage capacity from 30,000 AF to 70,000 AF. Delivery flows from the reservoir will have to be pumped either up to Whites Valley or south to the West Haven WTP (not shown) for deliveries to the Weber/Davis and Salt Lake County water entities. The proposed South Willard Reservoir, if implemented, will be mainly for storage capacity for the southern water entities.

The Whites Valley Reservoir has a potential storage capacity of 150,000 AF to 400,000 AF. It sits about 1,000 feet above the Bear River, so it will require significant pumping to supply the reservoir and power recovery hydropower systems for delivery flows. The pipeline (120" to 144" diameter) to and from Whites Valley Reservoir would serve as conveyance of raw water to BRWCD's Bothwell service area.

In this fully developed BRP configuration, BRWCD will take raw water deliveries directly from the BRP pipelines at the proposed locations shown in Figure 6-1. The Bothwell area is adjacent to the alignment of the Whites Valley pipeline, which makes it a candidate for possibly locating a water treatment plant (WTP) on property that BRWCD owns near the Whites Valley Pump and Hydro Plant. The southern service area of BRWCD will be served off the main BRP pipeline near Brigham City, with a possible WTP located near Brigham City. This plant will be able to service the area from Bear River City down to Willard. A smaller WTP could be located in the vicinity of Deweyville to serve water to the northeast side of BRWCD's service area.

BRWCD will be responsible for the metering and controls of their connections on the main BRP pipeline, including their raw water transmission pipeline to the WTP. The proposed WTP capacities listed in the figure represent an approximation of maximum capacities under this fully developed BRP scenario. They are listed only for the purposes of planning and approximation of facility size and cost.

Table 5-1 summarizes the required facilities with associated approximate costs for BRWCD to obtain the full allotment of their BRP water.

Bear River Water Conservancy District

BRWCD PROPOSED FACILITY *	COST
	(\$ MILLIONS)**
Deweyville WTP (13 MGD) 24" Diameter Pipeline (14,200 LF) 15 MG Finished Water Storage	\$35.0
Bothwell WTP (52 MGD) 48" Diameter Pipeline (3,900 LF) 55 MG Finished Water Storage	\$123.0
Brigham City WTP (52 MGD) 48" Diameter Pipeline (8,900 LF) 55 MG Finished Water Storage	\$126.0
TOTAL	\$249.0
* Includes metering and valves off of main BRI	¥=

Table 5-1BRWCD Facilities Required atFull Development of Bear River Project

Includes metering and valves off of main BRP pipeline

** Represents a conceptual level estimate of 2017 costs

BRWCD EARLY DEVELOPMENT OF BEAR RIVER PROJECT

As described in the introduction to this chapter, it is possible that BRWCD will require development of an initial allotment of their share of the BRP water prior to full scale BRP development. This section provides a conceptual level approach to early development of BRWCD's share of BRP water. Chapter 2 of this Master Plan identifies a need for approximately 10,000 AF by the years 2045-2055 within BRWCD's service area. The communities with the highest future need tend to be north of Honeyville, along the east bench of the valley and extending into the middle of the valley in the greater Tremonton area.

The simplest approach to developing a 10,000 AF share of BRP water would be to locate a small diversion off the Bear River, near Deweyville, and pump up to a treatment facility high on the east bench and then store and distribute treated water from there. It is estimated that approximately 15-20 cfs (up to 13 MGD) would be diverted for this initial development. The Bear River, even at lower flows, generally has adequate flow to supply the needed 15-20 cfs to this diversion. A detailed hydrologic evaluation of available river supply would need to be completed to determine supply reliability and understand the probability and magnitude of shortages (if any) in lower water years.

The Bear River diversion facility for initial development of BRP water would not have any integration into the proposed full development BRP facilities. However, BRWCD's pipeline and treatment facility would continue to be utilized into the future, but with a more reliable source of water supply once BRP storage facilities are fully developed.

It is assumed that the following facilities would be required for this early development of 10,000 AF of BRP water:

Master Plan

- 1. Diversion on the Bear River
 - a. Small Concrete/Earth Diversion Dam Structure
- 2. Pumping Station (1,000 hp, capacity up to 20 cfs)
 - a. Side Channel Intake Bar Racks and Fish Screens
 - b. Pump Station Facility
- 3. Pipeline (24" diameter, 6,650 LF) to WTP
- 4. Treatment Facility (peak 13 MGD)
 - a. Initial Sedimentation Basin
 - b. Membrane Treatment Process
 - c. Chlorination
- 5. Finished Water Storage (15 MG)
- 6. Transmission/Distribution System (not included in cost)

The estimated cost for these initial water supply facilities is approximately \$35 million, representing a conceptual level facility sizing and configuration.

As ongoing planning of the BRP facilities continues, BRWCD should continue to modify their approach and plans for initial development of a portion of their share of the BRP. As the BRP is the future water supply for Box Elder County, it is important to encourage and support the State of Utah Division of Water Resources to continue to study all aspects of the BRP as outlined in the Bear River Development Act.

INTRODUCTION

In response to the steady growth occurring throughout the state and a sincere concern for the future availability and cost of the water supply, Utah Division of Water Resources (DWRe) developed *Utah's Municipal & Industrial (M&I) Water Conservation Plan – Planning for the Future* in 2001. In this plan, it is established that the baseline M&I water use in the State of Utah was an average of 295 gallons per capita per day (gpcd) in the year 2000. In order to reduce per capita M&I water use, the State of Utah established a goal "to reduce the 2000 per capita water demand from public community water system by at least 25%" by the year 2050. In 2014, DWRe updated the state goal to accomplish the same 25% reduction by the year 2025 instead of 2050 (see *Utah's Municipal & Industrial Water Conservation Plan – Investing in the Future* by DWRe).

In 2007, the Utah State Legislature passed and amended the "Water Conservation Plan Act" (73-10-32 Utah Code Annotated). This law requires water conservancy districts and retail drinking water providers to prepare a water conservation plan, submit the plan to the Utah Division of Water Resources and to update the plan at least every five years. BRWCD has prepared a water conservation plan and has regularly updated it. The most recent update was completed in 2016.

Conservation is considered as the least costly and most logical method of extending the available water supply to meet the future water demands. BRWCD intends to promote water conservation among its retail and wholesale customers and to meet the State's goal for conservation.

This chapter documents the baseline year 2000 per capita water demand by BRWCD retail and wholesale customers, establishes the target per capita water use goal, explores current percapita water use throughout the County, and identifies strategies for helping to encourage conservation.

PER CAPITA USAGE

Based on water use records reported to the Utah Division of Water Rights (DWRi) by public water suppliers located within Box Elder County and U.S. Census data, the average per capita M&I water use by BRWCD and public water suppliers potentially served by BRWCD was 264 gpcd. Therefore, in order to meet the State's water conservation goal, Box Elder County would need to reduce their per capita use to about 200 gpcd by the year 2025.

Average M&I per capita water usage for incorporated cities and towns in Box Elder County are shown in Table 6-1, and average M&I per capita usage for unincorporated areas in the county are shown in Table 6-2.

Table 6-1Incorporated Cities and Towns Residential Per Capita Water Use

Municipality	Number of Residential Connections in 2010 (1)	Estimated Population Served	Total 2010 Usage Kgal	Per Capita Usage GPCD
Perry City	1,406	4,512	185,986	113
Honeyville City	463	1,441	83,995	160
Corinne City	279	685	41,357	165
Bear River City	335	853	58,258	187
Elwood Town	326	1,034	70,721	187
Garland City	756	2,400	211,821	242
Willard City	611	1,772	161,103	249
Brigham City	5,853	17,899	1,654,741	253
Tremonton City	2,060	7,647	29,374	261
Plymouth Town	151	414	40,989	271
Deweyville Town	121	332	33,016	272
Howell Town	84	245	26,312	294
Snowville Town	85	167	23,841	391

1. The 2010 Federal Census is the latest population count for individual communities

BRWCD's service areas also have residential connections as well as commercial and wholesale water delivery connections. Per capita usage from 2010-2015 for BRWCD's service areas are presented in Table 6-3. Note that per capita usage in 2011 was unusually low due to frequent rainy weather during the summer months that year.

Table 6-2
Unincorporated Areas Residential Per Capita Water Use

Water Service Provider	Number of Residential Connections in 2010	Estimated Population Served	Total 2010 Usage Kgal	Per Capita Usage GPCD
South Willard Water Company	400	1,256	44,645	97
Coleman Trailer Court	28	88	4,236	132
Five Cs Trailer Court	26	82	3,941	132
Hot Springs Trailer Court	45	141	6,830	132
Riverside North Garland Water Company	409	1,284	87,062	186
Marble Hills Subdivision	71	223	18,018	221
Sunset Park Subdivision	15	47	3,910	227
UKON Water Company (Fielding)	360	1,130	96,345	234
Grouse Creek	45	141	12,056	234
Bothwell Cemetery and Water Company	128	402	34,603	236

Water Service Provider	Number of Residential Connections in 2010	Estimated Population Served	Total 2010 Usage Kgal	Per Capita Usage GPCD
Thatcher Penrose Service District	243	763	70,770	254
Willow Creek Subdivision	59	185	17,595	260
West Corinne Water Company	564	1,771	170,223	263
Cedar Ridge Subdivision	27	85	11,475	370

Table 6-3BRWCD Service Areas Per Capita Water Use

٢	⁄ear	Number of Connections	Total Usage Kgal	Per Capita Usage (gpcd)
2010	H,B	123	27,266	187
2011	H,B	121	21,982	153
2012	H,B	123	28,836	198
2013	H,B,BD	151	32,441	181
2014	H,B,BD	157	32,781	176
2015	H,B,BD,C	176	37,230	198

Note: Letters indicate systems included in calculations: H= Harper Ward, B= Bothwell, BD = Beaver Dam, C = Collinston

Based on the information presented in Tables 6-1, 6-2, and 6-3, the average per capita M&I water use in 2010 was about 228 gpcd. This represents a reduction from the 2000 baseline water use of more than 13%, which is more than half of the conservation goal. Additional water conservation will need to occur to reduce per capita water use within the BRWCD service area. It is believed that implementation of the following strategies will help Box Elder County reach the conservation goal.

CONSERVATION STRATEGIES

The following list shows a few of the more common efforts that most water agencies can take to help encourage conservation.

 Water Rates – Many water suppliers in the county are using single tier water rate structures. Redesigning water rates to encourage conservation is a very effective tool for reducing per capita water use. Not only does water usage generally drop after a multi-tiered water rate structure is implemented, but revenue also generally increases to the water utility. The increased revenue provides more resources for water suppliers to make needed water system improvements including conservation measures. Conservation oriented rate structures can also address the need to provide basic water supply for public health needs at a very reasonable cost. BRWCD supports and encourages conservation oriented water rate structures.

- 2. Public Outreach Some water users may lack information and understanding about efficient water use habits and practices. Many customers' irrigation and indoor practices are based on convenience rather than plant needs and water supply considerations. The benefits could be significant if BRWCD and other water suppliers would provide educational and motivational information to water users to become more informed about ways to water their lawns and gardens more efficiently. Some common ways of providing information to users include:
 - a. Bill stuffers can easily be prepared and included with the water bills that are sent out.
 - b. Water supplier websites is a common way of providing water saving information to water users.
 - c. An annual "Water Week" is sponsored by the Intermountain Section of the American Water Works Association (AWWA) in Utah. AWWA provides educational resources such as newspaper articles, seminars, elementary school class presentations, etc. These resources include conservation and other helpful information.
 - d. The Utah Division of Water Resources website is a valuable resource that contains extensive conservation strategies and information.
- 3. **Meter Replacement Programs** As water meters age, they become less accurate which leads to loss of revenue due to under reported water usage. This is a two edged sword because the quantity of water being used is underreported, which leads to complacency about water usage, and the revenue to the water supplier is less than it should be which leads to financial difficulties. BRWCD recommends following industry recommendations of replacing meters as soon as they begin to lose efficiency.
- 4. Water Audits and Leak Detection and Repair Many water supply agencies have found that water audits are an effective method of identifying water losses in their water systems. This in turn makes it much easier to rectify the problems that are causing the losses. A good water audit can easily pay for itself in terms of the water saved and made available for sale to customers.
- 5. Outdoor Watering Restrictions Because of the loss of water due to evaporation on hot summer days, some water agencies recommend that lawn watering be restricted during daytime hours. The estimated loss from evaporation is 10 to 15 percent of applied water. BRWCD is very supportive of and has adopted the practice for BRWCD facilities as recommended by the State of Utah to refrain from outdoor watering between the hours of 10:00 a.m. and 6:00 p.m.
- Landscaping Ordinances BRWCD encourages water suppliers to develop and adopt landscaping ordinances that encourage water-efficient landscaping, irrigation efficiency standards and acceptable plant materials for commercial and residential developments in their service areas.

CHAPTER 7 - EXTENDING EXISTING GROUNDWATER SUPPLIES

INTRODUCTION

Box Elder County is currently 100% reliant on groundwater supplies for public drinking water systems. Chapters 2 through 5 of this Master Plan make it abundantly clear that in the not-too-distant future the County's growth will be limited by the existing groundwater supplies. One major option to support future growth is Bear River Development water as discussed in Chapter 5. However, in 2017 this option is at least 20 years into the future prior to implementation, and some communities are already looking for additional water supply.

Several questions warrant consideration:

- Are current groundwater supplies being managed and used to their maximum effectiveness?
- Are there groundwater supplies that are currently unused during periods of low usage that could be captured and put to beneficial use?

OPTIONS TO EXTEND EXISTING GROUNDWATER SUPPLIES

Several approaches (in addition to water conservation) are common throughout the arid western United States and in other parts of the world to extend existing groundwater supplies to meet the growing need for drinking water. Some of these strategies are listed below along with a brief description of the strategies that are available to achieve higher utilization of the available groundwater resources.

It is interesting to note that one or more water suppliers in Box Elder County have already successfully implemented some or all of the strategies listed below [except wastewater reuse].

Renovation of Wells and Springs – Sometimes a well or a spring can decline in production over many years and the water supplier may be unaware that they can often renovate their groundwater source to restore lost yield. Well casings, for example, commonly suffer from corrosion, mineral encrustation or biological growth with a resulting loss of well yield. Wells also sometimes develop a sand production problem that causes problems. There are many strategies for cleaning or relining the affected areas on the well casing without having to drill a new well. Springs that have been constructed without liners, for example, can lose a major amount of the total actual spring flow. Springs like this can be redeveloped to capture essentially 100% of the available spring flows.

Water Treatment of Poor Quality Groundwater – Water treatment systems are available to treat most contaminants that are common in Box Elder County, including high mineral content (total dissolved solids, or TDS), sulfur, arsenic, nitrates, radionuclides and iron & manganese. If a community has a poor quality groundwater source, this option should be included for consideration.

Blending Poor Quality Groundwater with High Quality Groundwater – Sometimes, it is possible to mix two groundwater sources by blending them prior to introduction into the water

Bear River Water Conservancy District

system. This can result in acceptable water quality while maintaining and extending the use of an otherwise unacceptable source of supply.

Pressurized Irrigation Water Systems – Box Elder County is fortunate to have an abundance of low cost irrigation water for most of the Eastern portion of the County. Some communities have implemented secondary irrigation systems, thus greatly reducing the summertime demand on the public drinking water system. It is estimated that as much as 65% water savings can result in the public water system by switching the outdoor irrigation to a secondary water system. These dual systems generally do not result in a cost savings to the individual water user, but the reliance on groundwater that otherwise could be used for serving future populations can be decreased significantly, thus extending the groundwater resource.

Aquifer Storage and Recovery – This approach is defined by the Utah Division of Water Resources as follows:

"Intentionally recharging aquifers when water is available and recovering it when needed"

Brigham City has a functioning ASR project that works as follows: During the winter months several of the City's springs produce flows that are in excess of the City's usage. Rather than let the excess flows go to overflow, the City injects this drinking water into three ASR wells. Then during the following summer months when high water demand is occurring, the City turns on the ASR wells and pumps the recovered spring water back into the water system. This system is even more advantageous to the City because the wells being used originally had poor water quality. The ASR stored water displaces the poor quality water so that only high quality springs water is actually produced for the water system in the summertime.

Water systems that have excess spring flows in the winter could investigate the feasibility of building an ASR project using the same approach that Brigham City is using.

Another approach to ASR projects is to take irrigation return flows or tail water from irrigation ditches and route this water to flow into surface spreading basins. The water can be recovered down gradient by extraction wells. This method artificially recharges the aquifer and provides a "new" source of groundwater for use in the public drinking water systems.

Wastewater Reuse – Utah Division of Water Quality allows the use of reclaimed wastewater for certain uses without further treatment. Where possible, reclaimed wastewater could be used for irrigation needs and possibly industrial needs rather than public drinking water.

INTRODUCTION

The process of analyzing the existing water supply agencies' capacities highlighted the need for future BRWCD projects to add source, storage and distribution facilities. In many locations, new or enlarged BRWCD facilities need to be constructed in order to support anticipated future growth. In other areas, new or enlarged facilities are needed to resolve existing deficiencies. BRWCD's goal in developing capital facilities is to provide water supply while minimizing negative effects on the environment, wildlife, and individual property owners. For this reason, where possible, proposed project facilities are planned to be located within existing rights-of-way.

This chapter covers the recommended BRWCD projects to meet existing or anticipated future water system needs, both for BRWCD service areas as well as for BRWCD customer water supply agencies. Future projects are categorized according to the time period they will be needed: 0 - 10 years, 10 - 20 years, and more than 20 years.

In addition to the capital facilities proposed in this chapter, BRWCD will also pursue securing additional water rights and water supplies for future demands as needed.

Projects to be Implemented Within 0 - 10 Years

Projects needed within the next 10 years are urgent and important. Source development projects typically require at least 5 years to complete, so planning for these projects should be initiated right away. Storage and distribution projects can usually be implemented within a 2-3 year time frame, so these types of projects usually do not need the same degree of advanced planning as the source development projects. Table 8-1 includes the projects that are projected for the 0 - 10 time frame. Figures 8-1 and 8-2 show the locations of master planned projects.

Projects to be Implemented Within 10 – 20 Years

Projects that are planned for implementation between 10 - 20 years from now are important but not urgent. Projects in this category will be needed but for various reasons the timing is not urgent at present. Lack of funding is one common reason for delaying these projects. Table 8-2 includes the projects that are projected for this time frame.

Projects to be Implemented Beyond 20 Years

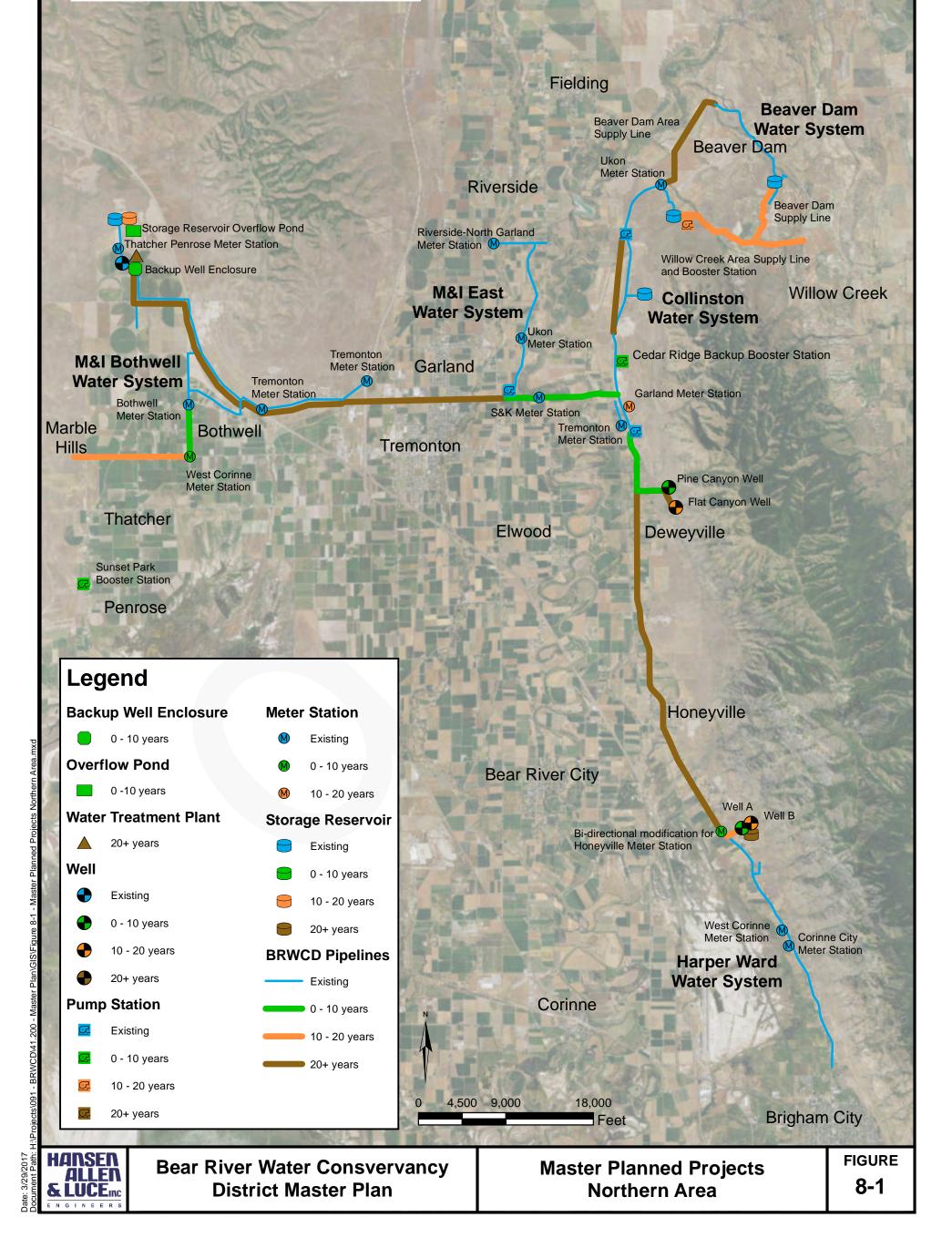
Projects that are planned for implementation beyond 20 years from now are anticipated but not needed until growth demands result in their need. Table 8-3 includes the projects that are projected for this time frame.

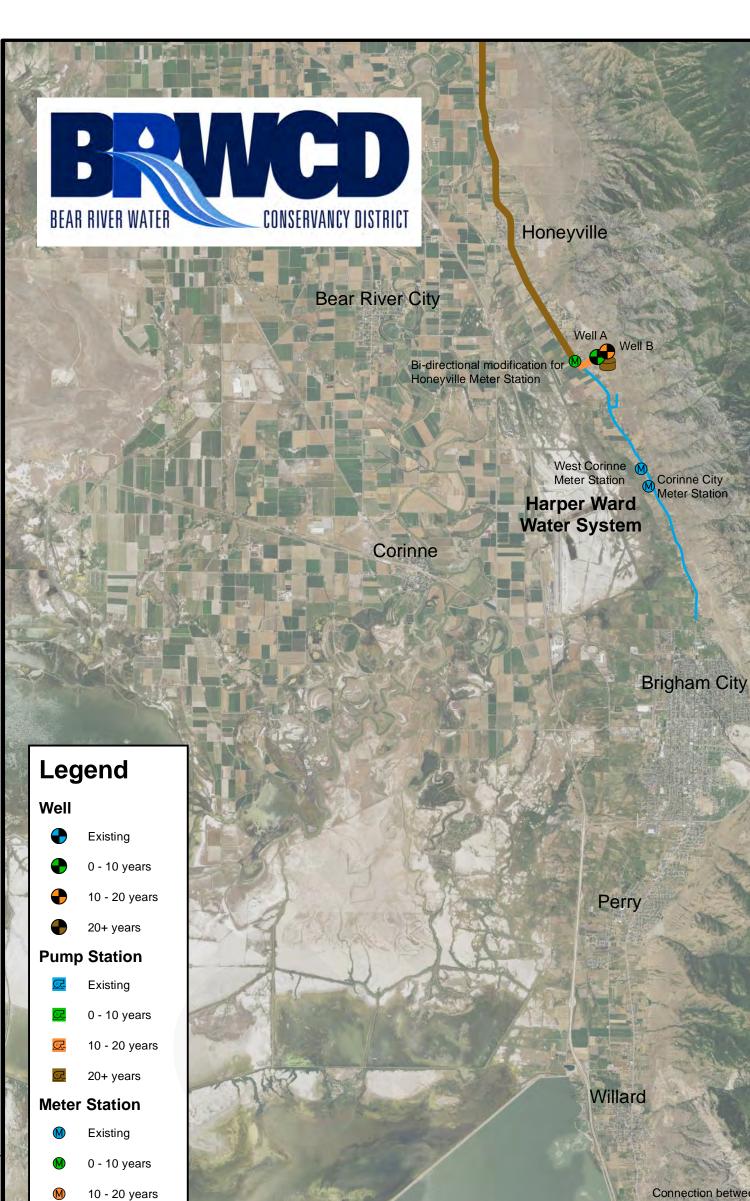
PRECISION OF COST ESTIMATES

When considering cost estimates, there are several levels or degrees of precision, depending on the purpose of the estimate and the percentage of detailed design that has been completed. The following levels of precision are typical:



Riverside-North Garland/Plymouth Booster Station





Mantua



BRWCD\41.200 - Master Plan\GIS\Figure 8-2 - Master Pli

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Type of Estimate	Precision
Master Planning	±50%
Preliminary Design	±30%
Final Design or Bid	±10%

For example, at the master planning level (or conceptual or feasibility design level), if a project is estimated to cost \$1,000,000, then the precision or reliability of the cost estimate would typically be expected to range between approximately \$500,000 and \$1,500,000. While this may seem very imprecise, the purpose of master planning is to develop general sizing, location, cost, and scheduling information on a number of individual projects that may be designed and constructed over a period of many years. Master planning also typically includes the selection of common design criteria to help ensure uniformity and compatibility among future individual projects. Details such as the exact capacity of individual projects, the level of redundancy, the location of facilities, the alignment and depth of pipelines, the extent of utility conflicts, the cost of land and easements, the construction methodology, the types of equipment and material to be used, the time of construction, interest and inflation rates, and permitting requirements, are typically developed during the more detailed levels of design and completed in the time frame wherein the project is pending.

At the preliminary or 10% design level, some of the aforementioned details will have been developed. Major design decisions such as the size of facilities, selection of facility sites, pipeline alignments and depths, and the selection of the types of equipment and material to be used during construction will typically have been made. At this level of design the precision of the cost estimate for a \$1,000,000 project would typically be expected to range between approximately \$700,000 and \$1,300,000.

After the project has been completely designed, and is ready to bid, all design plans and technical specifications will have been completed and nearly all of the significant details about the project should be known. At this level of design, the precision of the cost estimate for the same \$1,000,000 project would typically be expected to range between approximately \$900,000 and \$1,100,000.

Table 8-1Master Planned Projects0 - 10 Year Time Frame

SYSTEM	PROJECT DESCRIPTION	TOTAL COST
	1.5 MG Storage Overflow Pond	\$250,000
	12-inch Mainline Extension in 1000 West between 12000 N and 11200 N	\$193,000
M&I	Canal Crossing for Mainline Extension at about 12000 N 1000 W	\$54,000
Bothwell	West Corinne Meter Station at 10000 W 11200 N	\$41,000
	Sunset Park Booster Station and Piping at 11700 W Sunset Dr.	\$92,000
	Enclosure for Newman Backup Well	
	Pine Canyon Test Well west of Deweyville	\$101,000
	Pine Canyon Production Well	\$405,000
	Pine Canyon Pump Station and Wellhouse	\$540,000
	12-inch Pine Canyon Well Pipeline between well site and HWY 38	\$200,000
Collinston	12-inch Hwy 38 Pipeline between 10517 N to 11360 N	\$420,000
	12-inch Cross Valley Pipeline (Hwy 38 to 12000 N Pump Station)	\$778,000
	16-in Bear River Crossing for Cross Valley Pipeline via Horizontal Directional Drilling	\$128,000
	Cedar Ridge Backup Pump Station at about 12550 N HWY 38	\$101,000
	Test Well 1	\$101,000
	Production Well 1	\$405,000
Harper-Ward	Pump and Wellhouse for Well 1	\$473,000
	12-inch Well 1 Pipeline	\$213,000
		φ210,000
	Well Site #4 Backup Generator	\$108,000
	Well Site #3 Test Well	\$101,000
South	South Willard Well Site #3 Production Well	\$405,000
Willard	South Willard Well Site #3 Pump and Wellhouse	\$473,000
	South Willard Well Site #3 10-inch pipeline	\$34,000
	Connection between South Willard Water Company and Willard City and between Perry City and Willard City	\$164,000
	TOTAL	\$5,781,000

Table 8-2Master Planned Projects10 - 20 Year Time Frame

SYSTEM	PROJECT DESCRIPTION	TOTAL COST
	Marble Hills Pump Station	\$320,000
	Marble Hills Pipeline Phase 1	\$936,000
M & I	Marble Hills Pipeline Phase 2	\$270,000
Bothwell	Backup Well Enclosure	\$196,000
Dottiwen	Backup Generator	\$108,000
	Fire Hydrants	\$73,000
	1 MG Storage Reservoir	\$1,350,000
M & I East	Plymouth Booster Station	\$135,000
	Garland Meter Station	\$41,000
	Flat Canyon Test Well	\$101,000
	Flat Canyon Production Well	\$405,000
Collinston	Pump and Wellhouse for Flat Canyon Well	\$473,000
Commistori	10-inch Flat Canyon Well Pipeline	\$124,000
	12-inch Willow Creek 14400 N Transmission Pipeline	\$1,006,000
	Willow Creek Booster Station	\$203,000
	Beaver Dam Early Park Road 8" Supply Pipeline	\$327,000
	Harper Ward Well 2 Test Well	\$101,000
Harper-Ward	Production Well 2	\$405,000
	Pump and Wellhouse for Well 2	\$473,000
	TOTAL	\$7,047,000

Table 8-3Master Planned ProjectsBeyond 20 Year Time Frame

SYSTEM	PROJECT DESCRIPTION	TOTAL COST
	Reverse Osmosis Water Treatment Plant (WTP)	\$4,311,000
M & I	12-inch Pipeline between WTP and west Tremonton	\$2,363,975
Bothwell	2 Freeway crossings between WTP and west Tremonton	\$184,350
	12-inch Pipeline in between 2300 W 1000 N and 12000 N Pump Station	\$1,185,550
	Test Well for Bear River Production Well 1	\$101,000
	Bear River Production Well 1	\$405,000
	Pump and Wellhouse for Bear River Production Well 1	\$473,000
	Test Well for Bear River Production Well 2	\$101,000
Collinston	Bear River Production Well 2	\$405,000
	Pump and Wellhouse for Bear River Production Well 2	\$473,000
	Add 3rd Pump for Collinston Booster Stations	\$270,000
	8-inch 2400 W Transmission Pipeline	\$539,000
	8-inch HWY 38 Pipeline between 12950 N and 14530 N	\$473,000
	Harper Ward Storage Reservoir	\$1,031,750
	Harper Ward Well 3 Test Well	\$101,000
Harper-Ward	Production Well 3	\$405,000
	Pump and Wellhouse for Harper-Ward Well 3	\$540,000
	12-inch Pipeline between Harper-Ward and Deweyville	\$2,568,000
	TOTAL	\$15,930,625

SYSTEM IMPROVEMENT PROJECTS

As discussed in previous chapters, source, storage and distribution system projects were identified during the system analysis. Project costs for water system improvements are presented in with the location of each project shown in Figures 8-1 and 8-2. Each recommendation includes a conceptual cost estimate for construction as shown in Tables 8-1, 8-2 & 8-3.

Unit costs for the construction cost estimates are based on conceptual level engineering. Sources used to estimate construction costs include:

- 1. "Means Heavy Construction Cost Data, 2013"
- 2. Price quotes from equipment suppliers
- 3. Recent construction bids for similar work

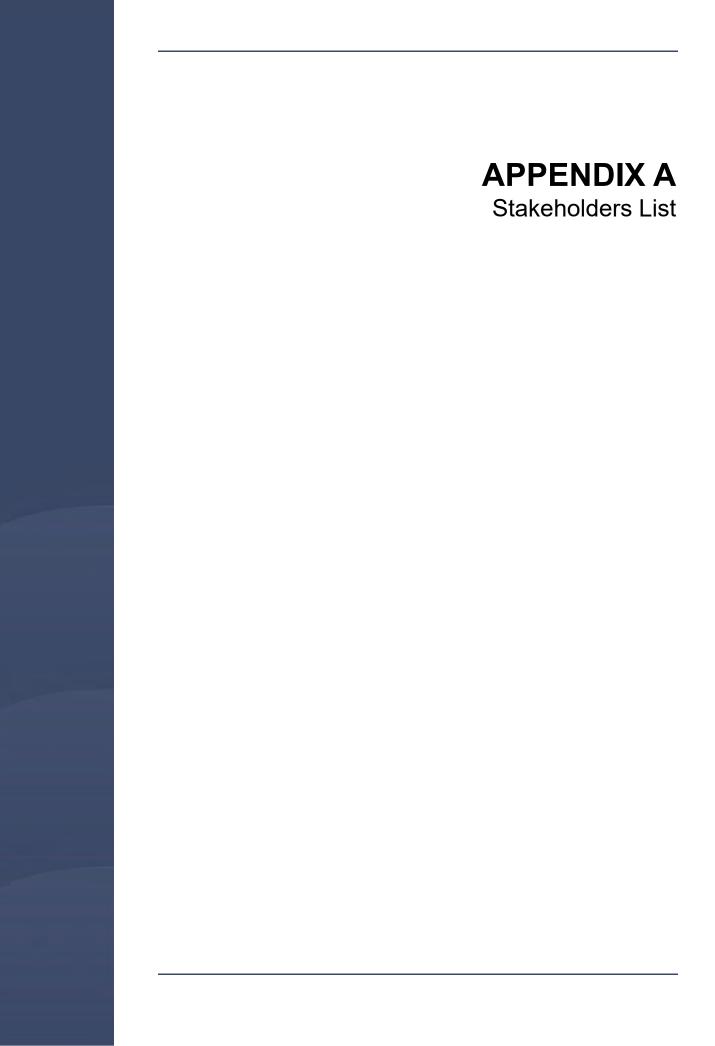
All costs are presented in 2016 dollars. Recent price and economic trends indicate that future costs are difficult to predict with certainty. Engineering cost estimates provided in this study should be regarded as conceptual level for use as a planning guide. Only during final design can a definitive and more accurate estimate be provided for each project. A cost estimate calculation for each project is provided in the Appendices.

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Bear River Water Conservancy District Master Plan Stakeholders List Stakeholder Agencies

Agency

Contact Person

Brian Carver

Bear River Association of Governments Bear River Association of Governments Box Elder County Economic Development Box Elder County Planning Bird Refuge
Cache County
Jordan Valley Water Conservancy District
NRCS
PacifiCorp
PacifiCorp
Rep. Lee Perry
Rep. Pete Knudson
Rep. Scott Sandal
Utah Department of Environmental Quality
Utah Division of Drinking Water
Utah Division of Drinking Water
Utah Division of Water Resources
Utah Division of Water Resources
Utah State Dept. of Agriculture
Weber Basin Water Conservancy District
Weber Basin Water Conservancy District
Weber Basin Water Conservancy District

Zac Covington Mitch Zundel Scott Lyons Bob Barrett Bob Fotheringham Richard Bay Dave Brown Claudia Conder Conley Baldwin Walt Baker Marie Owens Michael Grange Eric Millis

Eric Millis Todd Adams LuAnne Adams Taige Flint Mark Anderson Scott Paxman Bear River Water Conservancy District Master Plan Stakeholders List Water Suppliers

Water Supplier	Contact Person
ACME Water Company	Kendall Morris
Bothwell Cemetery and Water Company	Jay Christensen
Brigham City Public Works	Tyler Pugsley
Cedar Ridge Subdivision	David Thompson
Coleman Trailer Court	Gary Coleman
Corinne City	Kelly Nicholas
Deweyville Town	Nate Spackman
Elwood Town	Steven Woerner
Honeyville City	Mayor Dave Forsgren
Hot Springs Trailer Court	Dan Dimmick
Howell Town	Mayor Craig Hawkes
Mantua Town	Mayor Harper Johnson
Park Valley	Jay Carter
Perry City	Greg Westfall
Plymouth Town	Wes Udy
Portage Town	Grant Smith
Riverside North Garland Water Company	Alan Anderson
South Willard Water Company	Lance Lewis
Sunset Park	Blaine Anderson
Thatcher Penrose Service District	Russ Howe
Tremonton City	Paul Fulgham
UKON Water Company	Larry Hess
West Corinne Water Company	Chad Hardy
Willard City	Jared Profasier
Willow Creek Water Company	Alton Veibell

APPENDIX B Water Supply Analyses

1 POPULATION AND IRRIGATED ACREAGE DATA:	2015	2020	2030	2040	2050	2060
2 # Units in Service Area	344	372	436	512	666	866 CONNECTION
3 # Acres of Outside Irrigation per Unit	0.04	0.04	0.04	0.04	0.04	0.04 ACRES/CONN
4 Total # Acres of Outside Irrigation for the System	14.19	15.34	18.00	21.13	27.47	35.71 ACRES
5 SOURCE REQUIREMENTS						
6 Annual Indoor Usage = 146,000 Gal/Year/Connection	154	167	196	230	298	388 ACRE FEET
7 Annual Outdoor Usage = 1.87 Acre Feet/Irrigated Acre	27	29	34	40	51	67 ACRE FEET
8 Total Annual Usage	181	195	229	269	350	455 ACRE FEET
9 Peak Day Indoor Demand = 800 Gal./Day/Connection	275,200	297,510	349,167	409.792	532,730	692,549 GAL/DAY
0 Peak Day Outdoor Demand = 3.96 Gpm/Irrigated Acre	80,917	87,477	102,665	120,491	156,639	203,630 GAL/DAY
1 Total Peak Day Demand	356,117	384,987	451,832	530,284	689,369	896,179 GAL/DAY
2 (Gallons per Minute)	247.30	267	314	368	479	622 GPM
3 STORAGE REQUIREMENTS						
4 Indoor Requirement = 400 Gal/Connection	137,600	148,755	174,583	204,896	266,365	346.275 GALLONS
5 Outside Irrigation Requirement = 2,848 Gal/Irrigated Acre	40,413	43,689	51,275	60,178	78,231	101,701 GALLONS
6 Fire Storage (500 gpm for 1/2 hour)	15,000	15,000	15,000	15,000	15,000	15,000 GALLONS
7 Emergency Storage, 10%	17,801	19,244	22,586	26,507	34,460	44,798 GALLONS
8 Total Storage (Rounded)	210,000	230,000	260,000	310,000	390,000	510,000 GALLONS
9 DISTRIBUTION SYSTEM REQUIREMENTS	210,000	200,000	200,000	010,000	000,000	010,000 GALLONO
0 Peak Hour Indoor Demand = 10.8(N^.64); N = # Connections	454	477	528	585	692	819 GPM
1 Peak Hour Outside Demand = 7.92 Gpm/Irrigated Acre	112	121	143	167	218	283 GPM
2 Total Peak Hour Demand – 7.52 Oph/Imgated Acte	566	598	671	753	910	1,102 GPM
3 ADDITIONAL SOURCE CAPACITY NEEDED	500	530	0/1	155	310	1,102 61 10
4 Physical Source Capacity on Peak Day Basis	0	0	0	0	0	0 Gallon/Minute
5 Physical Source Capacity on Annual Volume Basis	0	0	0	0	0	0 AcreFeet/Yea
6 Water Rights Source Capacity on Annual Volume Basis	0	0	0	0	0	0 AcreFeet/Yea 0 Gallon/Minute
	0	0	0	0	0	
7 Water Rights Source Capacity on Annual Volume Basis 8 ADDITIONAL STORAGE CAPACITY NEEDEL	U	0	0	U	0	0 AcreFeet/Yea
9 Storage Capacity Needed	10,000	30,000	60,000	110,000	190,000	310,000 Gallons
					190,000	510,000 Gallons
	stantaneous Capacit	y Ann on/Minute	ual Volume Capaci	Feet/Year		
1 Combined Flow From Springs - Low annual flow 2002 2 Well #1		on/Minute		e Feet/Year		
3 Well #2	450 Gall	on/Minute	363 Acre	e Feet/Year		
	040.0-1	on/Minute				
5 Total Peak Day Sources		on/Minute				
6 Safety Factor	1.25	A.C		E 10/		
7 Total Peak Day Sources with Safety Factor	757 Gall	on/Minute	814 Acre	e Feet/Year		
8 EXISTING WATER RIGHTS SOURCE CAPACITY	050 0 "		450 1	E+0/		
9 Chokecherry and Other Springs		on/Minute		Feet/Year		
0 Well #1 - 29-1857 (a37369)		on/Minute		Feet/Year		
1 Well #2 - 29-4256 (a37370)	4/6 Gall	on/Minute	288 Acre	e Feet/Year		
2						
3 Total Peak Day Sources	1,148 Gall	on/Minute				
4 Safety Factor	1.25					
	918 Gall	on/Minute	1,029 Acre	Feet/Year		
5 Total Peak Day Sources with Safety Factor						
5 Total Peak Day Sources with Safety Factor 6 EXISTING STORAGE CAPACITY						
5 Total Peak Day Sources with Safety Factor 6 EXISTING STORAGE CAPACITY 7 ACME Reservoir	200,000 Gall	ons				
5 Total Peak Day Sources with Safety Factor 6 EXISTING STORAGE CAPACITY 7 ACME Reservoir 8						
5 Total Peak Day Sources with Safety Factor 6 EXISTING STORAGE CAPACITY 7 ACME Reservoir 8 9 Total Storage	200,000 Gall					
5 Total Peak Day Sources with Safety Factor 6 EXISTING STORAGE CAPACITY 7 ACME Reservoir 8 9 Total Storage 0 (ADDITIONAL CONNECTIONS SERVICEABLE WITH EXISTING CA	200,000 Gall	ons				
5 Total Peak Day Sources with Safety Factor 6 EXISTING STORAGE CAPACITY 7 ACME Reservoir 8 9 Total Storage	200,000 Gall	ons				
5 Total Peak Day Sources with Safety Factor 6 EXISTING STORAGE CAPACITY 7 ACME Reservoir 8 9 Total Storage 0 (ADDITIONAL CONNECTIONS SERVICEABLE WITH EXISTING CA	200,000 Gall	ons nections				
5 Total Peak Day Sources with Safety Factor 6 EXISTING STORAGE CAPACITY 7 ACME Reservoir 8 Total Storage 0 ADDITIONAL CONNECTIONS SERVICEABLE WITH EXISTING CA 1 # based on Peak Day Physical Source Capacity 2 # based on Annual Physical Source Capacity	200,000 Gall PACITY 709 Con	ons nections nections				
5 Total Peak Day Sources with Safety Factor 6 EXISTING STORAGE CAPACITY 7 ACME Reservoir 8 Total Storage 9 Total Storage 0 ADDITIONAL CONNECTIONS SERVICEABLE WITH EXISTING CA 1 # based on Peak Day Physical Source Capacity	200,000 Gall PACITY 709 Con 1,206 Con	ons nections nections nections				

Line 3: Based on average water use in 2014-2015 with average lawn size calculated to match total water use per residential connection. Lines 5-18: Water Demands calculated based on Utah Division of Drinking Water Standards assuming Zone 4 for outside watering requirements. Lines 24-35: When data was not available for either the annual limit (ac-ft/yr) or the maximum flow rate (cfs or gpm), the other value was obtained by a straight units conversion.

Lines 24-41: Existing source and storage data has been gathered from the following sources of information: interviews with the water agency, sanitary surveys, water rights information and Division of Drinking Water records.

Tecl	nnical data for BRWCD Beaver Dam						
1	POPULATION AND IRRIGATED ACREAGE DATA:	2015	2020	2030	2040	2050	2060
2	# Units in Service Area	23	25	29	34	44	57 CONNECTIONS
3	# Acres of Outside Irrigation per Unit	0.01	0.01	0.01	0.01	0.01	0.01 ACRES/CONN.
4	Total # Acres of Outside Irrigation for the System	0.34	0.37	0.43	0.51	0.66	0.86 ACRES
F	SOURCE REQUIREMENTS						
	Annual Indoor Usage = 146,000 Gal/Year/Connection	10	11	13	15	20	26 ACRE FEET
-	Annual Outdoor Usage = 1.87 Acre Feet/Irrigated Acre	1	1	10	1	1	2 ACRE FEET
ŝ	Total Annual Usage	11	12	14	16	21	27 ACRE FEET
	Peak Day Indoor Demand = 800 Gal./Day/Connection	18,400	19.730	23,156	27.176	35,329	45.928 GAL/DAY
10		1,958	2,099	2.464	2,891	3,759	4.886 GAL/DAY
11		20,358	21,829	25,619	30,068	39,088	50,815 GAL/DAY
12		20,338	21,029	23,019	21	27	35 GPM
		14	15	10	21	21	35 GFIM
		0.000	0.005	44 570	40 500	47.005	00.004 0.011 0.010
	Indoor Requirement = 400 Gal/Connection	9,200	9,865	11,578	13,588	17,665	22,964 GALLONS
	Outside Irrigation Requirement = 2,848 Gal/Irrigated Acre	978	1,048	1,230	1,444	1,877	2,440 GALLONS
	Fire Storage (1000 gpm for 1 hour)	60,000	60,000	60,000	60,000	60,000	60,000 GALLONS
	Emergency Storage, 10%	1,018	1,091	1,281	1,503	1,954	2,540 GALLONS
18		70,000	70,000	70,000	80,000	80,000	90,000 GALLONS
19							
20	Peak Hour Indoor Demand = 10.8(N^.64); N = # Connections	80	84	93	103	122	144 GPM
21	Peak Hour Outside Demand = 7.92 Gpm/Irrigated Acre	3	3	3	4	5	7 GPM
22	2 Total Peak Hour Demand	83	87	96	107	127	151 GPM
23	ADDITIONAL SOURCE CAPACITY NEEDED	0.640273454	0.686558282	0.805765396	0.945670442	1.229371574	1.598183047
	Physical Source Capacity on Peak Day Basis	0	0	0	0	5	13 Gallon/Minute
	Physical Source Capacity on Annual Volume Basis	0	0	0	0	0	0 AcreFeet/Year
	Water Rights Source Capacity on Peak Day Basis	Ő	Ő	õ	Ő	ŏ	0 Gallon/Minute
	Water Rights Source Capacity on Annual Volume Basis	0 0	Ő	0 0	ů 0	Ő	0 AcreFeet/Year
	ADDITIONAL STORAGE CAPACITY NEEDED	Ū	U	U	U	v	o Abiel cet real
	Storage Capacity Needed	0	0	0	0	0	0 Gallons
30	EXISTING PHYSICAL SOURCE CAPACITY	Instantaneous Capa	acitv A	Annual Volume Car	pacity		
	Lower East Spring (low flow 2016)		Sallon/Minute		cre Feet/Year		
	Lower West Spring (low flow 2016)	12 0	allon/Minute	19 A	cre Feet/Year		
33			Sallon/Minute		cre Feet/Year		
34		12 0		107	lore r cet r cui		
	Total Peak Day Sources	28.0	Gallon/Minute				
	Safety Factor	1.25	anon/minute				
37			allon/Minute	45 /	cre Feet/Year		
	EXISTING WATER RIGHTS SOURCE CAPACITY	22 0	allon/williute	43 /	ACIE FEEL/TEAL		
	Lower East Spring	224 0	Gallon/Minute	44 /	cre Feet/Year		
	Lower West Spring		Sallon/Minute		cre Feet/Year		
			Gallon/Minute		Acre Feet/Year		
41		69 6	ballon/ivinute	23 F	cre reet/rear		
42							
43			Sallon/Minute				
44		1.25					
45		235 G	Gallon/Minute	35 A	cre Feet/Year		
46							
47		200,000	Sallons				
48							
49	3	200,000 0	Gallons				
	ADDITIONAL CONNECTIONS SERVICEABLE WITH EXISTING						
	# based on Peak Day Physical Source Capacity		Connections				
	# based on Annual Physical Source Capacity		Connections				
	# based on Peak Day Water Rights Capacity		Connections				
	# based on Annual Water Rights Capacity		Connections				
55	# based on Storage Capacity	43 C	Connections				

Notes:

Line 3: Most users have access to secondary water. Average outdoor use is 650 sq ft per connection, based on 2013 - 2015 usage data.

Line 2... most users have access to secondary water. Average outdoor use is bot sq it per connection, based on 2013 - 2015 usage data. Lines 5-22: Water Demands calculated based on Utah Division of Drinking Water Standards assuming Zone 4 for outside watering requirements. Lines 30-48: When data was not available for either the annual limit (ac-ft/yr) or the maximum flow rate (cfs or gpm), the other value was obtained by a straight units conversion. Lines 30-48: Existing source and storage data has been gathered from the following sources of information: interviews with the water agency, sanitary surveys, water rights information and Division of Drinking Water records.

IPOPULATION AND RRIGATED ACREAGE DATA: 2015 2020 2030 2040 2050 2050 2H Units inService Area 118 131 154 200 2030 <	1001	inical data for Bothwell Cemetery & Water Co						
3 # Arcse of Outside Insignation per Unit 0.13 <t< td=""><td>1</td><td>POPULATION AND IRRIGATED ACREAGE DATA:</td><td>2015</td><td>2020</td><td>2030</td><td>2040</td><td>2050</td><td>2060</td></t<>	1	POPULATION AND IRRIGATED ACREAGE DATA:	2015	2020	2030	2040	2050	2060
4 Total # Acres of Outside Imgation for the System 14.75 10.40 19.24 25.02 32.52 4.228 ACRES 5 SOURCE RECONTREMENTS 6 Annual Outside Total Receive Feelting and Acre 16.00 177 152 ACRE FEET 7 Annual Outside Total Receive Feelting and Acre 28.31 36 47 6.1 79 ACRE FEET 7 Annual Outside Total Reak Care 84.10 10.43 10.01 27.036 ACRE FEET 10 Pask Day Didoor Demand = 30 Gall Commiting and Acre 84.10 193.504 100.733 142.206 185.448 241.006 27.3 355.66 GALDAY 11 Total Peak Day Demand 175.510 198.448 221.002 13.255 511.866 GALDAY 12 CorrActe RECOURRENTS 0 52.471 61.582 80.056 194.073 135.256 GALLONS 13 Total Reak Day Demand 172.00 52.471 61.582 80.056 194.073 135.256 GALLONS 14 Total Reak Day Demand 10.20 11.207.017 17.077 17.02 <td>2</td> <td># Units in Service Area</td> <td>118</td> <td>131</td> <td>154</td> <td>200</td> <td>260</td> <td>338 CONNECTIONS</td>	2	# Units in Service Area	118	131	154	200	260	338 CONNECTIONS
4 Total # Acres of Outside Imgation for the System 14.75 10.40 19.24 25.02 32.52 4.228 ACRES 5 SOURCE RECONTREMENTS 6 Annual Outside Total Receive Feelting and Acre 16.00 177 152 ACRE FEET 7 Annual Outside Total Receive Feelting and Acre 28.31 36 47 6.1 79 ACRE FEET 7 Annual Outside Total Reak Care 84.10 10.43 10.01 27.036 ACRE FEET 10 Pask Day Didoor Demand = 30 Gall Commiting and Acre 84.10 193.504 100.733 142.206 185.448 241.006 27.3 355.66 GALDAY 11 Total Peak Day Demand 175.510 198.448 221.002 13.255 511.866 GALDAY 12 CorrActe RECOURRENTS 0 52.471 61.582 80.056 194.073 135.256 GALLONS 13 Total Reak Day Demand 172.00 52.471 61.582 80.056 194.073 135.256 GALLONS 14 Total Reak Day Demand 10.20 11.207.017 17.077 17.02 <td>3</td> <td># Acres of Outside Irrigation per Unit</td> <td>0.13</td> <td>0.13</td> <td>0.13</td> <td>0.13</td> <td>0.13</td> <td>0.13 ACRES/CONN.</td>	3	# Acres of Outside Irrigation per Unit	0.13	0.13	0.13	0.13	0.13	0.13 ACRES/CONN.
S DURCE REQUIREMENTS Source Requirements 2 Annual Noticor Usage 14.80.00 Gal/vaer/Connection 53 59 69 90 117 152 ACRE FEET 7 Annual Outdoor Usage 14.80.00 Gal/vaer/Connection 94.00 106,442 123,164 106,135 2016,136 177 231 ACRE FEET 9 eakt Day Indoor Demand = 800 Gal/Gal/QaConnection 94,100 93,364 106,135 2016,135 241,686 ACRE FEET 10 eakt Day Ouddoo Demand - 200 Gal/Gal/Connection 94,100 93,364 106,135 221,02 273 355 GPM 11 Calloins per Minule) 123,97 139 162 210 273 355 GPM 13 TORAGE REQUIREMENTS 139 168,430 71,72 325,255 124,135 117,72 27,77 235 GALLONS 15 Outside Imigation Requirement - 240 Gal/connection 47,200 54,400 15,000 15,000 15,000 15,000 15,000 15,000 15,000 15,000 15,000 15,000 15,000 15,000 16,000 10,000 32,025 724,400								
6 Annual Indoor Usage = 146,000 Gal/Year/Connection 53 59 69 90 117 152 ACRE FEET Total Annual Usage 80 89 105 136 177 231 ACRE FEET Fact Annual Usage 80 89 105 136 177 231 ACRE FEET Peak Cay Indoor Demand = 306 Gpm/Inglied Acre 94,110 93,304 102,733 142,660 185,458 241,086 GALDAY 10 Peak Day Cutdoor Demand = 3.96 Gpm/Inglied Acre 94,110 133,004 102,773 39,1065 61,866 GALDAY (Callone per Minute) 123.97 138 162 210 273 33605 51,866 GALDAY (Callone per Minute) 123.97 138 162 210 273 33605 51,866 GALDAY (Callone per Minute) 123.97 138 162 210 273 33605 51,866 GALDAY (Callone per Minute) 123.97 138 162 210 273 33605 51,866 GALDAY (Callone per Minute) 123.97 138 162 210 273 356 GALLONS 15 Outside Inglaton Requirement = 2,84 Gal/Inglatel Acre 42,008 46,669 54,808 71,250 192,625 122,413 GALLONS 15 Outside Inglaton Requirement = 2,84 Gal/Inglatel Acre 42,008 46,669 54,808 71,250 192,625 122,413 GALLONS 16 Inco Storage 10% 10,000 15,000 15,000 15,000 12,000 27,000 GALLONS 17 Emergency Storage 10% 104,21 11,417 13,13 16,631 21,170 27,071 GALLONS 19 Distribution System FEQUERENTS 10 Peak Neur Indoor Demand = 10,8(M ² ,46;) + # Connections 229 245 271 321 378 449 GPM 21 Peak Neur Indoor Demand = 10,8(M ² ,46;) + # Connections 229 245 271 321 378 449 GPM 21 Peak Neur Indoor Demand = 10,8(M ² ,46;) + # Connections 229 245 271 321 199 257 335 GPM 22 Paylical Source Capacity on Peak Day Basis 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0								
7 Annual Outdoor Usage 1.87 Acc FeetT Total Annual Usage 80 31 36 47 61 79 ACRE FEET Total Annual Usage 80 9 Peak Day Indoor Demand = 800 Gal/Day/Connection 94,400 104,942 123,144 160,113 205,146 227,0530 GALDAY 10 Peak Day Outdoor Demand = 3.09 Gal/Day/Connection 94,400 109,739 142,660 165,453 241,006 GALDAY 11 Total Peak Day Demand 178,510 188,446 232,002 302,073 333,005 511,686 GALDAY 13 TORAGE REQUIREMENTS 42,006 46,669 54,882 104,073 115,505 54,410.045 14 Torage 10% Total Storage (300 gm for 1/2 bur) 10,000 110,000 150,000 15,000 15,000 15,000 120,000 270,000 GALLONS 15 Distribution Moor Demand 10,817,641,11 × 47 13,130 16631 21,170 227,000 6ALLONS 10 Distribution Moor Demand 10,817,641,11 × 47 13,030 152 198 258 353 GPM 21 Peak Hour Indoor Demand 10,817,641,11 × 47 </td <td></td> <td></td> <td>53</td> <td>59</td> <td>69</td> <td>90</td> <td>117</td> <td>152 ACRE FEET</td>			53	59	69	90	117	152 ACRE FEET
8 Total Annual Usage 80 89 105 136 177 231 ADRE FEET 9 Peak Day Indoor Demand = 3.96 Gpmil/ngited Acre 84,110 93,504 100,793 142,660 1165,458 241,096 CALDAY 10 Peak Day Outdoor Demand = 3.96 Gpmil/ngited Acre 84,110 93,504 100,793 142,660 1165,458 241,096 CALDAY 11 Colladian per Minute) 123,87 138 162,217 335,654 ALDAY 15 Colladia Intragenery Minute) 123,87 138 162,217 91,858 ALDAY 15 Colladia Intragenery Minute) 123,87 138 162,217 91,858 ALDAY 15 Colladia Intragenery Minute) 123,870 120,005 110,000 150,000 110,000 120,000 210,000 210,000 210,000 210,000 210,000 210,000 210,000 210,000 210,000 210,000 210,000 210,000 210,000 210,000 210,000 210,000 210,000 210,000								
9 Peak Day Indoor Demand = 500 Gal./Day/Connection 94.400 104.42 123.164 160.113 201.46 270.590 GAUDAY 10 Peak Day Outdoor Demand = 3.96 Grun/fragted Are 94.100 93.204 109.730 142.680 185.488 241.096 GAUDAY 11 Colalions per Minute) 123.97 138 162 210 273 393.605 511.886 GAUDAY 13 STORAGE REQUIREMENTS 100.01 46.689 71.200 135.295 GAULONS 14 Indoor Requirement = 4.00 Gal/Connection 47.200 52.471 61.582 80.056 104.072 135.295 GAULONS 15 Unlable Infigation Requirement = 2.045 Gal/Infigated Acre 42.000 140.201 11.1000 130.000 120.000 21.000 21.070 21.170 121.770 70.71 GAULONS 16 Distribution Brand = 10.8(h* 64), N = # Connections 22.9 245 271 321 379 449 GPM 21 Pask Hour Indoor Demand = 10.8(h* 64), N = # Connections 22.9 245 0.773.7508 0.9221842 1.19844947 1.594	, ,							
10 Peak Day Cutdoor Demand = 3.96 G/m/End Ker 64,110 93.504 109.739 142.680 168,488 241.096 G/L/DAY 12 Callons per Minute) 123.97 138 162 210 273 335.605 13 TORAGE RECUIREMENTS 162 210 273 335.505 GMU 14 Indoor Requirement + 400 Gal/Connection 47,200 52.471 61,882 80,056 104.073 135.295 GALLONS 15 Dutside Impaid = 2,486 Gal/Ingiated Acre 42,000 46,0696 54,808 71,250 22,625 120,413 GALLONS 16 Fire Storage (300 gmt fr/12 hour) 10,000 110,000 15,000 15,000 15,000 15,000 210,000 27,000 GALLONS 17 Emergency Storage (1% Total Storage (Rounded) 110,000 110,000 170,000 210,000 27,000 GALLONS 10 Data Storage (Acre Recurrement = 10,50%,64), N ashed Arce 217 218 238 346, GRM 21 Data Storage Capacity non Annual Volume Basis 0 0	0							
11 Total Peak Day Demand 178,510 198,446 223,902 302,773 393,605 511,686 GAUDAY 13 STORAGE RECURRENTS 210 273 355 GPM 14 Indoor Requirement - 4.040 GaU/Connection 47,200 52,471 61,582 80,056 104,073 135,295 GAULONS 15 Outside Irrigation Requirement - 2,048 GaUringated Acre 42,008 46,669 54,808 71,250 92,625 120,413 GAULONS 16 Fire Storage (500 gmt or 1/2 hour) 15,000 15,000 15,000 15,000 15,000 15,000 15,000 15,000 15,000 16,000 120,000 27,000 6,4LONS 19 DSTRIBUTION SYSTEM REQUIREMENTS 200 10,000 110,000 130,000 170,000 21,0000 27,000 6,4LONS 20 Deat Hour Outside Irrigated Acre 117 130 152 198 283 335 GPM 21 Demand = 7.52 Gpmi/irrigated Acre 117 0,60428745 0,70377508 0,9221842 1.1984497 1.55								
12 (Gallons per Minute) 123 97 138 162 210 273 355 GPM 14 Indoor Requirement = 400 Gal/Connection 47,200 52,471 61,882 80,056 104,4073 135,295 GALLONS 15 Outside Impaint Requirement = 2,848 Gal/Ingled Acre 42,008 46,669 54,808 71,250 126,413 135,295 GALLONS 16 Fire Storage (500 gm for 1/2 hour) 15,000 15,000 15,000 61,500 15,000 64,010 10,000 130,000 170,000 210,000 270,000 GALLONS 17 Emergency Storage 10% Total Storage (Rounded) 110,000 130,000 170,000 210,000 270,000 GALLONS 19 Distribution System REQUIREMENTS Total Peak Hour Indoor Demand = 10,8(N-64); N = # Connections 229 245 271 321 379 449 GPM 21 Peak Hour Undoor Demand = 10,8(N-64); N = # Connections 209 0 0 0 0 20 20 245 1375 003/570 0.604428/45 0.7093/5708 0.9218/441 156,9408								
13 STORAGE REQUIREMENTS 41 Indoor Requirement = 2,084 Gal/Irrigated Acre 42,008 64,669 94,808 71,250 92,625 120,413 GALLONS 15 Dusted Ingation Requirement = 2,084 Gal/Irrigated Acre 42,008 46,669 94,808 71,250 92,625 120,413 GALLONS 16 Fire Storage (500 gm of 12, bur) 15,000 15,000 15,000 15,000 15,000 15,000 270,000 CALLONS 19 IDSTRIBUTION SYSTEM REQUIREMENTS 10,421 11,417 13,139 16,631 21,170 27,071 GALLONS 19 DETRIBUTION SYSTEM REQUIREMENTS 10,000 110,000 130,000 110,000 270,000 GALLONS 20 Total Peak Hour Dustined Acre 117 130 152 198 258 335 GPM 21 Peak Hour Dustine Deak Day Basis 0 0 0 42 11,98249434 1.55849843 11,98249843 12,72 Galion-Minute 23 ADDITIONAL SOURCE CAPACITY NEEDED 0.543708577 0.60442745								
14 Indoor Requirement = 400 Gal/Connection 47.200 52.471 61.582 80.056 104.073 135.295 GALLONS 15 Outside Imrigation Requirement = 2,486 Gal/Imrigated Acre 42.008 46.699 54.808 77.1250 92.625 120.413 GALLONS 16 Fire Storage (500 gm for 12 hour) 15.000 120.000 270.000 GALLONS 15.000 15.000 120.000 270.000 GALLONS 15.000 15.000 16.000 10.000 16.000 16.000 16.000 16.000 16.000 16.000 16.000			123.97	138	162	210	213	300 GPINI
15 Outside Irrigation Requirement = 2, 248 Gal/Irrigated Acre 42,008 46,699 54,608 71,250 92,625 120,413 GALLONS 16 Fire Storage (500 gm for 12 hour) 15,000 <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>								
16 Fire Storage (500 gpm for 1/2 hour) 15.000 15.000 15.000 15.000 15.000 15.000 15.000 15.000 15.000 15.000 15.000 210.000 270.000 GALLONS 18 Total Storage (Rounded) 110.000 110.000 130.000 170.000 210.000 270.000 GALLONS 20 Paak Hour Indoor Demand = 10 & R/W GAL). N = # Onnections 229 245 271 321 379 440 GPM 21 Paak Hour Indoor Demand = 10 & R/W GAL). N = # Onnections 229 245 271 321 379 440 GPM 21 Paak Hour Indoor Demand = 10 & R/W GAL 732 Gpm (Tingtaget Are 117 130 15.2 138 258 336 GPM 23 ADDITIONAL SOURCE CAPACITY NEEDED 0.543708577 0.604428745 0.709375708 0.92218842 1.19844947 1.55849843 24 Physical Source Capacity on Annual Volume Basis 0 0 0 0 0 2 2.67676et/Year 25 Karter Rights Source Capacity on Annual Volume Basis 0 0 0 0 0 0 0								
17 Emergency Storage 10% 10,421 11,417 13,139 16,631 21,170 27,071 GALLONS 19 DisTRIBUTION SYSTEM REQUIREMENTS 110,000 110,000 120,000 210,000 <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>								
Total Storage (Rounded) 110.000 130.000 170.000 270.000 CARD 10 Distriction SYSTEM ReQuireEMENTS 229 245 271 321 379 440 GPM 210 Peak Hour Indoor Demand = 10.8(MY-64); N = # Connections 229 245 271 321 379 440 GPM 210 Peak Hour Undoor Demand = 7.92 Gpm/Ingrated Acre 117 130 152 198 258 335 GPM 22 Paak Hour Undido Demand = 7.92 Gpm/Ingrated Acre 117 130 152 198 244 519 637 784 GPM 23 ADDITONAL SOURCE CAPACITY MEEDED 0.543708577 0.604428745 0.709375708 0.92218842 1.198844947 1.55849843 24 Physical Source Capacity on Peak Day Basis 0 0 0 0 0 22 24 CarceFreet/Year 27 Water Rights Source Capacity on Peak Day Basis 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0<	16	Fire Storage (500 gpm for 1/2 hour)		15,000	15,000			15,000 GALLONS
19 Distribution Vester Recoursements 22 245 271 321 379 449 GPM 20 Peak Hour Outside Demand = 0.8(N* 64) N = # Connections 117 130 152 198 258 335 GPM 21 Peak Hour Outside Demand = 7.92 Gpm/Imigated Acre 117 130 152 198 258 335 GPM 22 ADDITIONAL SOURCE CAPACITY NEEDED 0.543708577 0.604428745 0.709375708 0.92218842 1.198844947 1.55849843 24 Physical Source Capacity on Peak Day Basis 0 0 0 0 0 22 245 127 Gailon/Minute 24 Physical Source Capacity on Annual Volume Basis 0 0 0 0 0 22 Acrefeet/Year 250 Storage Capacity on Annual Volume Basis 0 0 0 0 0 40 Acrefeet/Year 28 ADDITIONAL STORAGE CAPACITY NEEDED 0 0 0 40 Acrefeet/Year 29 Storage Capacity Needed 105 Gailon/Minute 85 Acre Feet/Year 40 Acrefeet/Year 29 Btwite Nith Store Capacity Annual Volume Basis 0 0<	17	Emergency Storage 10%	10,421	11,417	13,139	16,631	21,170	27,071 GALLONS
19 DSTRIBUTION SYSTEM REQUIREMENTS 20 Peak Hour Indoor Demand = 10.8(N 6/N) N = # Connections 229 245 271 321 379 449 GPM 21 Peak Hour Outside Demand = 7.02 Gpm/Imrjated Acre 117 130 152 198 258 335 GPM 22 Total Peak Hour Demand 346 375 424 519 637 784 GPM 24 Physical Source Capacity on Peak Day Basis 0 0 0 45 127 Gallon/Minute 24 Physical Source Capacity on Annual Volume Basis 0 0 0 0 32 Acrefeet/Year 25 Water Rights Source Capacity on Annual Volume Basis 0 0 0 0 0 32 Acrefeet/Year 28 ADDTIONAL STORAGE CAPACITY NEEDED 0 0 0 0 0 0 40 Acrefeet/Year 29 Storage Capacity Needd 105 Gallon/Minute 85 Acre Feet/Year 40,000 Gallons 40,000 Gallons 30 EXISTING CHAPACITY NEEDED 0 0 40,000 80,000 140,000 Gallons 30 EXISTING PHYSICAL SOURCE CAPACITY Instantaneous	18	Total Storage (Rounded)	110,000	110,000	130,000	170,000	210,000	270,000 GALLONS
20 Peak Hour Indoor Demand = 10.8 (M)* 64); N = # Connections 229 245 271 321 379 449 GPM 21 Peak Hour Undoor Demand = 7.8 2 Gm/Inrigated Acre 117 130 152 198 258 335 GPM 22 ADDITIONAL SOURCE CAPACITY NEEDED 0.543708577 0.604428745 0.709375708 0.9221842 1.198844947 1.155849843 24 Physical Source Capacity on Pack Day Basis 0 0 0 0 45 127 Gallon/Minute 25 Mysical Source Capacity on Annual Volume Basis 0	19	DISTRIBUTION SYSTEM REQUIREMENTS						
121 Peak Hour Outside Demand = 7.92 Gpm/Irrigated Acre 117 130 152 198 258 335 GPM 22 Total Peak Hour Demand 346 375 424 519 637 784 4GPM 23 ADDITIONAL SOURCE CAPACITY NEEDED 0.543708577 0.604428745 0.709375708 0.92218842 1.198844947 1.55649843 24 Physical Source Capacity on Annual Volume Basis 0 0 0 0 32 AcreFeet/Year 26 Water Rights Source Capacity on Annual Volume Basis 0 0 0 0 0 0 0.40 AcreFeet/Year 28 Storage Capacity needed 0 0 0 0 0 0 40.000 80.000 140.000 Gailons 29 Storage Capacity Needed 0 0 0 0 0 0 40.000 80.000 140.000 Gailons 30 EXISTING PHYSICAL SOURCE CAPACITY NEEDED 0 0 0 0.000 140.000 Gailons 30 25 32 32 32 32 33 33 34 34 34 34 34			229	245	271	321	379	449 GPM
22 Total Peak Hour Demand 346 375 424 519 637 784 GPM 23 ADDITTOAL SOURCE CAPACITY NEEDED 0.543708577 0.604428745 0.709375708 0.92218842 1.198844947 1.55849843 24 Physical Source Capacity on Peak Day Basis 0 0 0 0 45 1.27 Gallon/Minute 25 Physical Source Capacity on Annual Volume Basis 0 0 0 0 0 0.0 Gallon/Minute 27 Water Rights Source Capacity on Annual Volume Basis 0 0 0 0 0.0 Gallon/Minute 28 DottOnAL STORAGE CAPACITY NEEDED 0 0 0 0 40.AcreFeet/Year 28 Storage Capacity Needed 0 0 0 0 40.000 6allons 21 Instantaneous Capacity Annual Volume Capacity Annua								
23 ADDITIONAL SOURCE CAPACITY NEEDED 0.543708577 0.604428745 0.709375708 0.92218842 1.198844947 1.55849843 24 Physical Source Capacity on Annual Volume Basis 0 <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>								
24 Physical Source Capacity on Peak Day Basis 0 0 0 0 0 127 Callon/Minute 25 Physical Source Capacity on Annual Volume Basis 0 <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>								
25 Physical Source Capacity on Annual Volume Basis 0								
26 Water Rights Source Capacity on Peak Day Basis 0 <						-		
72 Water Rights Source Capacity on Annual Volume Basis 0 0 0 0 40 AcreFeet/Year 28 ADDITIONAL STORAGE CAPACITY NEEDED 0 0 40,000 80,000 140,000 Gallons 30 EXISTING PHYSICAL SOURCE CAPACITY Instantaneous Capacity Annual Volume Capacity Annual Volume Capacity 30 EXISTING PHYSICAL SOURCE CAPACITY Instantaneous Capacity Annual Volume Capacity 31 West Well 105 Gallon/Minute 85 Acre Feet/Year 32 Existing Physical Sources 28 Gallon/Minute 0 Acre Feet/Year 33 BRWCD Meter Station on Frontage Road 0 Gallon/Minute 0 Acre Feet/Year 34 BRWCD Meter Station on 10000 West 70 Gallon/Minute 25 Acre Feet/Year 35 Total Peak Day Sources 285 Gallon/Minute 198 Acre Feet/Year 35 Total Peak Day Sources with Safety Factor 1.25 125 36 Total Peak Day Sources 449 Gallon/Minute 191 Acre Feet/Year 40 Both Wells #1 & #2 - 29-1138 449 Gallon/Minute 191 Acre Feet/Year 41 Total Peak Day Sources with Safety Factor 1.25 126								
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ADDITIONAL CONNECTIONS SERVICEABLE WITH EXISTING CAPACITY 51 # based on Peak Day Physical Source Capacity 99 Connections 52 # based on Annual Physical Source Capacity 173 Connections 53 # based on Peak Day Water Rights Capacity 224 Connections 54 # based on Annual Water Rights Capacity 162 Connections	30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47	EXISTING PHYSICAL SOURCE CAPACITY I West Well East Well BRWCD Meter Station on Frontage Road BRWCD Meter Station on 10000 West Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Both Wells #1 & #2 - 29-1138 Total Peak Day Sources Total Peak Day Sources Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Both Wells #1 & #2 - 29-1138 Total Peak Day Sources Safety Factor Exist Storage Reservoir Exist Storage Reservoir	nstantaneous Cap 105 110 0 70 285 1.25 228 449 449 1.25 359 100,000	cacity Gallon/Minute Gallon/Minute Gallon/Minute Gallon/Minute Gallon/Minute Gallon/Minute Gallon/Minute Gallon/Minute Gallons		nnual Volume Ca 85 / 89 / 0 / 25 / 198 / 191 /	apacity kore Feet/Year kore Feet/Year kore Feet/Year kore Feet/Year kore Feet/Year kore Feet/Year	140,000 Gallons
51 # based on Peak Day Physical Source Capacity 99 Connections 52 # based on Annual Physical Source Capacity 173 Connections 53 # based on Peak Day Water Rights Capacity 224 Connections 54 # based on Annual Water Rights Capacity 162 Connections	300 311 322 333 344 355 366 377 388 399 400 411 422 433 444 455 466 477 488	EXISTING PHYSICAL SOURCE CAPACITY I West Well East Well BRWCD Meter Station on Frontage Road BRWCD Meter Station on 10000 West Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Both Wells #1 & #2 - 29-1138 Total Peak Day Sources Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Both Wells #1 & #2 - 29-1138 Total Peak Day Sources Safety Factor EXISTING STORAGE CAPACITY West Storage Reservoir Exist Storage Reservoir	nstantaneous Cap 105 110 0 70 285 1.25 228 449 449 1.25 359 100,000 30,000	acity Gallon/Minute Gallon/Minute Gallon/Minute Gallon/Minute Gallon/Minute Gallon/Minute Gallon/Minute Gallon/Minute Gallons Gallons Gallons		nnual Volume Ca 85 / 89 / 0 / 25 / 198 / 191 /	apacity kore Feet/Year kore Feet/Year kore Feet/Year kore Feet/Year kore Feet/Year kore Feet/Year	140,000 Gallons
52 # based on Annual Physical Source Capacity173 Connections53 # based on Peak Day Water Rights Capacity224 Connections54 # based on Annual Water Rights Capacity162 Connections	300 311 3223 3334 355 366 377 388 399 400 411 422 433 399 400 411 422 433 444 455 466 477 488 499	EXISTING PHYSICAL SOURCE CAPACITY I West Well BRWCD Meter Station on Frontage Road BRWCD Meter Station on 10000 West I Total Peak Day Sources Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Both Wells #1 & #2 - 29-1138 Total Peak Day Sources Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Both Wells #1 & #2 - 29-1138 Total Peak Day Sources Safety Factor EXISTING STORAGE CAPACITY West Storage Reservoir East Storage Reservoir East Storage Reservoir	nstantaneous Cap 105 110 0 70 285 1.25 228 449 449 1.25 359 100,000 30,000 130,000	acity Gallon/Minute Gallon/Minute Gallon/Minute Gallon/Minute Gallon/Minute Gallon/Minute Gallon/Minute Gallon/Minute Gallons Gallons Gallons		nnual Volume Ca 85 / 89 / 0 / 25 / 198 / 191 /	apacity kore Feet/Year kore Feet/Year kore Feet/Year kore Feet/Year kore Feet/Year kore Feet/Year	140,000 Gallons
53 # based on Peak Day Water Rights Capacity224 Connections54 # based on Annual Water Rights Capacity162 Connections	300 311 3223 3334 355 366 377 388 399 400 411 422 433 399 400 411 422 434 445 466 477 488 499 500	EXISTING PHYSICAL SOURCE CAPACITY I West Well Bast Well BRWCD Meter Station on Frontage Road BRWCD Meter Station on 10000 West Total Peak Day Sources Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Both Wells #1 & #2 - 29-1138 Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING STORAGE CAPACITY West Storage Reservoir East Storage Reservoir Total Storage ADDITIONAL CONNECTIONS SERVICEABLE WITH EXISTING C	nstantaneous Cap 105 110 0 70 285 1.25 228 449 449 1.25 359 100,000 30,000 130,000	acity Gallon/Minute Gallon/Minute Gallon/Minute Gallon/Minute Gallon/Minute Gallon/Minute Gallon/Minute Gallon/Minute Gallons Gallons Gallons		nnual Volume Ca 85 / 89 / 0 / 25 / 198 / 191 /	apacity kore Feet/Year kore Feet/Year kore Feet/Year kore Feet/Year kore Feet/Year kore Feet/Year	140,000 Gallons
54 # based on Annual Water Rights Capacity 162 Connections	300 311 322 333 344 355 366 377 388 399 400 411 422 433 444 455 466 477 478 499 500 51	EXISTING PHYSICAL SOURCE CAPACITY I West Well East Well BRWCD Meter Station on Frontage Road BRWCD Meter Station on 10000 West Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Both Wells #1 & #2 - 29-1138 Total Peak Day Sources with Safety Factor Total Peak Day Sources with Safety Factor EXISTING STORAGE CAPACITY West Storage Reservoir Exist Storage Reservoir Total Storage ADDITIONAL CONNECTIONS SERVICEABLE WITH EXISTING C # based on Peak Day Physical Source Capacity Total Storage	nstantaneous Cap 105 110 0 70 285 1.25 228 449 449 1.25 359 100,000 30,000 130,000 28PACITY 99	acity Gallon/Minute Gallon/Minute Gallon/Minute Gallon/Minute Gallon/Minute Gallon/Minute Gallon/Minute Gallon/Minute Gallon/Minute Gallons Gallons Gallons Connections		nnual Volume Ca 85 / 89 / 0 / 25 / 198 / 191 /	apacity kore Feet/Year kore Feet/Year kore Feet/Year kore Feet/Year kore Feet/Year kore Feet/Year	140,000 Gallons
	300 311 322 333 344 355 366 377 388 399 400 411 422 433 444 455 466 474 484 99 500 511 52	EXISTING PHYSICAL SOURCE CAPACITY I West Well East Well BRWCD Meter Station on Frontage Road BRWCD Meter Station on 10000 West Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Both Wells #1 & #2 - 29-1138 Total Peak Day Sources Safety Factor EXISTING STORAGE CAPACITY Both Storage Reservoir Existing STORAGE CAPACITY West Storage Reservoir Existing Storage Reservoir East Storage Reservoir Total Storage ADDITIONAL CONNECTIONS SERVICEABLE WITH EXISTING C # based on Annual Physical Source Capacity	nstantaneous Cap 105 110 0 70 285 1.25 228 449 449 1.25 359 100,000 30,000 130,000 130,000 5APACITY 99	acity Gallon/Minute Gallon/Minute Gallon/Minute Gallon/Minute Gallon/Minute Gallon/Minute Gallon/Minute Gallon/Minute Gallon/Minute Gallons Gallons Gallons Connections Connections		nnual Volume Ca 85 / 89 / 0 / 25 / 198 / 191 /	apacity kore Feet/Year kore Feet/Year kore Feet/Year kore Feet/Year kore Feet/Year kore Feet/Year	140,000 Gallons
55 # based on Storage Capacity 21 Connections	300 311 322 333 34 35 36 37 38 39 40 41 42 43 39 40 41 42 44 44 55 55 55 55 33	EXISTING PHYSICAL SOURCE CAPACITY I West Well East Well BRWCD Meter Station on Frontage Road BRWCD Meter Station on 10000 West Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Both Wells #1 & #2 - 29-1138 Total Peak Day Sources Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Both Wells #1 & #2 - 29-1138 Total Peak Day Sources Safety Factor EXISTING STORAGE CAPACITY West Storage Reservoir Exist Storage Reservoir East Storage Reservoir Total Storage ADDITIONAL CONNECTIONS SERVICEABLE WITH EXISTING C # based on Peak Day Physical Source Capacity # based on Peak Day Water Rights Capacity # based on Peak Day Water Rights Capacity	nstantaneous Cap 105 110 0 70 285 1.25 228 449 1.25 359 100,000 30,000 130,000 130,000 30,000 130,000 30,000 130,000	acity Gallon/Minute Gallon/Minute Gallon/Minute Gallon/Minute Gallon/Minute Gallon/Minute Gallon/Minute Gallon/Minute Gallon/Minute Gallons Gallons Connections Connections Connections		nnual Volume Ca 85 / 89 / 0 / 25 / 198 / 191 /	apacity kore Feet/Year kore Feet/Year kore Feet/Year kore Feet/Year kore Feet/Year kore Feet/Year	140,000 Gallons
	$\begin{array}{c} 300\\ 311\\ 322\\ 333\\ 344\\ 355\\ 377\\ 388\\ 399\\ 400\\ 411\\ 422\\ 433\\ 444\\ 455\\ 499\\ 500\\ 511\\ 522\\ 533\\ 54\\ 554\\ 554\\ 554\\ 554\\ 554\\ 556\\ 556\\$	EXISTING PHYSICAL SOURCE CAPACITY I West Well Bast Well BRWCD Meter Station on Frontage Road BRWCD Meter Station on 10000 West Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Both Wells #1 & #2 - 29-1138 Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING STORAGE CAPACITY West Storage Reservoir East Storage Reservoir East Storage Reservoir ADDITIONAL CONNECTIONS SERVICEABLE WITH EXISTING C # based on Peak Day Water Rights Capacity # based on Annual Physical Source Capacity # based on Annual Water Rights Capacity	nstantaneous Cap 105 110 0 70 285 1.25 228 449 449 1.25 359 100,000 30,000 130,000 130,000 5APACITY 99 173 224 162	acity Gallon/Minute Gallon/Minute Gallon/Minute Gallon/Minute Gallon/Minute Gallon/Minute Gallon/Minute Gallon/Minute Gallon/Minute Gallons Gallons Gallons Connections Connections Connections		nnual Volume Ca 85 / 89 / 0 / 25 / 198 / 191 /	apacity kore Feet/Year kore Feet/Year kore Feet/Year kore Feet/Year kore Feet/Year kore Feet/Year	140,000 Gallons

Notes:

Line 3: Based on average water use in 2014-2015 with average lawn size calculated to match total water use per residential connection.

Lines 5-18: Water Demands calculated based on Utah Division of Drinking Water Standards assuming Zone 4 for outside watering requirements.

Lines 24-35: When data was not available for either the annual limit (ac-ft/yr) or the maximum flow rate (cfs or gpm), the other value was obtained by a straight units conversion.

Lines 24-41: Existing source and storage data has been gathered from the following sources of information: interviews with the water agency, sanitary surveys, water rights information and Division of Drinking Water records.

Tech	nical data for Brigham City						
	POPULATION AND IRRIGATED ACREAGE DATA:	2015	2020	2030	2040	2050	2060
2	# Residential Units in Service Area	5494	6409	7521	9778	12711	16524 CONNECTIONS
	# Non-Residential Connections in Service Area	486	521	627	773	966	1207 ACRES/CONN.
	# Acres of Outside Irrigation per Residential Unit	0.19	0.19	0.19	0.19	0.19	0.19 ACRES/CONN.
	Total # Acres of Outside Irrigation for the System	1040.00	1213.14	1423.78	1850.91	2406.18	3128.04 ACRES
	SOURCE REQUIREMENTS	0.400	0.070	0.070	4 004	5 000	
	Annual Indoor Res. Usage = 146,000 Gal/Year/Connection Annual Outdoor Usage = 1.87 Acre Feet/Irrigated Acre	2,462	2,872 2,269	3,370	4,381 3,461	5,696 4,500	7,404 ACRE FEET
	Annual Non-Res Usage = 2.94 Acre Feet/Ingated Acre	1,945 1,429	1,531	2,662 1,843	2,271	2,839	5,849 ACRE FEET 3,549 ACRE FEET
10		5,835	6,671	7,875	10,114	13,035	16,803 ACRE FEET
	Peak Day Indoor Demand = 800 Gal./Day/Connection	4,395,200	5,126,917	6,017,104	7,822,235	10,168,905	13,219,577 GAL/DAY
	Peak Day Outdoor Demand = 3.96 Gpm/Irrigated Acre	5,930,496	6,917,811	8,118,950	10,554,635	13,721,026	17,837,333 GAL/DAY
13	Peak Day Non-Res Indoor Demand = 1.1 PD/AD PF	1,403,050	1,503,621	1,809,488	2,230,413	2,788,072	3,485,035 GAL/DAY
14	Total Peak Day Demand	11,728,746	13,548,348	15,945,541	20,607,283	26,678,003	34,541,945 GAL/DAY
15		8,145	9,409	11,073	14,311	18,526	23,987 GPM
	STORAGE REQUIREMENTS		0 500 450				
	Indoor Requirement = 400 Gal/Connection	2,197,600	2,563,459	3,008,552	3,911,117	5,084,453	6,609,788 GALLONS 8,908,657 GALLONS
	Outside Irrigation Requirement = 2,848 Gal/Irrigated Acre Fire Storage (1000 gpm for 2 hours)	2,961,920 120,000	3,455,023 120,000	4,054,919 120,000	5,271,395 120,000	6,852,813 120,000	120,000 GALLONS
	Emergency Storage, 10%	515,952	601,848	706,347	918,251	1,193,727	1,551,845 GALLONS
21	Total Storage (Rounded)	5,800,000	6,740,000	7,890,000	10,220,000	13,250,000	17,190,000 GALLONS
	DISTRIBUTION SYSTEM REQUIREMENTS	2,222,000	2,2,000	.,,			,,
23		2,822	3,101	3,440	4,058	4,791	5,657 GPM
	Peak Hour Outside Demand = 7.92 Gpm/Irrigated Acre	8,237	9,608	11,276	14,659	19,057	24,774 GPM
25		11,059	12,709	14,716	18,717	23,848	30,432 GPM
	ADDITIONAL SOURCE CAPACITY NEEDED	0.738853572	0.853479601	1.00449104	1.298157942	1.680583539	2.175973386
	Physical Source Capacity on Peak Day Basis	0	0	50	3,287	7,503	12,964 Gallon/Minute
	Physical Source Capacity on Annual Volume Basis	0	0	0	0	841	4,609 AcreFeet/Year
	Water Rights Source Capacity on Peak Day Basis	0	0	0	0	0	4,151 Gallon/Minute
	Water Rights Source Capacity on Annual Volume Basis ADDITIONAL STORAGE CAPACITY NEEDED	0	0	0	0	0	3,377 AcreFeet/Year
	Storage Capacity Needed	0	0	0	0	850,000	4,790,000 Gallons
		Instantaneous Car			Annual Volume Ca		1,1 00,000 Gallerie
	Birch Spring		Gallon/Minute	2004		Acre Feet/Year	
	East Halling Spring		Gallon/Minute	2015		Acre Feet/Year	
	Flat Bottom Spring	13	Gallon/Minute	2014		Acre Feet/Year	
	Knoll Spring		Gallon/Minute	2007		Acre Feet/Year	
	Olsen Spring		Gallon/Minute			Acre Feet/Year	
	Peter Jensen Spring		Gallon/Minute	2015		Acre Feet/Year	
	Rock Spring		Gallon/Minute Gallon/Minute	2004		Acre Feet/Year Acre Feet/Year	
40	West Halling Spring Total of All Springs:		Gallon/Minute	2015	2,3527	Acre Feel/ feal	
	Cemetery Well #1		Gallon/Minute	2010	807 4	Acre Feet/Year	
	Cemetery Well #2		Gallon/Minute			Acre Feet/Year	
	Cooley Well		Gallon/Minute		807 /	Acre Feet/Year	
45	Intermountain Well #2	700	Gallon/Minute		565 /	Acre Feet/Year	
	Flat Bottom Canyon Well		Gallon/Minute			Acre Feet/Year	
	Canyon View Well		Gallon/Minute			Acre Feet/Year	
	Mantua East Well Mantua West Well		Gallon/Minute Gallon/Minute			Acre Feet/Year Acre Feet/Year	
49 50		150	Canon/williute		1217		
	Total Peak Day Sources	12.677	Gallon/Minute		12,194	Acre Feet/Year	
	Safety Factor	1.15			,.017		
53	Total Peak Day Sources with Safety Factor	11,024	Gallon/Minute		12,194 /	Acre Feet/Year	
	EXISTING WATER RIGHTS SOURCE CAPACITY						
	Springs Total		Gallon/Minute			Acre Feet/Year	
56 57	Wells Total	15,540	Gallon/Minute		13,021 /	Acre Feet/Year	
	Total Peak Day Sources	22 811	Gallon/Minute				
	Safety Factor	1.15	Callory Williate				
	Total Peak Day Sources with Safety Factor		Gallon/Minute		13,426	Acre Feet/Year	
	EXISTING STORAGE CAPACITY	.,					
	Total Storage	12,400,000	Gallons				
	Storage Reservoir #2		Gallons				
	Storage Reservoir #3		Gallons				
	Storage Reservoir #4 Storage Reservoir #5		Gallons Gallons				
67	Total Storage	12,400,000					
	ADDITIONAL CONNECTIONS SERVICEABLE WITH EXISTING		Galiona				
	# based on Peak Day Physical Source Capacity		Connections				
	# based on Annual Physical Source Capacity		Connections				
71	# based on Peak Day Water Rights Capacity		Connections				
	# based on Annual Water Rights Capacity		Connections				
	# based on Storage Capacity	6,252	Connections				
Note	S:						

Lines 7-21: Water Demands calculated based on Utah Division of Drinking Water Standards assuming Zone 4 for outside watering requirements.

Lines 32-52: When behavior calculated based on Oran Drivston of Dimking Water total data as assuming 2016 4 for outside watering requirements. Lines 33-52: When data was not available for either the annual limit (ac-ft/yr) or the maximum flow rate (cfs or gpm), the other value was obtained by a straight units conversion. Lines 26-66: Existing source and storage data has been gathered from the following sources of information: interviews with the water agency, sanitary surveys, water rights information and Division of Drinking Water records.

recn	nical data for BRWCD Collinston						
	POPULATION AND IRRIGATED ACREAGE DATA:	2015	2020	2030	2040	2050	2060 UNITS
2	# Units in Service Area	21	22	26	31	40	52 CONNECTIONS
	# Acres of Outside Irrigation per Unit	0.06	0.06	0.06	0.06	0.06	0.06 ACRES/CONN.
	Total # Acres of Outside Irrigation for the System	1.35	1.45	1.70	1.99	2.59	3.37 ACRES
	SOURCE REQUIREMENTS						
	Annual Indoor Usage = 146,000 Gal/Year/Connection	9	10	12	14	18	23 ACRE FEET
	Annual Outdoor Usage = 1.87 Acre Feet/Irrigated Acre	3	3	3	4	5	6 ACRE FEET
	Wholesale Deliveries to UKON	89	118	153	188	223	258 ACRE FEET
9	Total Annual Usage	101	130	167	205	245	287 ACRE FEET
10	Peak Day Indoor Demand = 800 Gal./Day/Connection	16,800	17,984	21,106	24,771	32,202	41,862 GAL/DAY
	Peak Day Outdoor Demand = 3.96 Gpm/Irrigated Acre	7,712	8,255	9,689	11,371	14,782	19,217 GAL/DAY
	Wholesale Peak Day Demand to UKON	169,920	223,404	289,950	356,495	423.041	489.587 GAL/DAY
13	Total Peak Day Demand	194,432	249,643	320,744	392,637	470,025	550,666 GAL/DAY
14	(Gallons per Minute)	135	173	223	273	326	382 GPM
	Indoor Requirement = 400 Gal/Connection	8,400	8,992	10,553	12,385	16,101	20,931 GALLONS
	Outside Irrigation Requirement = 2,848 Gal/Irrigated Acre	3,852	4,123	4,839	5,679	7,383	9,598 GALLONS
	Wholesale Deliveries Requirement = 1/2 Daily Demand	84,960	111,702	144,975	178,248	211,521	244,794 GALLONS
	Fire Storage (1,500 gpm for 2 hours)	180,000	180,000	180,000	180,000	180,000	180,000 GALLONS
	Emergency Storage, 10%	9,721	12,482	16.037	19.631	23,500	27.532 GALLONS
21	Total Storage	287,000	317,000	356,000	396,000	439,000	483,000 GALLONS
	DISTRIBUTION SYSTEM REQUIREMENTS	201,000	011,000	000,000	000,000	400,000	400,000 0/1220110
	Peak Hour Indoor Demand = 10.8(N^.64); N = # Connections	76	79	88	97	115	136 GPM
	Peak Hour Outside Demand = 7.92 Gpm/Irrigated Acre	11	11	13	16	21	27 GPM
	Average Daily Demand for Wholesale Deliveries	118	155	201	248	294	340 GPM
25	Total Peak Hour Demand	205	246	303	361	429	503 GPM
		0.718203035	0.922143239	1.17478192	1.425292322	1.67649281	1.929287421
	Physical Source Capacity on Peak Day Basis	0	25	75	125	178	234 Gallon/Minute
	Physical Source Capacity on Annual Volume Basis	0	0	0	0	0	0 AcreFeet/Year
	Water Rights Source Capacity on Peak Day Basis	0	25	75	125	178	234 Gallon/Minute
	Water Rights Source Capacity on Annual Volume Basis ADDITIONAL STORAGE CAPACITY NEEDED	0	0	0	0	0	0 AcreFeet/Year
- 32							
~~~		•	•	•		•	
	Storage Capacity Needed	0	0	0	0	0	0 Gallons
34	Storage Capacity Needed EXISTING PHYSICAL SOURCE PEAK DAY CAPACITY F	eak Day Capacity		-	nnual Volume Ca	pacity	0 Gallons
34 35	Storage Capacity Needed EXISTING PHYSICAL SOURCE PEAK DAY CAPACITY F Deweyville Surplus Water Contract	Peak Day Capacity 185 G	Sallon/Minute	-	nnual Volume Ca 150 A	pacity cre Feet/Year	0 Gallons
34 35 36	Storage Capacity Needed EXISTING PHYSICAL SOURCE PEAK DAY CAPACITY F	Peak Day Capacity 185 G		-	nnual Volume Ca 150 A	pacity	0 Gallons
34 35 36 37	Storage Capacity Needed           EXISTING PHYSICAL SOURCE PEAK DAY CAPACITY           Deweyville Surplus Water Contract           BRWCD Water Rights Temporary Change App.	Peak Day Capacity 185 G 0 G	Gallon/Minute Gallon/Minute	-	nnual Volume Ca 150 A 150 A	pacity cre Feet/Year cre Feet/Year	0 Gallons
34 35 36 37 38	Storage Capacity Needed EXISTING PHYSICAL SOURCE PEAK DAY CAPACITY Deweyville Surplus Water Contract BRWCD Water Rights Temporary Change App. Total Peak Day Sources	eak Day Capacity 185 G 0 G 185 G	Sallon/Minute	-	nnual Volume Ca 150 A 150 A	pacity cre Feet/Year	0 Gallons
34 35 36 37 38 39	Storage Capacity Needed EXISTING PHYSICAL SOURCE PEAK DAY CAPACITY Peweyville Surplus Water Contract BRWCD Water Rights Temporary Change App. Total Peak Day Sources Safety Factor	eak Day Capacity 185 G 0 G 185 G 1.25	Gallon/Minute Gallon/Minute Gallon/Minute	-	nnual Volume Ca 150 A 150 A 300 A	pacity cre Feet/Year cre Feet/Year cre Feet/Year	0 Gallons
34 35 36 37 38 39 40	Storage Capacity Needed EXISTING PHYSICAL SOURCE PEAK DAY CAPACITY Deweyville Surplus Water Contract BRWCD Water Rights Temporary Change App. Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor	eak Day Capacity 185 G 0 G 185 G 1.25	Gallon/Minute Gallon/Minute	-	nnual Volume Ca 150 A 150 A 300 A	pacity cre Feet/Year cre Feet/Year	0 Gallons
34 35 36 37 38 39 40 41	Storage Capacity Needed EXISTING PHYSICAL SOURCE PEAK DAY CAPACITY Deweyville Surplus Water Contract BRWCD Water Rights Temporary Change App. Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY	Peak Day Capacity 185 G 0 G 185 G 1.25 148 G	Gallon/Minute Gallon/Minute Gallon/Minute Gallon/Minute	-	nnual Volume Ca 150 A 150 A 300 A 300 A	pacity cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year	0 Gallons
34 35 36 37 38 39 40 41 42	Storage Capacity Needed EXISTING PHYSICAL SOURCE PEAK DAY CAPACITY Deweyville Surplus Water Contract BRWCD Water Rights Temporary Change App. Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Deweyville Surplus Water Contract	Peak Day Capacity 185 G 0 G 185 G 1.25 148 G 185 G	Sallon/Minute Sallon/Minute Sallon/Minute Sallon/Minute Sallon/Minute	-	nnual Volume Ca 150 A 150 A 300 A 300 A 150 A	pacity cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year	0 Gallons
34 35 36 37 38 39 40 41 42 43	Storage Capacity Needed EXISTING PHYSICAL SOURCE PEAK DAY CAPACITY Deweyville Surplus Water Contract BRWCD Water Rights Temporary Change App. Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY	Peak Day Capacity 185 G 0 G 185 G 1.25 148 G 185 G	Gallon/Minute Gallon/Minute Gallon/Minute Gallon/Minute	-	nnual Volume Ca 150 A 150 A 300 A 300 A 150 A	pacity cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year	0 Gallons
34 35 36 37 38 39 40 41 42 43 44	Storage Capacity Needed EXISTING PHYSICAL SOURCE PEAK DAY CAPACITY Poweyville Surplus Water Contract BRWCD Water Rights Temporary Change App. Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Deweyville Surplus Water Contract BRWCD Water Rights Temporary Change App.	Peak Day Capacity 185 G 0 G 185 G 1.25 148 G 185 G 0 G	Sallon/Minute Sallon/Minute Sallon/Minute Sallon/Minute Sallon/Minute Sallon/Minute	-	nnual Volume Ca 150 A 150 A 300 A <u>300 A</u> 150 A 150 A	pacity cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year	0 Gallons
34 35 36 37 38 39 40 41 42 43 44 45	Storage Capacity Needed EXISTING PHYSICAL SOURCE PEAK DAY CAPACITY Deweyville Surplus Water Contract BRWCD Water Rights Temporary Change App. Total Peak Day Sources with Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Deweyville Surplus Water Contract BRWCD Water Rights Temporary Change App. Total Peak Day Sources	Peak Day Capacity 185 C 0 C 185 C 1.25 148 C 185 C 0 C 185 C	Sallon/Minute Sallon/Minute Sallon/Minute Sallon/Minute Sallon/Minute	-	nnual Volume Ca 150 A 150 A 300 A <u>300 A</u> 150 A 150 A	pacity cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year	0 Gallons
34 35 36 37 38 39 40 41 42 43 44 45 46	Storage Capacity Needed EXISTING PHYSICAL SOURCE PEAK DAY CAPACITY Deweyville Surplus Water Contract BRWCD Water Rights Temporary Change App. Total Peak Day Sources Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Deweyville Surplus Water Contract BRWCD Water Rights Temporary Change App. Total Peak Day Sources Safety Factor	Peak Day Capacity 185 C 0 C 185 C 1.25 148 C 148 C 0 C 185 C 0 C 1.25	Sallon/Minute Sallon/Minute Sallon/Minute Sallon/Minute Sallon/Minute Sallon/Minute	-	nnual Volume Caj 150 A 150 A 300 A 300 A 150 A 150 A 300 A	pacity cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year	0 Gallons
34 35 36 37 38 39 40 41 42 43 44 45 46 47	Storage Capacity Needed EXISTING PHYSICAL SOURCE PEAK DAY CAPACITY Deweyvile Surplus Water Contract BRWCD Water Rights Temporary Change App. Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Deweyville Surplus Water Contract BRWCD Water Rights Temporary Change App. Total Peak Day Sources Safety Factor Total Peak Day Sources	Peak Day Capacity 185 C 0 C 185 C 1.25 148 C 148 C 0 C 185 C 0 C 1.25	Sallon/Minute Sallon/Minute Sallon/Minute Sallon/Minute Sallon/Minute Sallon/Minute	-	nnual Volume Caj 150 A 150 A 300 A 300 A 150 A 150 A 300 A	pacity cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year	0 Gallons
34 35 36 37 38 39 40 41 42 43 44 45 46 47 48	Storage Capacity Needed EXISTING PHYSICAL SOURCE PEAK DAY CAPACITY Deweyville Surplus Water Contract BRWCD Water Rights Temporary Change App. Total Peak Day Sources with Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Deweyville Surplus Water Contract BRWCD Water Rights Temporary Change App. Total Peak Day Sources Safety Factor Total	Peak Day Capacity 185 G 0 G 1.25 148 G 185 G 0 G 185 G 1.25 148 G	Sallon/Minute Sallon/Minute Sallon/Minute Sallon/Minute Sallon/Minute Sallon/Minute Sallon/Minute	A	nnual Volume Caj 150 A 150 A 300 A 300 A 150 A 150 A 300 A	pacity cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year	0 Gallons
34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49	Storage Capacity Needed EXISTING PHYSICAL SOURCE PEAK DAY CAPACITY Deweyville Surplus Water Contract BRWCD Water Rights Temporary Change App. Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Deweyville Surplus Water Contract BRWCD Water Rights Temporary Change App. Total Peak Day Sources Safety Factor South Tank	Peak Day Capacity 185 C 0 C 185 C 1.25 148 C 0 C 185 C 0 C 185 C 185 C 185 C 1.25 148 C 500,000	Sallon/Minute Sallon/Minute Sallon/Minute Sallon/Minute Sallon/Minute Sallon/Minute	A	nnual Volume Caj 150 A 150 A 300 A 300 A 150 A 150 A 300 A	pacity cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year	0 Gallons
34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50	Storage Capacity Needed EXISTING PHYSICAL SOURCE PEAK DAY CAPACITY Deweyville Surplus Water Contract BRWCD Water Rights Temporary Change App. Total Peak Day Sources with Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Deweyville Surplus Water Contract BRWCD Water Rights Temporary Change App. Total Peak Day Sources Safety Factor Total	Peak Day Capacity 185 G 0 G 1.25 148 G 185 G 0 G 185 G 1.25 148 G	Sallon/Minute Sallon/Minute Sallon/Minute Sallon/Minute Sallon/Minute Sallon/Minute	A	nnual Volume Caj 150 A 150 A 300 A 300 A 150 A 150 A 300 A	pacity cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year	0 Gallons
34 355 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51	Storage Capacity Needed EXISTING PHYSICAL SOURCE PEAK DAY CAPACITY Deweyville Surplus Water Contract BRWCD Water Rights Temporary Change App. Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Deweyville Surplus Water Contract BRWCD Water Rights Temporary Change App. Total Peak Day Sources Safety Factor South Tank	Peak Day Capacity 185 C 0 C 185 C 1.25 148 C 0 C 185 C 0 C 185 C 185 C 185 C 1.25 148 C 500,000	Sallon/Minute Sallon/Minute Sallon/Minute Sallon/Minute Sallon/Minute Sallon/Minute	A	nnual Volume Caj 150 A 150 A 300 A 300 A 150 A 150 A 300 A	pacity cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year	0 Gallons
34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52	Storage Capacity Needed EXISTING PHYSICAL SOURCE PEAK DAY CAPACITY Deweyville Surplus Water Contract BRWCD Water Rights Temporary Change App. Total Peak Day Sources with Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Deweyville Surplus Water Contract BRWCD Water Rights Temporary Change App. Total Peak Day Sources Safety Factor Total Peak Day Sources South Tank North Tank	Peak Day Capacity 185 C 0 C 185 C 1.25 148 C 0 C 185 C 0 C 185 C 185 C 185 C 125 148 C 500,000 500,000	Sallon/Minute Sallon/Minute Sallon/Minute Sallon/Minute Sallon/Minute Sallon/Minute	A Gallons Gallons	nnual Volume Caj 150 A 150 A 300 A 300 A 150 A 150 A 300 A	pacity cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year	0 Gallons
34 355 366 377 388 399 40 41 422 433 444 455 466 477 488 499 501 512 5253	Storage Capacity Needed EXISTING PHYSICAL SOURCE PEAK DAY CAPACITY Deweyvile Surplus Water Contract BRWCD Water Rights Temporary Change App. Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Deweyville Surplus Water Contract BRWCD Water Rights Temporary Change App. Total Peak Day Sources Safety Factor Total Peak Day Sources EXISTING STORAGE CAPACITY South Tank North Tank Total Storage	Peak Day Capacity 185 C 0 C 185 C 1.25 148 C 185 C 0 C 185 C 0 C 185 C 0 C 185 C 0 C 1.25 148 C 1.25 148 C 1.25 148 C 1.25 148 C	Sallon/Minute Sallon/Minute Sallon/Minute Sallon/Minute Sallon/Minute Sallon/Minute	A	nnual Volume Caj 150 A 150 A 300 A 300 A 150 A 150 A 300 A	pacity cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year	0 Gallons
34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 35	Storage Capacity Needed EXISTING PHYSICAL SOURCE PEAK DAY CAPACITY Deweyville Surplus Water Contract BRWCD Water Rights Temporary Change App. Total Peak Day Sources with Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Deweyville Surplus Water Contract BRWCD Water Rights Temporary Change App. Total Peak Day Sources Safety Factor Total Storage ADDITIONAL CONNECTIONS SERVICEABLE WITH EXISTING CA	Peak Day Capacity 185 C 0 C 185 C 1.25 148 C 185 C 0 C 185 C 148 C 185 C 148 C 185 C 148 C 185 C 195 C	Sallon/Minute Sallon/Minute Sallon/Minute Sallon/Minute Sallon/Minute Sallon/Minute	A Gallons Gallons Gallons	nnual Volume Caj 150 A 150 A 300 A 300 A 150 A 150 A 300 A	pacity cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year	0 Gallons
34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55	Storage Capacity Needed EXISTING PHYSICAL SOURCE PEAK DAY CAPACITY Deweyville Surplus Water Contract BRWCD Water Rights Temporary Change App. Total Peak Day Sources with Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Deweyville Surplus Water Contract BRWCD Water Rights Temporary Change App. Total Peak Day Sources Safety Factor Total Peak Day Sources South Tank North Tank Total Storage ADDITIONAL CONNECTIONS SERVICEABLE WITH EXISTING CA # based on Peak Day GPM Physical Source Capacity	Peak Day Capacity 185 C 0 C 185 C 185 C 125 148 C 0 C 185 C 185 C 0 C 185 C 0 C 185 C 185 C 0 C 185 C 185 C 0 C 185 C 185 C 0 C 185 C 0 C 185 C 185 C 0 C 185 C 0 C 185 C 185 C 0 C 185 C 185 C 0 C 185 C 185 C 0 C 185 C 185 C 0 C 185 C 195 C	Sallon/Minute Sallon/Minute Sallon/Minute Sallon/Minute Sallon/Minute Sallon/Minute	A Gallons Gallons Gallons Connections	nnual Volume Caj 150 A 150 A 300 A 300 A 150 A 150 A 300 A	pacity cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year	0 Gallons
$\begin{array}{c} 34\\ 35\\ 36\\ 37\\ 38\\ 39\\ 40\\ 411\\ 423\\ 444\\ 45\\ 46\\ 47\\ 48\\ 49\\ 50\\ 512\\ 53\\ 54\\ 55\\ 56\end{array}$	Storage Capacity Needed EXISTING PHYSICAL SOURCE PEAK DAY CAPACITY Deweyvile Surplus Water Contract BRWCD Water Rights Temporary Change App. Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Deweyville Surplus Water Contract BRWCD Water Rights Temporary Change App. Total Peak Day Sources Safety Factor Total Peak Day Source Safety Factor South Tank North Tank	Peak Day Capacity 185 C 0 C 185 C 1.25 148 C 148 C 148 C 0 C 185 C 185 C 1.25 148 C 148 C 14	Sallon/Minute Sallon/Minute Sallon/Minute Sallon/Minute Sallon/Minute Sallon/Minute	A Gallons Gallons Gallons Connections Connections	nnual Volume Caj 150 A 150 A 300 A 300 A 150 A 150 A 300 A	pacity cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year	0 Gallons
$\begin{array}{c} 34\\ 355\\ 36\\ 37\\ 38\\ 390\\ 40\\ 41\\ 42\\ 43\\ 44\\ 45\\ 46\\ 47\\ 50\\ 51\\ 52\\ 53\\ 54\\ 55\\ 56\\ 57\\ \end{array}$	Storage Capacity Needed EXISTING PHYSICAL SOURCE PEAK DAY CAPACITY Deweyville Surplus Water Contract BRWCD Water Rights Temporary Change App. Total Peak Day Sources with Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Deweyville Surplus Water Contract BRWCD Water Rights Temporary Change App. Total Peak Day Sources Safety Factor Total Storage ADDITIONAL CONNECTIONS SERVICEABLE WITH EXISTING CA # based on Peak Day GPM Physical Source Capacity # based on Peak Day GPM Water Rights Capacity	Peak Day Capacity 185 C 0 C 185 C 1.25 148 C 185 C 185 C 185 C 185 C 1.25 148 C 1.25 148 C 500,000 1,000,000 1,000,000 1,000,000 1,000,000 16 349 16 16 16 16 16 18 18 18 18 18 18 18 18 18 18	Sallon/Minute Sallon/Minute Sallon/Minute Sallon/Minute Sallon/Minute Sallon/Minute	A Sallons Sallons Sallons Connections Connections Connections	nnual Volume Caj 150 A 150 A 300 A 300 A 150 A 150 A 300 A	pacity cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year	0 Gallons
$\begin{array}{c} 34\\ 35\\ 36\\ 37\\ 389\\ 40\\ 41\\ 42\\ 43\\ 44\\ 45\\ 46\\ 47\\ 48\\ 49\\ 50\\ 51\\ 52\\ 53\\ 54\\ 55\\ 56\\ 57\\ 58\end{array}$	Storage Capacity Needed EXISTING PHYSICAL SOURCE PEAK DAY CAPACITY Deweyvile Surplus Water Contract BRWCD Water Rights Temporary Change App. Total Peak Day Sources with Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Deweyville Surplus Water Contract BRWCD Water Rights Temporary Change App. Total Peak Day Sources Safety Factor Total Storage ADDITIONAL CONNECTIONS SERVICEABLE WITH EXISTING CA # based on Peak Day GPM Physical Source Capacity # based on Annual Volume Physical Source Capacity # based on Annual Volume Water Rights Capacity # based on Annual Volume Vater R	Peak Day Capacity 185 C 0 C 185 C 185 C 185 C 185 C 185 C 0 C 185 C 0 C 185 C 185 C 185 C 0 C 185 C 0 C 185 C 0 C 185 C 0 C 185 C 0 C 185 C 0 C 185 C 185 C 0 C 185 C 0 C 185 C 185 C 0 C 185 C 185 C 0 C 185 C 0 C 185 C 190,000 1,000,000 1,000,000 165 C 165 C	Sallon/Minute Sallon/Minute Sallon/Minute Sallon/Minute Sallon/Minute Sallon/Minute	A Gallons Gallons Gallons Connections Connections Connections Connections	nnual Volume Caj 150 A 150 A 300 A 300 A 150 A 150 A 300 A	pacity cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year	0 Gallons
34 35 36 37 38 39 40 41 42 43 44 45 466 47 8 49 50 51 52 53 54 55 55 56 57 58	Storage Capacity Needed EXISTING PHYSICAL SOURCE PEAK DAY CAPACITY Deweyville Surplus Water Contract BRWCD Water Rights Temporary Change App. Total Peak Day Sources with Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Deweyville Surplus Water Contract BRWCD Water Rights Temporary Change App. Total Peak Day Sources Safety Factor Total Storage ADDITIONAL CONNECTIONS SERVICEABLE WITH EXISTING CA # based on Peak Day GPM Physical Source Capacity # based on Peak Day GPM Water Rights Capacity	Peak Day Capacity 185 C 0 C 185 C 1.25 148 C 185 C 185 C 185 C 185 C 1.25 148 C 1.25 148 C 500,000 1,000,000 1,000,000 1,000,000 1,000,000 16 349 16 16 16 16 16 18 18 18 18 18 18 18 18 18 18	Sallon/Minute Sallon/Minute Sallon/Minute Sallon/Minute Sallon/Minute Sallon/Minute	A Sallons Sallons Sallons Connections Connections Connections	nnual Volume Caj 150 A 150 A 300 A 300 A 150 A 150 A 300 A	pacity cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year	0 Gallons

 59 # based on Storage Capacity

 Notes:

 Line 2:
 Total of 18 connections served in 2015, the first year of operation. 16 residential connections and 2 - 1" meters having peak demand of 2.5 x standard ERC meter

 Line 3:
 Based on average water use in 2014-2015 with average lawn size calculated to match total water use per residential connection.

 Lines 5-18:
 Water Demands calculated based on Utah Division of Drinking Water Standards assuming Zone 4 for outside watering requirements.

 Line 21 24:
 Fire flows not included in calculations

Technical of	data for BRWCD Harper Ward						
	JLATION AND IRRIGATED ACREAGE DATA:	2015	2020	2030	2040	2050	2060
2 # Unit	ts in Service Area	83	85	100	130	169	220 CONNECTIONS
3 # Acre	es of Outside Irrigation per Unit	0.06	0.06	0.06	0.06	0.06	0.06 ACRES/CONN.
	# Acres of Outside Irrigation for the System	4.76	4.89	5.74	7.47	9.71	12.62 ACRES
	RCE REQUIREMENTS			-			
	al Indoor Usage = 146,000 Gal/Year/Connection	37	38	45	58	76	99 ACRE FEET
	al Outdoor Usage = 1.87 Acre Feet/Irrigated Acre	9	9	11	14	18	24 ACRE FEET
8	Total Annual Usage	46	47	56	72	94	122 ACRE FEET
0 Peak	Day Indoor Demand = 800 Gal./Day/Connection	66,400	68.220	80.065	104.085	135.310	175.903 GAL/DAY
	Day Outdoor Demand = 3.96 Gpm/Irrigated Acre	27,164	27,908	32,754	42,580	55,354	71,960 GAL/DAY
11	Total Peak Day Demand	93,564	96,128	112,819	146,665	190,664	247,864 GAL/DAY
12	(Gallons per Minute)	65	67	78	140,003	130,004	172 GPM
		00	01	70	102	152	172 61 10
		22.200	24 110	40.022	52.042	67.655	87.052 CALLONE
	r Requirement = 400 Gal/Connection	33,200	34,110	40,033	52,042	67,655	87,952 GALLONS
	de Irrigation Requirement = 2,848 Gal/Irrigated Acre	13,567	13,938	16,359	21,266	27,646	35,940 GALLONS
	Storage (1000 gpm for 2 hour) (From Honeyville)	120,000	120,000	120,000	120,000	120,000	120,000 GALLONS
	gency Storage, 10%	4,677	4,805	5,639	7,331	9,530	12,389 GALLONS
18	Total Storage (Rounded)	170,000	170,000	180,000	200,000	220,000	260,000 GALLONS
	RIBUTION SYSTEM REQUIREMENTS						
	Hour Indoor Demand = 10.8(N^.64); N = # Connections	183	186	206	244	288	341 GPM
	Hour Outside Demand = 7.92 Gpm/Irrigated Acre	38	39	45	59	77	100 GPM
22	Total Peak Hour Demand	220	225	251	303	365	441 GPM
23 ADDI	TIONAL SOURCE CAPACITY NEEDED	0.406092172	0.417223775	0.489666339	0.636566241	0.827536114	1.075796948
24 Physi	cal Source Capacity on Peak Day Basis	0	0	0	0	0	12 Gallon/Minute
25 Physi	cal Source Capacity on Annual Volume Basis	0	0	0	0	0	0 AcreFeet/Year
26 Water	r Rights Source Capacity on Peak Day Basis	0	0	0	0	0	0 Gallon/Minute
27 Water	r Rights Source Capacity on Annual Volume Basis	0	0	0	0	0	0 AcreFeet/Year
	TIONAL STORAGE CAPACITY NEEDED						
29 Stora	ge Capacity Needed	120.000	120,000	130,000	150.000	170,000	210,000 Gallons
30 EXIS	TING PHYSICAL SOURCE CAPACITY	stantaneous Capa	icity Ai	nnual Volume Cap	acity		· · · · · ·
	am City Surplus Contract		allon/Minute		cre Feet/Year		
	er Ward Well (future)		allon/Minute		cre Feet/Year		
33	si franci from (nataro)				01010001000		
	Peak Day Sources	200 G	allon/Minute				
35 Safety		1.25					
	Peak Day Sources with Safety Factor		allon/Minute	200 4	cre Feet/Year		
	TING WATER RIGHTS SOURCE CAPACITY	100 C		200 /			
	am City Surplus Contract	500 0	allon/Minute	200 4	cre Feet/Year		
	er Ward Well (future)		allon/Minute		cre Feet/Year		
40		e	alion/willing		0101 0001 001		
	Peak Day Sources	500 6	allon/Minute				
Ulai			anon/iviiriute		l		
12 Safat	v Factor						
42 Safety		1.25	allon/Minuto	200 4	oro Eoot/Voor		
43 Total	Peak Day Sources with Safety Factor		allon/Minute	200 A	cre Feet/Year		
43 Total 44 EXIS	Peak Day Sources with Safety Factor TING STORAGE CAPACITY	400 G		200 A	cre Feet/Year		
43 <u>Total</u> 44 <b>EXIS</b> 45 Bright	Peak Day Sources with Safety Factor			200 A	cre Feet/Year		
43 <u>Total</u> 44 <b>EXIS</b> 45 Brigha 46	Peak Day Sources with Safety Factor TING STORAGE CAPACITY	400 G		200 A	cre Feet/Year		
43 <u>Total</u> 44 <b>EXIS</b> 45 Bright 46 47	Peak Day Sources with Safety Factor TING STORAGE CAPACITY am City Tank (provides water equalization flows)	400 G	allons	200 A	cre Feet/Year		
43 Total 44 <b>EXIS</b> 45 Bright 46 47 48	Peak Day Sources with Safety Factor TING STORAGE CAPACITY am City Tank (provides water equalization flows) Total Storage	400 G 50,000 G 50,000 G	allons	200 A	cre Feet/Year		
43 Total 44 EXIS 45 Bright 46 47 48 49 ADDI	Peak Day Sources with Safety Factor TING STORAGE CAPACITY am City Tank (provides water equalization flows) Total Storage TIONAL CONNECTIONS SERVICEABLE WITH EXISTING C	400 G 50,000 G 50,000 G 4PACITY	Ballons Ballons	200 A	.cre Feet/Year		
43 Total 44 EXIS 45 Bright 46 47 48 49 ADDI 50 # bas	Peak Day Sources with Safety Factor TING STORAGE CAPACITY am City Tank (provides water equalization flows) Total Storage TIONAL CONNECTIONS SERVICEABLE WITH EXISTING C. ed on Peak Day Physical Source Capacity	400 G 50,000 G 50,000 G APACITY 121 C	allons allons connections	200 A	.cre Feet/Year		
43 Total 44 EXIS 45 Bright 46 47 48 49 ADDI 50 # bas 51 # bas	Peak Day Sources with Safety Factor TING STORAGE CAPACITY am City Tank (provides water equalization flows) Total Storage TIONAL CONNECTIONS SERVICEABLE WITH EXISTING C. ed on Peak Day Physical Source Capacity ed on Annual Physical Source Capacity	400 G 50,000 G 50,000 G APACITY 121 C 277 C	allons allons connections connections	200 A	.cre Feet/Year		
43 Total 44 EXIS 45 Bright 46 47 48 49 ADDI 50 # bas 51 # bas 52 # bas	Peak Day Sources with Safety Factor TING STORAGE CAPACITY am City Tank (provides water equalization flows) Total Storage TIONAL CONNECTIONS SERVICEABLE WITH EXISTING C. ed on Peak Day Physical Source Capacity ed on Annual Physical Source Capacity ed on Peak Day Water Rights Capacity	400 G 50,000 G 50,000 G APACITY 121 C 277 C 428 C	allons allons connections connections connections	200 A	cre Feet/Year		
43 Total 44 EXIS 45 Bright 46 47 48 49 ADDI 50 # bas 51 # bas 52 # bas 53 # bas	Peak Day Sources with Safety Factor TING STORAGE CAPACITY am City Tank (provides water equalization flows) Total Storage TIONAL CONNECTIONS SERVICEABLE WITH EXISTING C. ed on Peak Day Physical Source Capacity ed on Annual Physical Source Capacity ed on Annual Physical Source Capacity ed on Annual Water Rights Capacity ed on Annual Water Rights Capacity	400 G 50,000 G 50,000 G APACITY 121 C 277 C 428 C 277 C	allons <u>Connections</u> Connections Connections Connections Connections	200 A	.cre Feet/Year		
43 Total 44 EXIS 45 Bright 46 47 48 49 ADDI 50 # bas 51 # bas 52 # bas 53 # bas	Peak Day Sources with Safety Factor TING STORAGE CAPACITY am City Tank (provides water equalization flows) Total Storage TIONAL CONNECTIONS SERVICEABLE WITH EXISTING C. ed on Peak Day Physical Source Capacity ed on Annual Physical Source Capacity ed on Peak Day Water Rights Capacity	400 G 50,000 G 50,000 G APACITY 121 C 277 C 428 C 277 C	allons allons connections connections connections	200 A	cre Feet/Year		

Line 3: Most users have access to secondary water. Average outdoor use is 2,500 sq ft per connection, based on 2011 - 2014 usage data. Lines 30-48: When data was not available for either the annual limit (ac-ft/yr) or the maximum flow rate (cfs or gpm), the other value was obtained by a straight units conversion. Lines 30-48: Existing source and storage data has been gathered from the following sources of information: interviews with the water agency, sanitary surveys, water rights information and Division of Drinking Water records.

Tech	nical data for BRWCD M&I System						
	POPULATION AND IRRIGATED ACREAGE DATA:	2015	2020	2030	2040	2050	2060 UNITS
2	# Units in Service Area	44	49	57	75	97	126 CONNECTIONS
3	# Acres of Outside Irrigation per Unit	0.26	0.26	0.26	0.26	0.26	0.26 ACRES/CONN.
	Total # Acres of Outside Irrigation for the System	11.61	12.90	15.14	19.69	25.59	33.27 ACRES
	SOURCE REQUIREMENTS						
	Annual Indoor Usage = 146,000 Gal/Year/Connection	20	22	26	33	43	57 ACRE FEET
7	Annual Outdoor Usage = 1.87 Acre Feet/Irrigated Acre	20	24	28	37	48	62 ACRE FEET
	Wholesale Deliveries	365	439	734	1,011	1,289	1,566 ACRE FEET
0		406	439	788	1,011		1,685 ACRE FEET
9	Total Annual Usage			45.925	59,703	1,380	
10		35,200	39,131			77,614	100,898 GAL/DAY
	Peak Day Outdoor Demand = 3.96 Gpm/Irrigated Acre	66,189	73,581	86,357	112,264	145,943	189,725 GAL/DAY
12		1,335,899	1,608,532	2,684,736	3,700,028	4,715,955	5,732,579 GAL/DAY
13	Total Peak Day Demand	1,437,288	1,721,244	2,817,018	3,871,995	4,939,511	6,023,202 GAL/DAY
14	(Gallons per Minute)	998	1195	1956	2689	3430	4183 GPM
	STORAGE REQUIREMENTS						
	Indoor Requirement = 400 Gal/Connection	17,600	19,566	22,963	29,851	38,807	50,449 GALLONS
17		33,057	36,749	43,130	56,069	72,889	94,756 GALLONS
	Wholesale Deliveries Requirement = 1/2 Daily Demand	667,949	804,266	1,342,368	1,850,014	2,357,977	2,866,289 GALLONS
19	Fire Storage (500 gpm for 1/2 hour)	60,000	60,000	60,000	60,000	60,000	60,000 GALLONS
20	Emergcy Storage, 10%	5,066	5,631	6,609	8,592	11,170	14,521 GALLONS
21							
22	Total Storage	784,000	926,000	1,475,000	2,005,000	2,541,000	3,086,000 GALLONS
23	DISTRIBUTION SYSTEM REQUIREMENTS		•				
24	Peak Hour Indoor Demand = 10.8(N^.64); N = # Connections	122	130	144	171	202	239 GPM
	Peak Hour Outside Demand = 7.92 Gpm/Irrigated Acre	92	102	120	156	202	264 GPM
26		839	839	839	839	839	839 GPM
27	Total Peak Hour Demand	1,053	1,071	1,103	1,166	1,244	1,341 GPM
28		0.181476	0.217329	0.355684	0.488888	0.623676	
			0.217329				0.760505
	Physical Source Capacity on Peak Day Basis	0	0	0	0	0	0 Gallon/Minute
	Physical Source Capacity on Annual Volume Basis			0	0	0	0 AcreFeet/Year
	Water Rights Source Capacity on Peak Day Basis	0	0	0	369	1,111	1,863 Gallon/Minute
	Water Rights Source Capacity on Annual Volume Basis	0	0	0	0	0	237 AcreFeet/Year
	ADDITIONAL STORAGE CAPACITY NEEDED						
	Storage Capacity Needed	284,000	426,000	975,000	1,505,000	2,041,000	2,586,000 Gallons
		eak Day Capacity		, A	Annual Volume Ca		
	Newman Well		Gallon/Minute			cre Feet/Year	
37	Backup Well	2,400	Gallon/Minute		1,936 A	cre Feet/Year	
38							
39	Total Peak Day Sources	5,500	Gallon/Minute		4,436 A	cre Feet/Year	
40	Safety Factor	1.25					
41	Net Total Peak Day Sources with Safety Factor	4,400	Gallon/Minute		4,436 A	cre Feet/Year	
	EXISTING WATER RIGHTS SOURCE CAPACITY	,			,		
	Newman Well	2,899	Gallon/Minute		1.448 A	cre Feet/Year	
44	Backup Well		Gallon/Minute			cre Feet/Year	
45					,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		
46	Total Peak Day Sources	2 800	Gallon/Minute				
40	Safety Factor	1.25	Gallon/Williate				
48	Total Peak Day Sources		Gallon/Minute		1 / / 9 /	cre Feet/Year	
40	EXISTING STORAGE CAPACITY	2,319	Galon/Minute		1,440 A	0101 0001001	
	M&I Tank	500,000		Gallons			
50		500,000		GailUIIS			
51	T-1-1 01	500.000		Gallons			
-		500,000		Galions			
	ADDITIONAL CONNECTIONS SERVICEABLE WITH EXISTING CAP			<b>.</b>			
	# based on Peak Day GPM Physical Source Capacity	2,126		Connections			
	# based on Annual Volume Physical Source Capacity	4,281		Connections			
	# based on Peak Day GPM Water Rights Capacity	826		Connections			
	# based on Annual Volume Water Rights Capacity	1,106		Connections			
58	# based on Storage Capacity	-224		Connections			

Notes

Line 3: Based on average water use in 2014-2015 with average lawn size calculated to match total water use per residential connection.

Lines 5-18: Water Demands calculated based on Utah Division of Drinking Water Standards assuming Zone 4 for outside watering requirements. Lines 24-35: When data was not available for either the annual limit (ac-ft/yr) or the maximum flow rate (cfs or gpm), the other value was obtained by a straight units conversion. Lines 24-41: Existing source and storage data has been gathered from the following sources of information: interviews with the water agency, sanitary surveys, water rights information and Division of

echnical data for BRWCD South Willard						
1 POPULATION AND IRRIGATED ACREAGE DATA:	2015	2020	2030	2040	2050	2060
2 # Units in Service Area	96	121	128	138	150	167 CONNECTIONS
3 # Acres of Outside Irrigation per Unit	0.00	0.00	0.00	0.00	0.00	0.00 ACRES/CONN.
4 Total # Acres of Outside Irrigation for the System	0.00	0.00	0.00	0.00	0.00	0.00 ACRES
5 SOURCE REQUIREMENTS						
6 Annual Indoor Usage = 146,000 Gal/Year/Connection	43	54	57	62	67	75 ACRE FEET
7 Annual Outdoor Usage = 1.87 Acre Feet/Irrigated Acre	0	0	0	0	0	0 ACRE FEET
8 Total Annual Usage	43	54	57	62	67	75 ACRE FEET
9 Peak Day Indoor Demand = 800 Gal./Day/Connection	76,444	96,444	102,444	110,244	120,384	133,566 GAL/DAY
10 Peak Day Outdoor Demand = 3.96 Gpm/Irrigated Acre	0	0	0	0	0	0 GAL/DAY
11 Total Peak Day Demand	76,444	96,444	102,444	110,244	120,384	133,566 GAL/DAY
12 (Gallons per Minute)	53	67	71	77	84	93 GPM
13 STORAGE REQUIREMENTS						
14 Indoor Requirement = 400 Gal/Connection	38,222	48,222	51,222	55,122	60,192	66,783 GALLONS
15 Outside Irrigation Requirement = 2,848 Gal/Irrigated Acre	0	0	0	0	0	0 GALLONS
16 Fire Storage (1000 gpm for 2 hour)	120,000	120,000	120,000	120,000	120,000	120,000 GALLONS
17 Emergency Storage, 10%	3,822	4,822	5,122	5,512	6,019	6,678 GALLONS
18 Total Storage (Rounded)	160,000	170,000	180,000	180,000	190,000	190,000 GALLONS
19 DISTRIBUTION SYSTEM REQUIREMENTS						
20 Peak Hour Indoor Demand = 10.8(N^.64); N = # Connections	200	232	241	253	267	286 GPM
21 Peak Hour Outside Demand = 7.92 Gpm/Irrigated Acre	0	0	0	0	0	0 GPM
22 Total Peak Hour Demand	200	232	241	253	267	286 GPM
23 ADDITIONAL SOURCE CAPACITY NEEDED	0.189594356	0.239197531	0.254078483	0.273423721	0.298572531	0.331265983
24 Physical Source Capacity on Peak Day Basis	0	0	0	0	0	0 Gallon/Minute
25 Physical Source Capacity on Annual Volume Basis	0	0	0	0	0	0 AcreFeet/Year
26 Water Rights Source Capacity on Peak Day Basis	0	0	0	0	0	0 Gallon/Minute
27 Water Rights Source Capacity on Annual Volume Basis	0	0	0	0	0	0 AcreFeet/Year
28 ADDITIONAL STORAGE CAPACITY NEEDED						
29 Storage Capacity Needed	0	0	0	0	0	0 Gallons
	stantaneous Capa		nnual Volume Cap			
31 Well #4	350 G	Sallon/Minute	282 A	cre Feet/Year		
32						
33 Total Peak Day Sources		Sallon/Minute				
34 Safety Factor	1.25					
35 Total Peak Day Sources with Safety Factor	280 6	Gallon/Minute	282 A	cre Feet/Year		
36 EXISTING WATER RIGHTS SOURCE CAPACITY	0.044.0		1 0 1 7 1	E 10/		
37 Well #4	2,244 0	Gallon/Minute	1,64 <i>1 A</i>	cre Feet/Year		
38 20. Tatal Back Day Saurage	2 244 6	Collon/Minuto				
39 Total Peak Day Sources 40 Safety Factor	2,244 0	Gallon/Minute				
40 Safety Factor 41 Total Peak Day Sources with Safety Factor		Gallon/Minute	1647 4	cre Feet/Year		
41 Total Peak Day Sources with Safety Factor 42 EXISTING STORAGE CAPACITY	1,795 6	anon/minute	1,047 A	ULE LEEN LEAL		
42 EXISTING STORAGE CAPACITY 43 Reservoir	1,000,000	allong				
44	1,000,000 G	001015				
		Sallons				
45 Total Storage	1 000 000 6					
45 Total Storage	1,000,000 G					
46 ADDITIONAL CONNECTIONS SERVICEABLE WITH EXISTING C	APACITY					
46 ADDITIONAL CONNECTIONS SERVICEABLE WITH EXISTING C. 47 # based on Peak Day Physical Source Capacity	APACITY 408 C	Connections				
46 ADDITIONAL CONNECTIONS SERVICEABLE WITH EXISTING C. 47 48 49 40 40 40 40 40 40 40 40 40 40	408 C 534 C	Connections Connections				
46 ADDITIONAL CONNECTIONS SERVICEABLE WITH EXISTING C. 47 # based on Peak Day Physical Source Capacity 48 # based on Annual Physical Source Capacity 49 # based on Peak Day Water Rights Capacity	408 C 534 C 3,136 C	Connections Connections Connections				
46 ADDITIONAL CONNECTIONS SERVICEABLE WITH EXISTING C. 47 48 49 40 40 40 40 40 40 40 40 40 40	408 C 534 C 3,136 C 3,580 C	Connections Connections				

Notes: Line 2: # of Units in 2015 is calculated as follows: 25 AF sold to SWWC @ 0.45 af/home = 55.6 ERCs; LDS church = est. 5 ERCs; Hot Springs Mobile home park = 35 ERCs; total = 96 ERCs Line 3: South Willard water system is designed for indoor use only. Secondary irrigation sources are available to all connections. Line 37: Water Rights shown are for all future wells; 7 points of diversion are listed Lines 30-48: Existing source and storage data has been gathered from the following sources of information: interviews with the water agency, sanitary surveys, water rights information and Division of Drinking Water records.

reci	inical data for Cedar Ridge						
1	POPULATION AND IRRIGATED ACREAGE DATA:	2015	2020	2030	2040	2050	2060
2	# Units in Service Area	33	37	44	51	66	86 CONNECTIONS
3	# Acres of Outside Irrigation per Unit	0.45	0.45	0.45	0.45	0.45	0.45 ACRES/CONN.
4	Total # Acres of Outside Irrigation for the System	14.85	16.79	19.64	22.98	29.87	38.83 ACRES
5	SOURCE REQUIREMENTS						
6		14,7869	17	20	23	30	39 ACRE FEET
7	Annual Outdoor Usage = 1.87 Acre Feet/Irrigated Acre	28	31	37	43	56	73 ACRE FEET
8	Total Annual Usage	43	48	56	66	86	111 ACRE FEET
q	Peak Day Indoor Demand = 800 Gal./Day/Connection	26,400	29,840	34,913	40,848	53,102	69,033 GAL/DAY
	Peak Day Outdoor Demand = 3.96 Gpm/Irrigated Acre	84.681	95,715	111.986	131.024	170.331	221.431 GAL/DAY
11	Total Peak Day Demand	111,081	125,555	146,899	171,872	223,434	290.464 GAL/DAY
12		77	87	140,000	119	155	202 GPM
	STORAGE REQUIREMENTS	11	01	102	113	155	202 01 10
	Indoor Requirement = 400 Gal/Connection	13,200	14,920	17.456	20,424	26,551	34,517 GALLONS
	Outside Irrigation Requirement = 2,848 Gal/Irrigated Acre	42,293	47,804	55,930	65,438	85,070	110,591 GALLONS
	Fire Storage (500 gpm for 1/2 hour)	15,000	15,000	15,000	15,000	15,000	15,000 GALLONS
17		5,549	6,272	7,339	8,586	11,162	14,511 GALLONS
18	Total Storage (Rounded)	80,000	80,000	100,000	110,000	140,000	170,000 GALLONS
	DISTRIBUTION SYSTEM REQUIREMENTS						
	Peak Hour Indoor Demand = 10.8(N^.64); N = # Connections	101	109	121	134	158	187 GPM
21	Peak Hour Outside Demand = 7.92 Gpm/Irrigated Acre	118	133	156	182	237	308 GPM
22	Total Peak Hour Demand	219	242	277	316	395	495 GPM
23	ADDITIONAL SOURCE CAPACITY NEEDED	0.429697712	0.485688626	0.568255693	0.664859161	0.864316909	1.123611982
	Physical Source Capacity on Peak Day Basis	0	0	0	0	0	22 Gallon/Minute
	Physical Source Capacity on Annual Volume Basis	0	0	0	0	0	0 AcreFeet/Year
	Water Rights Source Capacity on Peak Day Basis	Ō	0	0	Ō	0	22 Gallon/Minute
	Water Rights Source Capacity on Annual Volume Basis	0	0	0	0	0	0 AcreFeet/Year
	ADDITIONAL STORAGE CAPACITY NEEDED				-		
	Storage Capacity Needed	0	0	0	0	0	20,000 Gallons
		nstantaneous Capa	icity A	nnual Volume Cap			20,000 000010
	Well (Tremonton Purchased Well)		allon/Minute		cre Feet/Year		
	Future Well (not drilled yet)		allon/Minute	101 A			
		00		0.4			
		0.0	allon/Minuto		cre Feet/Year		
	BRWCD Backup Connection	0 G	allon/Minute		cre Feet/Year cre Feet/Year		
34							
35	Total Peak Day Sources	224 G	Gallon/Minute				
35 36	Total Peak Day Sources Safety Factor	224 G 1.25	Sallon/Minute	0 A	cre Feet/Year		
35 36 37	Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor	224 G 1.25		0 A			
35 36 37 38	Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY	224 G 1.25 180 G	Gallon/Minute	0 A 181 A	cre Feet/Year cre Feet/Year		
35 36 37 38 39	Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Well (Tremonton Purchased Well)	224 G 1.25 180 G 224 G	Gallon/Minute Gallon/Minute Gallon/Minute	0 A <u>181 A</u> 83 A	cre Feet/Year cre Feet/Year cre Feet/Year		
35 36 37 38 39 40	Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY	224 G 1.25 180 G 224 G	Gallon/Minute	0 A <u>181 A</u> 83 A	cre Feet/Year cre Feet/Year		
35 36 37 38 39 40 41	Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Well (Tremonton Purchased Well) Future Well (not drilled yet)	224 G 1.25 180 G 224 G 0 G	Sallon/Minute Sallon/Minute Sallon/Minute Sallon/Minute	0 A <u>181 A</u> 83 A	cre Feet/Year cre Feet/Year cre Feet/Year		
35 36 37 38 39 40 41 42	Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Well (Tremonton Purchased Well) Future Well (not drilled yet) Total Peak Day Sources	224 G 1.25 180 G 224 G 0 G 224 G	Gallon/Minute Gallon/Minute Gallon/Minute	0 A <u>181 A</u> 83 A	cre Feet/Year cre Feet/Year cre Feet/Year		
35 36 37 38 39 40 41 42 43	Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Well (Tremonton Purchased Well) Future Well (not drilled yet) Total Peak Day Sources Safety Factor	224 G 1.25 180 G 224 G 0 G 224 G 1.25	allon/Minute allon/Minute allon/Minute allon/Minute	0 A <u>181 A</u> 83 A 94 A	cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year		
35 36 37 38 39 40 41 42 43 44	Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Well (Tremonton Purchased Well) Future Well (not drilled yet) Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor	224 G 1.25 180 G 224 G 0 G 224 G 1.25	Sallon/Minute Sallon/Minute Sallon/Minute Sallon/Minute	0 A <u>181 A</u> 83 A 94 A	cre Feet/Year cre Feet/Year cre Feet/Year		
35 36 37 38 39 40 41 42 43 44 45	Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Well (Tremoton Purchased Well) Future Well (not drilled yet) Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING STORAGE CAPACITY	224 G 1.25 180 G 224 G 0 G 224 G 1.25 180 G	allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute	0 A <u>181 A</u> 83 A 94 A	cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year		
35 36 37 38 39 40 41 42 43 44 45 46	Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Well (Tremonton Purchased Well) Future Well (not drilled yet) Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor	224 G 1.25 180 G 224 G 0 G 224 G 1.25	allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute	0 A <u>181 A</u> 83 A 94 A	cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year		
35 36 37 38 39 40 41 42 43 44 45 46 47	Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Well (Tremonton Purchased Well) Future Well (not drilled yet) Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING STORAGE CAPACITY Reservoir	224 G 1.25 180 G 224 G 0 G 224 G 1.25 180 G 150,000 G	Sallon/Minute Sallon/Minute Sallon/Minute Sallon/Minute Sallon/Minute SallonS	0 A <u>181 A</u> 83 A 94 A	cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year		
35 36 37 38 39 40 41 42 43 44 45 46 47 48	Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Well (Tremoton Purchased Well) Future Well (not drilled yet) Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING STORAGE CAPACITY Reservoir Total Storage	224 G 1.25 180 G 224 G 0 G 224 G 1.25 180 G 150,000 G 150,000 G	Sallon/Minute Sallon/Minute Sallon/Minute Sallon/Minute Sallon/Minute SallonS	0 A <u>181 A</u> 83 A 94 A	cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year		
35 36 37 38 39 40 41 42 43 44 45 46 47 48	Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Well (Tremonton Purchased Well) Future Well (not drilled yet) Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING STORAGE CAPACITY Reservoir	224 G 1.25 180 G 224 G 0 G 224 G 1.25 180 G 150,000 G 150,000 G	Sallon/Minute Sallon/Minute Sallon/Minute Sallon/Minute Sallon/Minute SallonS	0 A <u>181 A</u> 83 A 94 A	cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year		
35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50	Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Well (Tremonton Purchased Well) Future Well (not drilled yet) Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING STORAGE CAPACITY Reservoir Total Storage ADDITIONAL CONNECTIONS SERVICEABLE WITH EXISTING C # based on Peak Day Physical Source Capacity	224 G 1.25 180 G 224 G 0 G 224 G 1.25 180 G 150,000 G 150,000 G <b>APACITY</b>	Sallon/Minute Sallon/Minute Sallon/Minute Sallon/Minute Sallon/Minute SallonS	0 A <u>181 A</u> 83 A 94 A	cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year		
35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50	Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Well (Tremonton Purchased Well) Future Well (not drilled yet) Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING STORAGE CAPACITY Reservoir Total Storage ADDITIONAL CONNECTIONS SERVICEABLE WITH EXISTING C	224 G 1.25 180 G 224 G 0 G 224 G 1.25 180 G 150,000 G 150,000 G 150,000 G 4PACITY 44 C	Gallon/Minute Sallon/Minute Sallon/Minute Sallon/Minute Sallon/Minute Sallons Sallons	0 A <u>181 A</u> 83 A 94 A	cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year		
35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51	Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Well (Tremonton Purchased Well) Future Well (not drilled yet) Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING STORAGE CAPACITY Reservoir Total Storage ADDITIONAL CONNECTIONS SERVICEABLE WITH EXISTING C # based on Peak Day Physical Source Capacity	224 G 1.25 180 G 224 C 0 G 224 C 1.25 180 G 1.25 180 G 150,000 G 150,000 G 150,000 G APACITY 44 C 107 C	Sallon/Minute Sallon/Minute Sallon/Minute Sallon/Minute Sallon/Minute Sallons Sallons Sallons	0 A <u>181 A</u> 83 A 94 A	cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year		
35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52	Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Well (Tremonton Purchased Well) Future Well (not drilled yet) Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING STORAGE CAPACITY Reservoir Total Storage ADDITIONAL CONNECTIONS SERVICEABLE WITH EXISTING C # based on Peak Day Physical Source Capacity # based on Peak Day Water Rights Capacity	224 G 1.25 180 G 224 G 0 G 224 G 1.25 180 G 150,000 G 150,000 G 150,000 G <b>APACITY</b> 44 C 107 C 44 C	Sallon/Minute Sallon/Minute Sallon/Minute Sallon/Minute Sallon/Minute Sallon/Minute Sallon/Minute Sallons Sallons Sconnections Sconnections	0 A <u>181 A</u> 83 A 94 A	cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year		
35 36 37 38 39 40 41 42 43 44 45 46 47 48 50 51 52 53	Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Well (Tremonton Purchased Well) Future Well (not drilled yet) Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING STORAGE CAPACITY Reservoir Total Storage ADDITIONAL CONNECTIONS SERVICEABLE WITH EXISTING C # based on Peak Day Physical Source Capacity	224 G 1.25 180 G 224 G 0 G 224 G 1.25 180 G 150,000 G 150,000 G 150,000 G APACITY 44 C 107 C 44 C 107 C	Sallon/Minute Sallon/Minute Sallon/Minute Sallon/Minute Sallon/Minute Sallon/Minute Sallons Sallons Connections Co	0 A <u>181 A</u> 83 A 94 A	cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year		

Section between the base of solvage capacity 25 connections Notes: Line 2: # of homes in Cedar Ridge in 2014. Developer wants to plan on an additional 57 lots for phase 2 in the future, but would have to develop additional water supply. Line 3: Based on average water use in 2014-2015 with average lawn size calculated to match total water use per residential connection. Lines 5-12: Water Demands calculated based on Utah Division of Drinking Water Standards assuming Zone 4 for outside watering requirements. Lines 30-44: When data was not available for either the annual limit (ac-ft/yr) or the maximum flow rate (cfs or gpm), the other value was obtained by a straight units conversion.

Technical data for Coleman Trailer Court						
1 POPULATION AND IRRIGATED ACREAGE DATA:	2015	2020	2030	2040	2050	2060
2 # Units in Service Area	28	28	28	28	28	28 CONNECTIONS
3 # Acres of Outside Irrigation per Unit	0.01	0.01	0.01	0.01	0.01	0.01 ACRES/CONN.
4 Total # Acres of Outside Irrigation for the System	0.26	0.26	0.26	0.26	0.26	0.26 ACRES
5 SOURCE REQUIREMENTS						
6 Annual Indoor Usage = 146,000 Gal/Year/Connection	13	13	13	13	13	13 ACRE FEET
7 Annual Outdoor Usage = 1.87 Acre Feet/Irrigated Acre	0	0	0	0	0	0 ACRE FEET
8 Total Annual Usage	13	13	13	13	13	13 ACRE FEET
9 Peak Day Indoor Demand = 800 Gal./Day/Connection	22,400	22,400	22,400	22,400	22,400	22,400 GAL/DAY
10 Peak Day Outdoor Demand = 3.96 Gpm/Irrigated Acre	1,466	1,466	1,466	1,466	1,466	1,466 GAL/DAY
11 Total Peak Day Demand	23,866	23,866	23,866	23,866	23,866	23,866 GAL/DAY
12 (Gallons per Minute)	17	17	17	17	17	17 GPM
13 STORAGE REQUIREMENTS						
14 Indoor Requirement = 400 Gal/Connection	11,200	11,200	11,200	11,200	11,200	11,200 GALLONS
15 Outside Irrigation Requirement = 2,848 Gal/Irrigated Acre	732	732	732	732	732	732 GALLONS
16 Fire Storage (500 gpm for 1/2 hour)	15,000	15,000	15,000	15,000	15,000	15,000 GALLONS
17 Emergency Storage, 10%	1,193	1,193	1,193	1,193	1,193	1,193 GALLONS
18 Total Storage (Rounded)	30,000	30,000	30,000	30,000	30,000	30,000 GALLONS
19 DISTRIBUTION SYSTEM REQUIREMENTS					•	
20 Peak Hour Indoor Demand = 10.8(N^.64); N = # Connections	91	91	91	91	91	91 GPM
21 Peak Hour Outside Demand = 7.92 Gpm/Irrigated Acre	2	2	2	2	2	2 GPM
22 Total Peak Hour Demand	93	93	93	93	93	93 GPM
23 ADDITIONAL SOURCE CAPACITY NEEDED						
24 Physical Source Capacity on Peak Day Basis	0	0	0	0	0	0 Gallon/Minute
25 Physical Source Capacity on Annual Volume Basis	õ	Ő	Ő	0	Ő	0 AcreFeet/Year
26 Water Rights Source Capacity on Peak Day Basis	ŏ	Ő	Ő	Ő	ő	0 Gallon/Minute
27 Water Rights Source Capacity on Annual Volume Basis	1	1	1	1	1	1 AcreFeet/Year
28 ADDITIONAL STORAGE CAPACITY NEEDED						
28 ADDITIONAL STORAGE CAPACITY NEEDED 29 Storage Capacity Needed	18.000	18.000	18.000	18.000	18.000	18,000 Gallons
29 Storage Capacity Needed	18,000	18,000	18,000 Jal Volume Capacit	18,000	18,000	18,000 Gallons
29 Storage Capacity Needed 30 EXISTING PHYSICAL SOURCE CAPACITY	Instantaneous Capacity	Annu	al Volume Capacit	ty	18,000	18,000 Gallons
29 Storage Capacity Needed 30 EXISTING PHYSICAL SOURCE CAPACITY 31 Well	Instantaneous Capacity 45 Gallo	Annu Annu	ual Volume Capacit 36 Acre	ty Feet/Year	18,000	18,000 Gallons
29 Storage Capacity Needed 30 EXISTING PHYSICAL SOURCE CAPACITY 31 Well 32 BRWCD Backup Connection	Instantaneous Capacity 45 Gallo	Annu	ual Volume Capacit 36 Acre	ty	18,000	18,000 Gallons
29 Storage Capacity Needed 30 EXISTING PHYSICAL SOURCE CAPACITY 31 Well 32 BRWCD Backup Connection 33	Instantaneous Capacity 45 Gallo 50 Gallo	Annu on/Minute on/Minute	ual Volume Capacit 36 Acre	ty Feet/Year	18,000	18,000 Gallons
29 Storage Capacity Needed 30 EXISTING PHYSICAL SOURCE CAPACITY 31 Weil 32 BRWCD Backup Connection 33 34 Total Peak Day Sources	Instantaneous Capacity 45 Gallo 50 Gallo 95 Gallo	Annu Annu	ual Volume Capacit 36 Acre	ty Feet/Year	18,000	18,000 Gallons
29 Storage Capacity Needed 30 EXISTING PHYSICAL SOURCE CAPACITY 31 Weil 32 BRWCD Backup Connection 33 34 Total Peak Day Sources 35 Safety Factor	Instantaneous Capacity 45 Gallo 50 Gallo 95 Gallo 1.25	Annu on/Minute on/Minute on/Minute	ual Volume Capacit 36 Acre 0 Acre	ty Feet/Year Feet/Year	18,000	18,000 Gallons
29 Storage Capacity Needed 30 EXISTING PHYSICAL SOURCE CAPACITY 31 Well 32 BRWCD Backup Connection 33 4 Total Peak Day Sources 35 Safety Factor 36 Total Peak Day Sources with Safety Factor	Instantaneous Capacity 45 Gallo 50 Gallo 95 Gallo 1.25	Annu on/Minute on/Minute	ual Volume Capacit 36 Acre 0 Acre	ty Feet/Year	18,000	18,000 Gallons
29 Storage Capacity Needed 30 EXISTING PHYSICAL SOURCE CAPACITY 31 Weil 32 BRWCD Backup Connection 33 34 Total Peak Day Sources 35 Safety Factor 36 Total Peak Day Sources with Safety Factor 37 EXISTING WATER RIGHTS SOURCE CAPACITY	Instantaneous Capacity 45 Galit 50 Galit 95 Galit 1.25 76 Galit	Annu on/Minute on/Minute on/Minute	ual Volume Capacit 36 Acre 0 Acre 36 Acre	ty Feet/Year Feet/Year Feet/Year	18,000	18,000 Gallons
29 Storage Capacity Needed 30 EXISTING PHYSICAL SOURCE CAPACITY 31 Weil 32 BRWCD Backup Connection 33 34 Total Peak Day Sources 35 Safety Factor 36 Total Peak Day Sources with Safety Factor 37 EXISTING WATER RIGHTS SOURCE CAPACITY 38 Weil	Instantaneous Capacity 45 Galt 50 Galt 95 Galt 1.25 76 Galt 45 Galt	Annu on/Minute on/Minute on/Minute on/Minute	ual Volume Capacil 36 Acre 0 Acre <u>36 Acre</u> 12 Acre	ty Feet/Year Feet/Year Feet/Year	18,000	18,000 Gallons
29 Storage Capacity Needed 30 EXISTING PHYSICAL SOURCE CAPACITY 31 Well 32 BRWCD Backup Connection 33 34 Total Peak Day Sources 35 Safety Factor 36 Total Peak Day Sources with Safety Factor 37 EXISTING WATER RIGHTS SOURCE CAPACITY 38 Well 30 BRWCD Backup Connection	Instantaneous Capacity 45 Galt 50 Galt 95 Galt 1.25 76 Galt 45 Galt	Annu on/Minute on/Minute on/Minute	ual Volume Capacil 36 Acre 0 Acre <u>36 Acre</u> 12 Acre	ty Feet/Year Feet/Year Feet/Year	18,000	18,000 Gallons
29 Storage Capacity Needed 30 EXISTING PHYSICAL SOURCE CAPACITY 31 Weil 32 BRWCD Backup Connection 33 34 Total Peak Day Sources 35 Safety Factor 36 Total Peak Day Sources with Safety Factor 37 EXISTING WATER RIGHTS SOURCE CAPACITY 38 Weil 39 BRWCD Backup Connection 40	Instantaneous Capacity 45 Galit 50 Galit 95 Galit 1.25 76 Galit 45 Galit 0 Galit	Annu on/Minute on/Minute on/Minute on/Minute on/Minute	ual Volume Capacil 36 Acre 0 Acre <u>36 Acre</u> 12 Acre	ty Feet/Year Feet/Year Feet/Year	18,000	18,000 Gallons
29 Storage Capacity Needed 30 EXISTING PHYSICAL SOURCE CAPACITY 31 Weil 32 BRWCD Backup Connection 33 34 Total Peak Day Sources 35 Safety Factor 36 Total Peak Day Sources with Safety Factor 37 EXISTING WATER RIGHTS SOURCE CAPACITY 38 Weil 39 BRWCD Backup Connection 40 41 Total Peak Day Sources	Instantaneous Capacity 45 Galit 50 Galit 95 Galit 1.25 76 Galit 45 Galit 0 Galit 45 Galit	Annu on/Minute on/Minute on/Minute on/Minute	ual Volume Capacil 36 Acre 0 Acre <u>36 Acre</u> 12 Acre	ty Feet/Year Feet/Year Feet/Year	18,000	18,000 Gallons
29 Storage Capacity Needed 30 EXISTING PHYSICAL SOURCE CAPACITY 31 Weil 32 BRWCD Backup Connection 33 44 Total Peak Day Sources 35 Safety Factor 36 Total Peak Day Sources with Safety Factor 37 EXISTING WATER RIGHTS SOURCE CAPACITY 38 Weil 39 BRWCD Backup Connection 40 41 Total Peak Day Sources 42 Safety Factor	Instantaneous Capacity 45 Galit 50 Galit 1.25 76 Galit 45 Galit 45 Galit 45 Galit 1.25	Anni on/Minute on/Minute on/Minute on/Minute on/Minute	ual Volume Capacil 36 Acre 0 Acre 36 Acre 36 Acre 12 Acre 0 Acre	ty Feet/Year Feet/Year Feet/Year Feet/Year	18,000	18,000 Gallons
29 Storage Capacity Needed 30 EXISTING PHYSICAL SOURCE CAPACITY 31 Weil 32 BRWCD Backup Connection 33 34 Total Peak Day Sources 35 Safety Factor 36 Total Peak Day Sources with Safety Factor 37 EXISTING WATER RIGHTS SOURCE CAPACITY 38 Weil 39 BRWCD Backup Connection 40 41 Total Peak Day Sources	Instantaneous Capacity 45 Galit 50 Galit 1.25 76 Galit 45 Galit 45 Galit 45 Galit 1.25	Annu on/Minute on/Minute on/Minute on/Minute on/Minute	ual Volume Capacil 36 Acre 0 Acre 36 Acre 36 Acre 12 Acre 0 Acre	ty Feet/Year Feet/Year Feet/Year	18,000	18,000 Gallons
29 Storage Capacity Needed 30 EXISTING PHYSICAL SOURCE CAPACITY 31 Well 32 BRWCD Backup Connection 33 34 Total Peak Day Sources 35 Safety Factor 36 Total Peak Day Sources with Safety Factor 37 EXISTING WATER RIGHTS SOURCE CAPACITY 38 Well 39 BRWCD Backup Connection 40 41 Total Peak Day Sources 42 Safety Factor 43 Total Peak Day Sources with Safety Factor	Instantaneous Capacity 45 Galit 50 Galit 1.25 76 Galit 45 Galit 45 Galit 45 Galit 1.25	Anni on/Minute on/Minute on/Minute on/Minute on/Minute on/Minute on/Minute	ual Volume Capacil 36 Acre 0 Acre 36 Acre 36 Acre 12 Acre 0 Acre	ty Feet/Year Feet/Year Feet/Year Feet/Year	18,000	18,000 Gallons
29       Storage Capacity Needed         30       EXISTING PHYSICAL SOURCE CAPACITY         31       Weil         32       BRWCD Backup Connection         33       Total Peak Day Sources         34       Total Peak Day Sources with Safety Factor         36       Total Peak Day Sources with Safety Factor         37       EXISTING WATER RIGHTS SOURCE CAPACITY         38       Weil         39       BRWCD Backup Connection         40       Total Peak Day Sources         41       Total Peak Day Sources         42       Safety Factor         43       Total Peak Day Sources with Safety Factor         44       Existing STORAGE CAPACITY         45       Reservoir	Instantaneous Capacity 45 Galit 50 Galit 95 Galit 1.25 76 Galit 45 Galit 0 Galit 45 Galit 1.25 36 Galit	Anni on/Minute on/Minute on/Minute on/Minute on/Minute on/Minute on/Minute	ual Volume Capacil 36 Acre 0 Acre 36 Acre 36 Acre 12 Acre 0 Acre	ty Feet/Year Feet/Year Feet/Year Feet/Year	18,000	18,000 Gallons
29       Storage Capacity Needed         30       EXISTING PHYSICAL SOURCE CAPACITY         31       Well         32       BRWCD Backup Connection         33       Total Peak Day Sources         35       Safety Factor         36       Total Peak Day Sources with Safety Factor         37       EXISTING WATER RIGHTS SOURCE CAPACITY         38       Well         39       BRWCD Backup Connection         40       41         41       Total Peak Day Sources         42       Safety Factor         43       Total Peak Day Sources with Safety Factor         44       Safety Factor         43       Total Peak Day Sources with Safety Factor         44       Existing StorAGE CAPACITY         45       Reservoir         46       StorAGE CAPACITY	Instantaneous Capacity 45 Galit 50 Galit 95 Galit 1.25 76 Galit 0 Galit 1.25 36 Galit 1.25 36 Galit 12,000 Galit	Annu on/Minute on/Minute on/Minute on/Minute on/Minute on/Minute on/Minute	ual Volume Capacil 36 Acre 0 Acre 36 Acre 36 Acre 12 Acre 0 Acre	ty Feet/Year Feet/Year Feet/Year Feet/Year	18,000	18,000 Gallons
29       Storage Capacity Needed         30       EXISTING PHYSICAL SOURCE CAPACITY         31       Weil         32       BRWCD Backup Connection         33       4         34       Total Peak Day Sources         35       Safety Factor         36       Total Peak Day Sources with Safety Factor         37       EXISTING WATER RIGHTS SOURCE CAPACITY         38       Weil         39       BRWCD Backup Connection         40       41         41       Total Peak Day Sources         42       Safety Factor         43       Total Peak Day Sources with Safety Factor         44       EXISTING STORAGE CAPACITY         45       Reservoir         46       Total Storage	Instantaneous Capacity 45 Galit 50 Galit 95 Galit 1.25 76 Galit 45 Galit 45 Galit 1.25 36 Galit 12,000 Galit 12,000 Galit	Annu on/Minute on/Minute on/Minute on/Minute on/Minute on/Minute on/Minute	ual Volume Capacil 36 Acre 0 Acre 36 Acre 36 Acre 12 Acre 0 Acre	ty Feet/Year Feet/Year Feet/Year Feet/Year	18,000	18,000 Gallons
29       Storage Capacity Needed         30       EXISTING PHYSICAL SOURCE CAPACITY         31       Weil         32       BRWCD Backup Connection         33       Total Peak Day Sources         34       Total Peak Day Sources with Safety Factor         36       Total Peak Day Sources with Safety Factor         38       Weil         39       BRWCD Backup Connection         40       41         41       Total Peak Day Sources         42       Safety Factor         43       Total Peak Day Sources         42       Safety Factor         43       Total Peak Day Sources with Safety Factor         44       Existing STORAGE CAPACITY         45       Reservoir         46       Total Storage         48       ADDITIONAL CONNECTIONS SERVICEABLE WITH EXISTING	Instantaneous Capacity 45 Galt 50 Galt 1.25 76 Galt 45 Galt 45 Galt 1.25 36 Galt 12,000 Galt 12,000 Galt CCPACITY	Anni on/Minute on/Minute on/Minute on/Minute on/Minute on/Minute on/Minute on/Minute on/S	ual Volume Capacil 36 Acre 0 Acre 36 Acre 36 Acre 12 Acre 0 Acre	ty Feet/Year Feet/Year Feet/Year Feet/Year	18,000	18,000 Gallons
29       Storage Capacity Needed         30       EXISTING PHYSICAL SOURCE CAPACITY         31       Weil         32       BRWCD Backup Connection         33       Total Peak Day Sources         35       Safety Factor         36       Total Peak Day Sources with Safety Factor         37       EXISTING WATER RIGHTS SOURCE CAPACITY         38       Well         39       BRWCD Backup Connection         40       41         41       Total Peak Day Sources         42       Safety Factor         43       Total Peak Day Sources with Safety Factor         44       EXISTING STORAGE CAPACITY         45       Reservoir         46       Total Storage         47       Total Storage         48       ADDITIONAL CONNECTIONS SERVICEABLE WITH EXISTING         49       # based on Peak Day Physical Source Capacity	Instantaneous Capacity 45 Galit 50 Galit 95 Galit 1.25 76 Galit 45 Galit 1.25 36 Galit 12,000 Galit 12,000 Galit <b>CAPACITY</b> 100 Coni	Annu on/Minute on/Minute on/Minute on/Minute on/Minute on/Minute on/Minute on/Minute on/Sons	ual Volume Capacil 36 Acre 0 Acre 36 Acre 36 Acre 12 Acre 0 Acre	ty Feet/Year Feet/Year Feet/Year Feet/Year	18,000	18,000 Gallons
29       Storage Capacity Needed         30       EXISTING PHYSICAL SOURCE CAPACITY         31       Weil         32       BRWCD Backup Connection         33       Total Peak Day Sources         34       Total Peak Day Sources with Safety Factor         37 <b>EXISTING WATER RIGHTS SOURCE CAPACITY</b> 38       Weil         39       BRWCD Backup Connection         40       41         41       Total Peak Day Sources with Safety Factor         42       Safety Factor         43       Total Peak Day Sources with Safety Factor         44       EXISTING STORAGE CAPACITY         45       Reservoir         46       Total Storage         47       Total Storage         48       ADDITIONAL CONNECTIONS SERVICEABLE WITH EXISTING         49       # based on Peak Day Physical Source Capacity         50       # based on Annual Physical Source Capacity	Instantaneous Capacity 45 Galit 50 Galit 95 Galit 1.25 76 Galit 45 Galit 1.25 36 Galit 12,000 Galit 12,000 Galit 12,000 Galit CAPACITY 100 Cont 50 Cont	Annu on/Minute on/Minute on/Minute on/Minute on/Minute on/Minute on/Minute on/Minute ons ons	ual Volume Capacil 36 Acre 0 Acre 36 Acre 36 Acre 12 Acre 0 Acre	ty Feet/Year Feet/Year Feet/Year Feet/Year	18,000	18,000 Gallons
29       Storage Capacity Needed         30       EXISTING PHYSICAL SOURCE CAPACITY         31       Well         32       BRWCD Backup Connection         33	Instantaneous Capacity 45 Galt 50 Galt 1.25 76 Galt 45 Galt 45 Galt 45 Galt 1.25 36 Galt 12,000 Galt 12,000 Galt CAPACITY 100 Con 50 Con 33 Con	Anni on/Minute on/Minute on/Minute on/Minute on/Minute on/Minute on/Minute ons ons nections nections nections	ual Volume Capacil 36 Acre 0 Acre 36 Acre 36 Acre 12 Acre 0 Acre	ty Feet/Year Feet/Year Feet/Year Feet/Year	18,000	18,000 Gallons
29       Storage Capacity Needed         30       EXISTING PHYSICAL SOURCE CAPACITY         31       Well         32       BRWCD Backup Connection         33       Total Peak Day Sources         35       Safety Factor         36       Total Peak Day Sources with Safety Factor         37       EXISTING WATER RIGHTS SOURCE CAPACITY         38       Well         39       BRWCD Backup Connection         40       41         41       Total Peak Day Sources         42       Safety Factor         43       Total Peak Day Sources with Safety Factor         44       EXISTING STORAGE CAPACITY         45       Reservoir         46       Total Storage         47       Total Storage         48       ADDITIONAL CONNECTIONS SERVICEABLE WITH EXISTING         49       # based on Annual Physical Source Capacity         50       # based on Annual Physical Source Capacity         51       # based on Annual Water Rights Capacity	Instantaneous Capacity 45 Galit 50 Galit 95 Galit 1.25 76 Galit 45 Galit 1.25 36 Galit 12,000 Galit 12,000 Galit 12,000 Galit CAPACITY 100 Cont 50 Cont	Annu on/Minute on/Minute on/Minute on/Minute on/Minute on/Minute on/Minute on/Minute on/Minute on/S ons ections rections rections rections rections rections	ual Volume Capacil 36 Acre 0 Acre 36 Acre 36 Acre 12 Acre 0 Acre	ty Feet/Year Feet/Year Feet/Year Feet/Year	18,000	18,000 Gallons
29       Storage Capacity Needed         30       EXISTING PHYSICAL SOURCE CAPACITY         31       Well         32       BRWCD Backup Connection         33       Total Peak Day Sources         35       Safety Factor         36       Total Peak Day Sources with Safety Factor         37       EXISTING WATER RIGHTS SOURCE CAPACITY         38       Well         39       BRWCD Backup Connection         40       1         41       Total Peak Day Sources         42       Safety Factor         43       Total Peak Day Sources with Safety Factor         44       EXISTING STORAGE CAPACITY         45       Reservoir         46       Total Storage         47       Total Storage         48       ADDITIONAL CONNECTIONS SERVICEABLE WITH EXISTING         49       # based on Annual Physical Source Capacity         50       # based on Annual Physical Source Capacity         51       # based on Peak Day Water Rights Capacity	Instantaneous Capacity 45 Galit 50 Galit 95 Galit 1.25 76 Galit 0 Galit 12,000 Galit 12,000 Galit 12,000 Galit CAPACITY 100 Coni 50 Coni 33 Coni -2 Coni	Annu on/Minute on/Minute on/Minute on/Minute on/Minute on/Minute on/Minute on/Minute on/Minute on/S ons ections rections rections rections rections rections	ual Volume Capacil 36 Acre 0 Acre 36 Acre 36 Acre 12 Acre 0 Acre	ty Feet/Year Feet/Year Feet/Year Feet/Year	18,000	18,000 Gallons

s: <u>Line 2</u>: Coleman Mobile Home Court currently serves 28 mobile home units and is not expected to increase in the future. <u>Line 3</u>: Lawn size assumed to be very small (mobile homes) = 20' X 20' average lawn size = 0.00918 acres/connection. <u>Lines 5-22</u>: Water Demands calculated based on Utah Division of Drinking Water Standards assuming Zone 4 for outside watering requirements. <u>Lines 30-47</u>: Existing source and storage data has been gathered from the following sources of information: interviews with the water agency, sanitary surveys, water rights information and Division of Drinking Water records.

POPULATION AND IRRIGATED ACREAGE DATA:	2015	2020	2030	2040	2050	2060
2 # Units in Service Area	304	334	392	460	598	777 CONNECTIO
3 # Acres of Outside Irrigation per Unit	0.02	0.02	0.02	0.02	0.02	0.02 ACRES/CON
4 Total # Acres of Outside Irrigation for the System	5.24	5.75	6.75	7.92	10.30	13.39 ACRES
5 SOURCE REQUIREMENTS						
6 Annual Indoor Usage = 146,000 Gal/Year/Connection	136	150	176	206	268	348 ACRE FEET
7 Annual Outdoor Usage = 1.87 Acre Feet/Irrigated Acre	10	11	13	15	19	25 ACRE FEET
B Total Annual Usage	146	160	188	221	287	373 ACRE FEET
Peak Day Indoor Demand = 800 Gal./Day/Connection	243,200	266,987	313,344	367,750	478,076	621,498 GAL/DAY
D Peak Day Outdoor Demand = 3.96 Gpm/Irrigated Acre	29,869	32,790	38,484	45,165	58,715	76,330 GAL/DAY
1 Total Peak Day Demand	273,069	299,778	351,828	412,916	536,791	697,828 GAL/DAY
2 (Gallons per Minute)	189.63	208	244	287	373	485 GPM
STORAGE REQUIREMENTS						
Indoor Requirement = 400 Gal/Connection	121,600	133,494	156,672	183,875	239,038	310,749 GALLONS
5 Outside Irrigation Requirement = 2,848 Gal/Irrigated Acre	14,918	16,377	19,220	22,557	29,325	38,122 GALLONS
6 Fire Storage (500 gpm for 1/2 hour)	15,000	15,000	15,000	15,000	15,000	15,000 GALLONS
7 Emergency Storage, 10%	13,652	14,987	17,589	20,643	26,836	34,887 GALLONS
B Total Storage (Rounded)	170,000	180,000	210,000	240,000	310,000	400,000 GALLONS
				<b>_</b>	o	704 0014
D Peak Hour Indoor Demand = 10.8(N^.64); N = # Connections	419	445	493	546	646	764 GPM
Peak Hour Outside Demand = 7.92 Gpm/Irrigated Acre Total Peak Hour Demand	41	46	53	63	82 728	106 GPM
	461	491	547	609		870 GPM
3 ADDITIONAL SOURCE CAPACITY NEEDED	0.432199252	0.474472755 0	0.556855459	0.653542273	0.849604955	1.104486441
4 Physical Source Capacity on Peak Day Basis	0		0	-	0	46 Gallon/Minut
Physical Source Capacity on Annual Volume Basis	0	0	0	0	0	0 AcreFeet/Ye 0 Gallon/Minut
Water Rights Source Capacity on Peak Day Basis	0	0	0	0	0	
7 Water Rights Source Capacity on Annual Volume Basis ADDITIONAL STORAGE CAPACITY NEEDEL	U	U	U	U	0	0 AcreFeet/Ye
9 Storage Capacity Needed	0	0	0	0	0	0 Gallons
	stantaneous Capa			Annual Volume Car	-	0 Galions
1 Springs (Low avg. flow from 1990)		allon/Minute	<i>r</i>		cre Feet/Year	
2 Corinne Well 29-2044		allon/Minute			cre Feet/Year	
3 Corinne Well 29-3702 (Well not drilled yet)		allon/Minute			cre Feet/Year	
4 BRWCD Backup Connection on HWY 38		allon/Minute			cre Feet/Year	
	00 0	anon/minate		407	lore r eeu rear	
6 Total Peak Day Sources	548 G	allon/Minute				
7 Safety Factor	1.25	anonyminato				
B Total Peak Day Sources with Safety Factor		allon/Minute		479 A	cre Feet/Year	
EXISTING WATER RIGHTS SOURCE CAPACITY	.00 0					
) Springs	178 G	allon/Minute		12 A	cre Feet/Year	
Corinne Well 29-2044		allon/Minute			cre Feet/Year	
2 Corinne Well 29-3702 (Well not drilled yet)	206 G	allon/Minute		167 A	cre Feet/Year	
BRWCD Backup Conn. on HWY 38 (no contract w/BRWCD)	0 G	allon/Minute		0		
4 Total Peak Day Sources	627 G	allon/Minute				
5 Safety Factor	1.25					
6 Total Peak Day Sources with Safety Factor	502 G	allon/Minute		374 A	cre Feet/Year	
EXISTING STORAGE CAPACITY						
B Old South Reservoir	250,000 G					
9 New North Reservoir	1,000,000 G	Sallons				
0 Total Storage	1,250,000 G	allons				
ADDITIONAL CONNECTIONS SERVICEABLE WITH EXISTING C						
2 # based on Peak Day Physical Source Capacity		onnections				
3 # based on Annual Physical Source Capacity		onnections				
4 # based on Peak Day Water Rights Capacity		onnections				
# based on Annual Water Rights Capacity 3 # based on Storage Capacity		onnections connections				

Line 3: Based on average water use in 2014-2015 with average lawn size calculated to match total water use per residential connection.

Lines 5-18: Water Demands calculated based on Utah Division of Drinking Water Standards assuming Zone 4 for outside watering requirements. Lines 24-35: When data was not available for either the annual limit (ac-ft/yr) or the maximum flow rate (cfs or gpm), the other value was obtained by a straight units conversion.

recn	nical data for Deweyville Town						
	POPULATION AND IRRIGATED ACREAGE DATA:	2015	2020	2030	2040	2050	2060
	# Units in Service Area	132	146	171	201	261	339 CONNECTIONS
	# Acres of Outside Irrigation per Unit	0.16	0.16	0.16	0.16	0.16	0.16 ACRES/CONN.
	Total # Acres of Outside Irrigation for the System	21.12	23.33	27.38	32.13	41.77	54.31 ACRES
	SOURCE REQUIREMENTS	50	05				
6	Annual Indoor Usage = 146,000 Gal/Year/Connection	59 39	65	77	90	117	152 ACRE FEET
	Annual Outdoor Usage = 1.87 Acre Feet/Irrigated Acre Wholesale Deliveries to BRWCD Collinston Project	101	44 130	51 166	60 202	78 238	102 ACRE FEET 273 ACRE FEET
0	Total Annual Usage	200	239	294	352	433	527 ACRE FEET
10	Peak Day Indoor Demand = 800 Gal./Day/Connection	105,600	116,647	136,901	160,671	208,872	271,534 GAL/DAY
	Peak Day Outdoor Demand = 3.96 Gpm/Irrigated Acre	120,435	133.034	156,133	183,242	238,215	309,679 GAL/DAY
	Wholesale Deliveries to BRWCD Collinston Project	266,400	342,582	436,985	530,650	624,554	719,011 GAL/DAY
13	Total Peak Day Demand	492,435	592,263	730,019	874,563	1,071,641	1,300,224 GAL/DAY
14	(Gallons per Minute)	342	411	507	607	744	903 GPM
15	STORAGE REQUIREMENTS						
	Indoor Requirement = 400 Gal/Connection	52,800	58,324	68,450	80,336	104,436	135,767 GALLONS
	Outside Irrigation Requirement = 2,848 Gal/Irrigated Acre	60,150	66,442	77,979	91,518	118,974	154,666 GALLONS
18	Wholesale Deliveries Requirement = 1/2 Daily Demand	133,200	171,291	218,492	265,325	312,277	359,506 GALLONS
19	Fire Storage (1,000 gpm for 1/2 hour)	60,000	60,000	60,000	60,000	60,000	60,000 GALLONS
	Emergency Storage, 10%	24,615	29,606	36,492	43,718	53,569	64,994 GALLONS
21	Total Storage (Rounded)	330,000	390,000	460,000	540,000	650,000	770,000 GALLONS
	DISTRIBUTION SYSTEM REQUIREMENTS						
	Peak Hour Indoor Demand = 10.8(N^.64); N = # Connections	246	262	290	322	380	450 GPM
	Peak Hour Outside Demand = 7.92 Gpm/Irrigated Acre	167	185	217	255	331	430 GPM
25	Average Daily Demand for Wholesale Deliveries	370	238	303	369	434	499 GPM
26	Total Peak Hour Demand	783	685	811	945	1,145	1,379 GPM
	ADDITIONAL SOURCE CAPACITY NEEDED	0.611203813	0.735109992	0.906089969	1.085496746	1.330107799	1.613822361
	Physical Source Capacity on Peak Day Basis	0	0	59	160	297	455 Gallon/Minute
	Physical Source Capacity on Annual Volume Basis	0	0	0	0	0	0 AcreFeet/Year
	Water Rights Source Capacity on Peak Day Basis	0	0	0	15	152 0	311 Gallon/Minute
	Water Rights Source Capacity on Annual Volume Basis ADDITIONAL STORAGE CAPACITY NEEDEL	0	0	0	0	0	47 AcreFeet/Year
	Storage Capacity Needed	0	0	0	0	0	0 Gallons
	Sidiage Capacity Needed	0	0				
24		netantanoous Cons	oity		nnual Valuma Can	acity	
		nstantaneous Capa		A	nnual Volume Cap		
35	Coldwater Springs (based on flow since redevel. in 2016)	30 0	Gallon/Minute	A	5 Å	cre Feet/Year	
35 36	Coldwater Springs (based on flow since redevel. in 2016) Willow Spring (based on low flows in July 2011)	30 G 10 G	Sallon/Minute Sallon/Minute	A	5 Å 72 Å	cre Feet/Year cre Feet/Year	
35 36 37	Coldwater Springs (based on flow since redevel. in 2016) Willow Spring (based on low flows in July 2011) Old Well	30 G 10 G 80 G	Gallon/Minute Gallon/Minute Gallon/Minute	A	5 A 72 A 65 A	cre Feet/Year cre Feet/Year cre Feet/Year	
35 36 37 38	Coldwater Springs (based on flow since redevel. in 2016) Willow Spring (based on low flows in July 2011) Old Well New Well	30 G 10 G 80 G 440 G	Gallon/Minute Gallon/Minute Gallon/Minute Gallon/Minute	A	5 A 72 A 65 A 355 A	cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year	
35 36 37 38 39	Coldwater Springs (based on flow since redevel. in 2016) Willow Spring (based on low flows in July 2011) Old Well	30 G 10 G 80 G 440 G	Gallon/Minute Gallon/Minute Gallon/Minute	A	5 A 72 A 65 A 355 A	cre Feet/Year cre Feet/Year cre Feet/Year	
35 36 37 38 39 40	Coldwater Springs (based on flow since redevel. in 2016) Willow Spring (based on low flows in July 2011) Old Well New Well	30 G 10 G 80 G 440 G 0 G	Gallon/Minute Gallon/Minute Gallon/Minute Gallon/Minute	A	5 A 72 A 65 A 355 A	cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year	
35 36 37 38 39 40 41	Coldwater Springs (based on flow since redevel, in 2016) Willow Spring (based on low flows in July 2011) Old Well New Well BRWCD Deweyville Area Water Rights	30 G 10 G 80 G 440 G 0 G	Gallon/Minute Gallon/Minute Gallon/Minute Gallon/Minute Gallon/Minute	A	5 A 72 A 65 A 355 A	cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year	
35 36 37 38 39 40 41 42	Coldwater Springs (based on flow since redevel. in 2016) Willow Spring (based on low flows in July 2011) Old Well New Well BRWCD Deweyville Area Water Rights Total Peak Day Sources	30 G 10 G 440 G 560 G 1.25	Gallon/Minute Gallon/Minute Gallon/Minute Gallon/Minute Gallon/Minute	A	5 A 72 A 65 A 355 A 150 A	cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year	
35 36 37 38 39 40 41 42 43 44	Coldwater Springs (based on flow since redevel. in 2016) Willow Spring (based on low flows in July 2011) Old Well New Well BRWCD Deweyville Area Water Rights Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY	30 G 10 G 440 G 560 G 1.25	Sallon/Minute Sallon/Minute Sallon/Minute Sallon/Minute Sallon/Minute	A	5 A 72 A 65 A 355 A 150 A	cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year	
35 36 37 38 39 40 41 42 43 44 45	Coldwater Springs (based on flow since redevel. in 2016) Willow Spring (based on low flows in July 2011) Old Well New Well BRWCD Deweyville Area Water Rights Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Coldwater Spring - 29-2144	30 C 10 C 440 C 560 C 1.25 448 C 249 C	Sallon/Minute Sallon/Minute Sallon/Minute Sallon/Minute Sallon/Minute Sallon/Minute Sallon/Minute Sallon/Minute	A	5 A 72 A 65 A 355 A 150 A 647 A 118 A	cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year	
35 36 37 38 39 40 41 42 43 44 45 46	Coldwater Springs (based on flow since redevel, in 2016) Willow Spring (based on low flows in July 2011) Old Well New Well BRWCD Deweyville Area Water Rights Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Coldwater Spring - 29-2144 Willow Spring - 29-2643	30 C 10 C 440 C 560 C 1.25 448 C 249 C 42 C	sallon/Minute sallon/Minute sallon/Minute sallon/Minute sallon/Minute sallon/Minute sallon/Minute sallon/Minute sallon/Minute sallon/Minute	A	5 5 72 A 65 A 355 A 150 A 647 A 118 A 112 A	cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year	
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$\begin{array}{c} 355\\ 36\\ 37\\ 38\\ 39\\ 40\\ 41\\ 42\\ 43\\ 44\\ 45\\ 46\\ 47\\ 48\\ 49\\ 50\\ 51\\ 52\\ 53\\ 54\\ 55\\ 56\end{array}$	Coldwater Springs (based on flow since redevel, in 2016) Willow Spring (based on low flows in July 2011) Old Well New Well BRWCD Deweyville Area Water Rights Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Coldwater Spring - 29-2144 Willow Spring - 29-2144 Total Peak Day Sources Safety Factor Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING STORAGE CAPACITY Tank 1	30 C 10 C 440 C 560 C 1.25 448 C 449 C 42 C 449 C 42 C 449 C 740 C 1.25 592 C	Sallon/Minute Sallon/Minute Sallon/Minute Sallon/Minute Sallon/Minute Sallon/Minute Sallon/Minute Sallon/Minute Sallon/Minute Sallon/Minute Sallon/Minute Sallon/Minute Sallon/Minute SallonS	A	5 A 72 A 65 A 355 A 150 A 647 A 118 A 112 A 100 A 150 A	cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year	
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$\begin{array}{c} 355\\ 36\\ 37\\ 38\\ 39\\ 40\\ 41\\ 42\\ 43\\ 44\\ 45\\ 46\\ 47\\ 48\\ 49\\ 50\\ 51\\ 52\\ 53\\ 54\\ 55\\ 55\\ 56\\ 57\\ 58\\ 59\\ \end{array}$	Coldwater Springs (based on flow since redevel, in 2016) Willow Spring (based on low flows in July 2011) Old Well New Well BRWCD Deweyville Area Water Rights Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Coldwater Spring - 29-2144 Willow Spring - 29-2144 Willow Spring - 29-2144 Well - 29-4140 BRWCD Deweyville Area Water Rights Total Peak Day Sources Safety Factor Total Storage ADDITIONAL CONNECTIONS SERVICEABLE WITH EXISTING CO	30 0 10 0 440 0 560 0 1.25 448 0 249 0 42 0 449 0 42 0 1.25 592 0 150,000 0 500,000 0 800,000 0 500,000 0	sailon/Minute Sailon/Minute Sailon/Minute Sailon/Minute Sailon/Minute Sailon/Minute Sailon/Minute Sailon/Minute Sailon/Minute Sailon/Minute Sailon/Minute Sailon/Minute Sailon/Minute Sailon/Minute Sailon/Sailons Sailons	A	5 A 72 A 65 A 355 A 150 A 647 A 118 A 112 A 100 A 150 A	cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year	
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$\begin{array}{c} 35\\ 36\\ 37\\ 38\\ 39\\ 40\\ 41\\ 42\\ 43\\ 44\\ 45\\ 46\\ 47\\ 48\\ 49\\ 50\\ 51\\ 52\\ 53\\ 54\\ 55\\ 56\\ 57\\ 58\\ 59\\ 60\\ 61\\ \end{array}$	Coldwater Springs (based on flow since redevel, in 2016) Willow Spring (based on low flows in July 2011) Old Well New Well BRWCD Deweyville Area Water Rights Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Coldwater Spring - 29-2144 Willow Spring - 29-2144 Willow Spring - 29-2144 Well - 29-4140 BRWCD Deweyville Area Water Rights Total Peak Day Sources Safety Factor Total Storage ADDITIONAL CONNECTIONS SERVICEABLE WITH EXISTING CO	30 C 10 C 10 C 440 C 560 C 1.25 448 C 249 C 448 C 449 C 1.25 592 C 150.000 C 150.000 C 800,000 C 800,000 C	sallon/Minute Sallon/Minute Sallon/Minute Sallon/Minute Sallon/Minute Sallon/Minute Sallon/Minute Sallon/Minute Sallon/Minute Sallon/Minute Sallon/Minute Sallon/Minute Sallon/Minute Sallon/Sallons Sallons Sallons Sallons	A	5 A 72 A 65 A 355 A 150 A 647 A 118 A 112 A 100 A 150 A	cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year	
$\begin{array}{c} 35\\ 36\\ 37\\ 38\\ 39\\ 40\\ 41\\ 42\\ 43\\ 44\\ 45\\ 46\\ 47\\ 48\\ 49\\ 50\\ 51\\ 52\\ 53\\ 54\\ 55\\ 56\\ 57\\ 58\\ 59\\ 60\\ 61\\ 62\\ \end{array}$	Coldwater Springs (based on flow since redevel, in 2016) Willow Spring (based on low flows in July 2011) Old Well New Well BRWCD Deweyville Area Water Rights Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Coldwater Spring - 29-2144 Willow Spring - 29-2144 Willow Spring - 29-243 New Well - 29-4140 BRWCD Deweyville Area Water Rights Total Peak Day Sources Safety Factor Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING STORAGE CAPACITY Tank 1 Tank 2 Tank 3 Total Storage ADDITIONAL CONNECTIONS SERVICEABLE WITH EXISTING G # based on Peak Day Physical Source Capacity # based on Annual Physical Source Capacity	30 0 10 0 10 0 440 0 560 0 1.25 448 0 449 0 42 0 449 0 42 0 449 0 1.25 592 0 150,000 0 150,000 0 500,000 0 <b>300,000 0</b> <b>300,000 0</b>	Sallon/Minute Sallon/Sallons Sallons	A	5 A 72 A 65 A 355 A 150 A 647 A 118 A 112 A 100 A 150 A	cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year	
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Notes

Line 2: The number of connections for 2015 was 132 - see Water Use Metered Sales Line 3: Based on average water use in 2014-2015 with average lawn size calculated to match total water use per residential connection. Lines 5-18: Water Demands calculated based on Utah Division of Drinking Water Standards assuming Zone 4 for outside watering requirements.

units conversion. Lines 24-41: Existing source and storage data has been gathered from the following sources of information: interviews with the water agency, sanitary surveys,

Tech	nical data for Elwood Town						
1	POPULATION AND IRRIGATED ACREAGE DATA:	2015	2020	2030	2040	2050	2060
	# Units in Service Area	364	418	491	638	829	1078 CONNECTIONS
	# Acres of Outside Irrigation per Unit	0.05	0.05	0.05	0.05	0.05	0.05 ACRES/CONN.
4	Total # Acres of Outside Irrigation for the System	19.29	22.16	26.00	33.80	43.94	57.13 ACRES
5	SOURCE REQUIREMENTS						
6		163	187	220	286	372	483 ACRE FEET
7	Annual Outdoor Usage = 1.87 Acre Feet/Irrigated Acre	36	41	49	63	82	107 ACRE FEET
8	Total Annual Usage	199	229	268	349	454	590 ACRE FEET
	Peak Day Indoor Demand = 800 Gal./Day/Connection Peak Day Outdoor Demand = 3.96 Gpm/Irrigated Acre	291,200	334,429	392,496	510,245	663,319	862,315 GAL/DAY
11	Total Peak Day Outdoor Demand – 3.96 Gpm/imgated Acre	110,011 401,211	126,342 460,771	148,279 540,775	192,763 703.008	250,591 913,910	325,769 GAL/DAY 1.188.083 GAL/DAY
12	(Gallons per Minute)	401,211	460,771	376	488	635	825 GPM
	STORAGE REQUIREMENTS	215	520	570	400	000	023 GI M
14	Indoor Requirement = 400 Gal/Connection	145.600	167.215	196.248	255.123	331.659	431.157 GALLONS
	Outside Irrigation Requirement = 2,848 Gal/Irrigated Acre	54,944	63,100	74.056	96.273	125,155	162.702 GALLONS
	Fire Storage (500 gpm for 1/2 hour)	15.000	15,000	15.000	15.000	15,000	15.000 GALLONS
	Emergency Storage, 10%	20,054	23,031	27,030	35,140	45,681	59,386 GALLONS
18	Total Storage (Rounded)	240,000	270,000	310,000	400,000	520,000	670,000 GALLONS
19	DISTRIBUTION SYSTEM REQUIREMENTS						
20	Peak Hour Indoor Demand = 10.8(N^.64); N = # Connections	470	514	570	674	797	942 GPM
21	Peak Hour Outside Demand = 7.92 Gpm/Irrigated Acre	153	175	206	268	348	452 GPM
22	Total Peak Hour Demand	623	690	775	941	1,145	1,395 GPM
23	ADDITIONAL SOURCE CAPACITY NEEDED	0.442251654	0.507905067	0.596092624	0.774920411	1.007396535	1.309615495
	Physical Source Capacity on Peak Day Basis	0	0	0	0	131	321 Gallon/Minute
	Physical Source Capacity on Annual Volume Basis	0	0	0	0	0	57 AcreFeet/Year
	Water Rights Source Capacity on Peak Day Basis	0	0	0	0	115	306 Gallon/Minute
	Water Rights Source Capacity on Annual Volume Basis	0	0	0	0	85	221 AcreFeet/Year
28	ADDITIONAL STORAGE CAPACITY NEEDED		•		•		
29	Storage Capacity Needed EXISTING PHYSICAL SOURCE CAPACITY	0	0	0	0	0	0 Gallons
30							
04		Instantaneous Capa		A	nnual Volume Cap		
31	Coldwater Canyon Spring (based on redevelopment in 2016)	30 G	allon/Minute	A	48 Å	Acre Feet/Year	
32	Coldwater Canyon Spring (based on redevelopment in 2016) New Well	30 G 250 G	allon/Minute allon/Minute	Α	48 Å 202 Å	Acre Feet/Year Acre Feet/Year	
32 33	Coldwater Canyon Spring (based on redevelopment in 2016)	30 G 250 G	allon/Minute	Α	48 Å 202 Å	Acre Feet/Year	
32 33 34	Coldwater Canyon Spring (based on redevelopment in 2016) New Well Upper Well	30 G 250 G 350 G	Gallon/Minute Gallon/Minute Gallon/Minute	Α	48 Å 202 Å	Acre Feet/Year Acre Feet/Year	
32 33 34 35	Coldwater Canyon Spring (based on redevelopment in 2016) New Well Upper Well Total Peak Day Sources	30 G 250 G 350 G 630 G	allon/Minute allon/Minute	A	48 Å 202 Å	Acre Feet/Year Acre Feet/Year	
32 33 34 35 36	Coldwater Canyon Spring (based on redevelopment in 2016) New Well Upper Well Total Peak Day Sources Safety Factor	30 G 250 G 350 G 630 G 1.25	Sallon/Minute Sallon/Minute Sallon/Minute Sallon/Minute	Δ	48 / 202 / 282 /	Acre Feet/Year Acre Feet/Year Acre Feet/Year	
32 33 34 35 36 37	Coldwater Canyon Spring (based on redevelopment in 2016) New Well Upper Well Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor	30 G 250 G 350 G 630 G 1.25	Gallon/Minute Gallon/Minute Gallon/Minute	A	48 / 202 / 282 /	Acre Feet/Year Acre Feet/Year	
32 33 34 35 36 37 38	Coldwater Canyon Spring (based on redevelopment in 2016) New Well Upper Well Total Peak Day Sources Safety Factor	30 G 250 G 350 G 630 G 1.25 504 G	Sallon/Minute Sallon/Minute Sallon/Minute Sallon/Minute	A	48 / 202 / 282 / 532 /	Acre Feet/Year Acre Feet/Year Acre Feet/Year	
32 33 34 35 36 37 38 39 40	Coldwater Canyon Spring (based on redevelopment in 2016) New Well Upper Well Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Springs New Well	30 G 250 G 350 G 1.25 504 G 249 G 350 G	salíon/Minute sallon/Minute sallon/Minute sallon/Minute sallon/Minute sallon/Minute sallon/Minute	A 	48 2 202 4 282 4 532 4 46 4 282 4	Acre Feet/Year Acre Feet/Year Acre Feet/Year Acre Feet/Year Acre Feet/Year Acre Feet/Year	
32 33 34 35 36 37 38 39 40 41	Coldwater Canyon Spring (based on redevelopment in 2016) New Well Upper Well Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Springs	30 G 250 G 350 G 1.25 504 G 249 G 350 G	sallon/Minute sallon/Minute sallon/Minute sallon/Minute sallon/Minute sallon/Minute	A	48 2 202 4 282 4 532 4 46 4 282 4	Acre Feet/Year Acre Feet/Year Acre Feet/Year Acre Feet/Year	
32 33 34 35 36 37 38 39 40 41 42	Coldwater Canyon Spring (based on redevelopment in 2016) New Well Upper Well Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Springs New Well Corinne Well 29-3702	30 C 250 C 350 C 1.25 504 C 350 C 350 C 350 C 50 C	allon/Minute allon/Minute allon/Minute allon/Minute <u>allon/Minute</u> allon/Minute allon/Minute allon/Minute	4	48 2 202 4 282 4 532 4 46 4 282 4	Acre Feet/Year Acre Feet/Year Acre Feet/Year Acre Feet/Year Acre Feet/Year Acre Feet/Year	
32 33 34 35 36 37 38 39 40 41 42 43	Coldwater Canyon Spring (based on redevelopment in 2016) New Well Upper Well Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Springs New Well Corinne Well 29-3702 Total Peak Day Sources	30 C 250 C 350 C 1.25 504 C 249 C 350 C 50 C	salíon/Minute sallon/Minute sallon/Minute sallon/Minute sallon/Minute sallon/Minute sallon/Minute	4	48 2 202 4 282 4 532 4 46 4 282 4	Acre Feet/Year Acre Feet/Year Acre Feet/Year Acre Feet/Year Acre Feet/Year Acre Feet/Year	
32 33 34 35 36 37 38 39 40 41 42 43 44	Coldwater Canyon Spring (based on redevelopment in 2016) New Well Upper Well Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor <b>EXISTING WATER RIGHTS SOURCE CAPACITY</b> Springs New Well Corinne Well 29-3702 Total Peak Day Sources Safety Factor	30° C 250° C 350° C 1.25° 504° C 249° C 350° C 50° C 649° C 1.25°	salfon/Minute sallon/Minute sallon/Minute sallon/Minute sallon/Minute sallon/Minute sallon/Minute sallon/Minute sallon/Minute	4	48 / 202 / 282 / 532 / 46 / 282 / 40 /	Acre Feet/Year Acre Feet/Year Acre Feet/Year Acre Feet/Year Acre Feet/Year Acre Feet/Year Acre Feet/Year Acre Feet/Year	
32 33 34 35 36 37 38 39 40 41 42 43 44	Coldwater Canyon Spring (based on redevelopment in 2016) New Well Upper Well Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor <b>EXISTING WATER RIGHTS SOURCE CAPACITY</b> Springs New Well Corinne Well 29-3702 Total Peak Day Sources Safety Factor	30° C 250° C 350° C 1.25° 504° C 249° C 350° C 50° C 649° C 1.25°	allon/Minute allon/Minute allon/Minute allon/Minute <u>allon/Minute</u> allon/Minute allon/Minute allon/Minute	A 	48 / 202 / 282 / 532 / 46 / 282 / 40 /	Acre Feet/Year Acre Feet/Year Acre Feet/Year Acre Feet/Year Acre Feet/Year Acre Feet/Year	
32 33 34 35 36 37 38 39 40 41 42 43 44 45 46	Coldwater Canyon Spring (based on redevelopment in 2016) New Well Upper Well Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Springs New Well Corinne Well 29-3702 Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING STORAGE CAPACITY	30 C 250 C 350 C 1.25 504 C 350 C 350 C 50 C 1.25 519 C	allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute	A 	48 / 202 / 282 / 532 / 46 / 282 / 40 /	Acre Feet/Year Acre Feet/Year Acre Feet/Year Acre Feet/Year Acre Feet/Year Acre Feet/Year Acre Feet/Year Acre Feet/Year	
32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47	Coldwater Canyon Spring (based on redevelopment in 2016) New Well Upper Well Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor <b>EXISTING WATER RIGHTS SOURCE CAPACITY</b> Springs New Well Corinne Well 29-3702 Total Peak Day Sources Safety Factor Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor <b>EXISTING STORAGE CAPACITY</b> East Tank	30 C 250 C 350 C 1.25 504 C 249 C 350 C 50 C 50 C 1.25 519 C 200,000 C	alion/Minute salion/Minute salion/Minute salion/Minute salion/Minute salion/Minute salion/Minute salion/Minute salion/Minute salion/Minute salion/S	4	48 / 202 / 282 / 532 / 46 / 282 / 40 /	Acre Feet/Year Acre Feet/Year Acre Feet/Year Acre Feet/Year Acre Feet/Year Acre Feet/Year Acre Feet/Year Acre Feet/Year	
32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48	Coldwater Canyon Spring (based on redevelopment in 2016) New Well Upper Well Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Springs New Well Corinne Well 29-3702 Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING STORAGE CAPACITY East Tank West Tank	30 C 250 C 350 C 1.25 504 C 350 C 350 C 350 C 1.25 519 C 200,000 C 200,000 C	allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allons allons allons	A 	48 / 202 / 282 / 532 / 46 / 282 / 40 /	Acre Feet/Year Acre Feet/Year Acre Feet/Year Acre Feet/Year Acre Feet/Year Acre Feet/Year Acre Feet/Year Acre Feet/Year	
32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49	Coldwater Canyon Spring (based on redevelopment in 2016) New Well Upper Well Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor <b>EXISTING WATER RIGHTS SOURCE CAPACITY</b> Springs New Well Corinne Well 29-3702 Total Peak Day Sources Safety Factor Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor <b>EXISTING STORAGE CAPACITY</b> East Tank	30 C 250 C 350 C 1.25 504 C 249 C 350 C 50 C 50 C 1.25 519 C 200,000 C	allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allons allons allons	4	48 / 202 / 282 / 532 / 46 / 282 / 40 /	Acre Feet/Year Acre Feet/Year Acre Feet/Year Acre Feet/Year Acre Feet/Year Acre Feet/Year Acre Feet/Year Acre Feet/Year	
32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48	Coldwater Canyon Spring (based on redevelopment in 2016) New Well Upper Well Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Springs New Well Corinne Well 29-3702 Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING STORAGE CAPACITY East Tank West Tank	30 C 250 C 350 C 1.25 504 C 350 C 350 C 350 C 1.25 519 C 200,000 C 200,000 C	allon/Minute sallon/Minute sallon/Minute sallon/Minute sallon/Minute sallon/Minute sallon/Minute sallon/Minute sallon/Minute sallons sallons sallons	A 	48 / 202 / 282 / 532 / 46 / 282 / 40 /	Acre Feet/Year Acre Feet/Year Acre Feet/Year Acre Feet/Year Acre Feet/Year Acre Feet/Year Acre Feet/Year Acre Feet/Year	
322 333 34 35 36 37 38 39 40 41 42 43 44 45 46 47 47 47 48 49 500 51	Coldwater Canyon Spring (based on redevelopment in 2016) New Well Upper Well Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Springs New Well Corinne Well 29-3702 Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING STORAGE CAPACITY East Tank West Tank 500,000 gallon Tank Total Storage	30 C 250 C 350 C 1.25 504 C 249 C 350 C 50 C 1.25 519 C 200,000 C 200,000 C 500,000 C	allon/Minute sallon/Minute sallon/Minute sallon/Minute sallon/Minute sallon/Minute sallon/Minute sallon/Minute sallon/Minute sallons sallons sallons	4	48 / 202 / 282 / 532 / 46 / 282 / 40 /	Acre Feet/Year Acre Feet/Year Acre Feet/Year Acre Feet/Year Acre Feet/Year Acre Feet/Year Acre Feet/Year Acre Feet/Year	
322 333 34 35 36 37 38 39 40 41 42 43 44 45 46 47 47 47 48 49 500 51	Coldwater Canyon Spring (based on redevelopment in 2016) New Well Upper Well Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Springs New Well Corinne Well 29-3702 Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING STORAGE CAPACITY East Tank Sources With Safety Factor EXISTING STORAGE CAPACITY East Tank Sources Stor Age Capacity East Tank Sources Stor Capacity East Tank Sources Stor Capacity Contal Storage ADDITIONAL CONNECTIONS SERVICEABLE WITH EXISTING 6	30°C 250°C 330°C 1.25° 504°C 249°C 350°C 1.25° 519°C 200,000°C 200,000°C 200,000°C 200,000°C 200,000°C 200,000°C 200,000°C	sallon/Minute sallon/Minute sallon/Minute sallon/Minute sallon/Minute sallon/Minute sallon/Minute sallon/Minute sallon/Minute sallons sallons sallons sallons	A	48 / 202 / 282 / 532 / 46 / 282 / 40 /	Acre Feet/Year Acre Feet/Year Acre Feet/Year Acre Feet/Year Acre Feet/Year Acre Feet/Year Acre Feet/Year Acre Feet/Year	
322 333 34 35 36 37 38 39 40 41 42 43 44 45 46 47 47 47 48 49 500 51	Coldwater Canyon Spring (based on redevelopment in 2016) New Well Upper Well Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Springs New Well Corinne Well 29-3702 Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING STORAGE CAPACITY East Tank West Tank 500,000 gallon Tank Total Storage	30 C 250 C 350 C 1.25 504 C 249 C 350 C 350 C 500 C 200,000 C 200,000 C 200,000 C 500,000 C 900,000 C 200,000 C	allon/Minute sallon/Minute sallon/Minute sallon/Minute sallon/Minute sallon/Minute sallon/Minute sallon/Minute sallon/Minute sallons sallons sallons	A 	48 / 202 / 282 / 532 / 46 / 282 / 40 /	Acre Feet/Year Acre Feet/Year Acre Feet/Year Acre Feet/Year Acre Feet/Year Acre Feet/Year Acre Feet/Year Acre Feet/Year	
322 333 34 35 36 37 38 39 40 41 42 43 39 40 41 42 43 44 50 50 51 52 53 35 4	Coldwater Canyon Spring (based on redevelopment in 2016) New Well Upper Well Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor <b>EXISTING WATER RIGHTS SOURCE CAPACITY</b> Springs New Well Corinne Well 29-3702 Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor <b>EXISTING STORAGE CAPACITY</b> East Tank West Tank S00,000 gallon Tank Total Storage <b>ADDITIONAL CONNECTIONS SERVICEABLE WITH EXISTING</b>	30° C 250° C 350° C 350° C 1.25° 504° C 249° C 350° C 249° C 350° C 249° C 350° C 249° C 350° C 249° C 350° C 200,000° C 200° C 20	sallon/Minute sallon/Minute sallon/Minute sallon/Minute sallon/Minute sallon/Minute sallon/Minute sallon/Minute sallon/Minute sallons sallons sallons sallons sallons connections connections	A	48 / 202 / 282 / 532 / 46 / 282 / 40 /	Acre Feet/Year Acre Feet/Year Acre Feet/Year Acre Feet/Year Acre Feet/Year Acre Feet/Year Acre Feet/Year Acre Feet/Year	
$\begin{array}{c} 322\\ 333\\ 344\\ 355\\ 366\\ 377\\ 388\\ 399\\ 400\\ 411\\ 422\\ 433\\ 444\\ 455\\ 566\\ 556\\ 566\\ 566\\ 566\\ 566$	Coldwater Canyon Spring (based on redevelopment in 2016) New Well Upper Well Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor <b>EXISTING WATER RIGHTS SOURCE CAPACITY</b> Springs New Well Corinne Well 29-3702 Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor <b>EXISTING STORAGE CAPACITY</b> East Tank West Tank S00,000 gallon Tank Total Storage <b>ADDITIONAL CONNECTIONS SERVICEABLE WITH EXISTING</b> # based on Peak Day Physical Source Capacity # based on Annual Physical Source Capacity # based on Annual Water Rights Capacity # based on Annual Water Rights Capacity	30° C 250° C 350° C 350° C 1.25° 504° C 249° C 350° C 249° C 350° C 249° C 350° C 249° C 350° C 249° C 350° C 200,000° C 200° C 20	allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allons allons allons allons allons allons	Α	48 / 202 / 282 / 532 / 46 / 282 / 40 /	Acre Feet/Year Acre Feet/Year Acre Feet/Year Acre Feet/Year Acre Feet/Year Acre Feet/Year Acre Feet/Year Acre Feet/Year	
$\begin{array}{c} 322\\ 333\\ 344\\ 355\\ 366\\ 377\\ 388\\ 399\\ 400\\ 411\\ 422\\ 433\\ 444\\ 455\\ 566\\ 556\\ 566\\ 566\\ 566\\ 566$	Coldwater Canyon Spring (based on redevelopment in 2016) New Well Upper Well Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor <b>EXISTING WATER RIGHTS SOURCE CAPACITY</b> Springs New Well Corinne Well 29-3702 Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor <b>EXISTING STORAGE CAPACITY</b> East Tank West Tank West Tank West Tank Sources <b>ADDITIONAL CONNECTIONS SERVICEABLE WITH EXISTING 4</b> # based on Peak Day Physical Source Capacity # based on Peak Day Water Rights Capacity	30 C 250 C 350 C 1.25 504 C 249 C 350 C 249 C 350 C 249 C 350 C 200,000 C	sallon/Minute sallon/Minute sallon/Minute sallon/Minute sallon/Minute sallon/Minute sallon/Minute sallon/Minute sallon/Minute sallons sallons sallons sallons sallons connections connections	A 	48 / 202 / 282 / 532 / 46 / 282 / 40 /	Acre Feet/Year Acre Feet/Year Acre Feet/Year Acre Feet/Year Acre Feet/Year Acre Feet/Year Acre Feet/Year Acre Feet/Year	

Line 3: Based on average water use in 2014-2015 with average lawn size calculated to match total water use per residential connection. Lines 5-18: Water Demands calculated based on Utah Division of Drinking Water Standards assuming Zone 4 for outside watering requirements. Lines 24-35: When data was not available for either the annual limit (ac-ft/yr) or the maximum flow rate (cfs or gpm), the other value was obtained by a straight units conversion.

Tech	nical data for Five C's Trailer Court						
1	POPULATION AND IRRIGATED ACREAGE DATA:	2015	2020	2030	2040	2050	2060
2	# Units in Service Area	26	26	26	26	26	26 CONNECTIONS
3	# Acres of Outside Irrigation per Unit	0.01	0.01	0.01	0.01	0.01	0.01 ACRES/CONN.
	Total # Acres of Outside Irrigation for the System	0.24	0.24	0.24	0.24	0.24	0.24 ACRES
	SOURCE REQUIREMENTS						
	Annual Indoor Usage = 146,000 Gal/Year/Connection	12	12	12	12	12	12 ACRE FEET
	Annual Outdoor Usage = 1.87 Acre Feet/Irrigated Acre	0.45	0.45	0.45	0.45	0.45	0.45 ACRE FEET
8		12	12	12	12	12	12 ACRE FEET
	Peak Day Indoor Demand = 800 Gal./Day/Connection	20.800	20.800	20.800	20.800	20.800	20.800 GAL/DAY
10				1,361	1,361	1,361	1,361 GAL/DAY
		1,361	1,361				
11 12	Total Peak Day Demand	22,161	22,161	22,161	22,161	22,161	22,161 GAL/DAY
	(Gallons per Minute)	15	15	15	15	15	15 GPM
	STORAGE REQUIREMENTS						
	Indoor Requirement = 400 Gal/Connection	10,400	10,400	10,400	10,400	10,400	10,400 GALLONS
	Outside Irrigation Requirement = 2,848 Gal/Irrigated Acre	680	680	680	680	680	680 GALLONS
	Fire Storage - NA	0	0	0	0	0	0 GALLONS
17	Emergency Storage, 10%	1,108	1,108	1,108	1,108	1,108	1,108 GALLONS
18	Total Storage (Rounded)	10,000	10,000	10,000	10,000	10,000	10,000 GALLONS
19	DISTRIBUTION SYSTEM REQUIREMENTS						
20	Peak Hour Indoor Demand = 10.8(N^.64); N = # Connections	87	87	87	87	87	87 GPM
	Peak Hour Outside Demand = 7.92 Gpm/Irrigated Acre	2	2	2	2	2	2 GPM
22	Total Peak Hour Demand	89	89	89	89	89	89 GPM
	ADDITIONAL SOURCE CAPACITY NEEDED			00	00	00	00 01 m
	Physical Source Capacity on Peak Day Basis	0	0	0	0	0	0 Gallon/Minute
	Physical Source Capacity on Annual Volume Basis	0	0	0	0	0	0 AcreFeet/Year
	Water Rights Source Capacity on Peak Day Basis	0	0	0	0	0	0 Gallon/Minute
		0	0	0	0	0	
	Water Rights Source Capacity on Annual Volume Basis	0	0	0	0	0	0 AcreFeet/Year
	ADDITIONAL OTODA OF GADA OFTV NEEDER			-			
		0.700	0.700	0.700	0.700	0.700	0.700. 0-11
29	Storage Capacity Needed	9,700	9,700	9,700	9,700	9,700	9,700 Gallons
29 30	Storage Capacity Needed EXISTING PHYSICAL SOURCE CAPACITY	Instantaneous Capacity			al Volume Capacit	ty	9,700 Gallons
29 30 31	Storage Capacity Needed EXISTING PHYSICAL SOURCE CAPACITY Well - 29-484	Instantaneous Capacity 25 Gallo	n/Minute		al Volume Capacit 20 Acre	ty Feet/Year	9,700 Gallons
29 30 31 32	Storage Capacity Needed EXISTING PHYSICAL SOURCE CAPACITY	Instantaneous Capacity 25 Gallo			al Volume Capacit 20 Acre	ty	9,700 Gallons
29 30 31 32 33	Storage Capacity Needed EXISTING PHYSICAL SOURCE CAPACITY Well - 29-484 Well - 29-1217	Instantaneous Capacity 25 Gallo 22 Gallo	n/Minute n/Minute		al Volume Capacit 20 Acre	ty Feet/Year	9,700 Gallons
29 30 31 32 33 34	Storage Capacity Needed EXISTING PHYSICAL SOURCE CAPACITY Well - 29-484 Well - 29-1217 Total Peak Day Sources	Instantaneous Capacity 25 Gallo 22 Gallo 48 Gallo	n/Minute		al Volume Capacit 20 Acre	ty Feet/Year	9,700 Gallons
29 30 31 32 33 34 35	Storage Capacity Needed EXISTING PHYSICAL SOURCE CAPACITY Well - 29-484 Well - 29-1217 Total Peak Day Sources Safety Factor	Instantaneous Capacity 25 Gallo 22 Gallo 48 Gallo 1.25	n/Minute n/Minute n/Minute		ual Volume Capacit 20 Acre 18 Acre	ty Feet/Year Feet/Year	9,700 Gallons
29 30 31 32 33 34 35 36	Storage Capacity Needed EXISTING PHYSICAL SOURCE CAPACITY Well - 29-484 Well - 29-1217 Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor	Instantaneous Capacity 25 Gallo 22 Gallo 48 Gallo 1.25	n/Minute n/Minute		ual Volume Capacit 20 Acre 18 Acre	ty Feet/Year	9,700 Gallons
29 30 31 32 33 34 35 36 37	Storage Capacity Needed EXISTING PHYSICAL SOURCE CAPACITY Well - 29-484 Well - 29-1217 Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY	Instantaneous Capacity 25 Gallo 22 Gallo 48 Gallo 1.25 38 Gallo	n/Minute n/Minute n/Minute n/Minute		al Volume Capacit 20 Acre 18 Acre 38 Acre	ty Feet/Year Feet/Year Feet/Year	9,700 Gallons
29 30 31 32 33 34 35 36 37 38	Storage Capacity Needed EXISTING PHYSICAL SOURCE CAPACITY Well - 29-484 Well - 29-1217 Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Well - 29-484	Instantaneous Capacity 25 Galic 22 Galic 48 Galic 1.25 38 Galic 25 Galic	n/Minute n/Minute n/Minute n/Minute		al Volume Capacit 20 Acre 18 Acre <u>38 Acre</u> 6 Acre	y Feet/Year Feet/Year Feet/Year	9,700 Gallons
29 30 31 32 33 34 35 36 37 38 39	Storage Capacity Needed EXISTING PHYSICAL SOURCE CAPACITY Well - 29-484 Well - 29-1217 Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY	Instantaneous Capacity 25 Galic 22 Galic 48 Galic 1.25 38 Galic 25 Galic	n/Minute n/Minute n/Minute n/Minute		al Volume Capacit 20 Acre 18 Acre <u>38 Acre</u> 6 Acre	ty Feet/Year Feet/Year Feet/Year	9,700 Gallons
29 30 31 32 33 34 35 36 37 38	Storage Capacity Needed EXISTING PHYSICAL SOURCE CAPACITY Well - 29-484 Well - 29-1217 Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Well - 29-484	Instantaneous Capacity 25 Galic 22 Galic 48 Galic 1.25 38 Galic 25 Galic	n/Minute n/Minute n/Minute n/Minute		al Volume Capacit 20 Acre 18 Acre <u>38 Acre</u> 6 Acre	y Feet/Year Feet/Year Feet/Year	9,700 Gallons
29 30 31 32 33 34 35 36 37 38 39 40	Storage Capacity Needed EXISTING PHYSICAL SOURCE CAPACITY Well - 29-484 Well - 29-1217 Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Well - 29-484	Instantaneous Capacity 25 Galit 22 Galit 48 Galit 1.25 38 Galit 25 Galit 22 Galit	n/Minute n/Minute n/Minute n/Minute		al Volume Capacit 20 Acre 18 Acre <u>38 Acre</u> 6 Acre	y Feet/Year Feet/Year Feet/Year	9,700 Gallons
29 30 31 32 33 34 35 36 37 38 39 40 41	Storage Capacity Needed EXISTING PHYSICAL SOURCE CAPACITY Well - 29-484 Well - 29-4217 Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Well - 29-484 Well - 29-1217	Instantaneous Capacity 25 Galit 22 Galit 48 Galit 1.25 38 Galit 25 Galit 22 Galit	n/Minute n/Minute n/Minute n/Minute n/Minute n/Minute		al Volume Capacit 20 Acre 18 Acre <u>38 Acre</u> 6 Acre	y Feet/Year Feet/Year Feet/Year	9,700 Gallons
29 30 31 32 33 34 35 36 37 38 39 40 41 42	Storage Capacity Needed EXISTING PHYSICAL SOURCE CAPACITY Well - 29-484 Well - 29-1217 Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Well - 29-484 Well - 29-1217 Total Peak Day Sources Safety Factor	Instantaneous Capacity 25 Galic 22 Galic 48 Galic 1.25 38 Galic 25 Galic 22 Galic 48 Galic 1.25	n/Minute n/Minute n/Minute n/Minute n/Minute n/Minute		al Volume Capacil 20 Acre 18 Acre 38 Acre 6 Acre 18 Acre	ty Feet/Year Feet/Year Feet/Year Feet/Year	9,700 Gallons
29 30 31 32 33 34 35 36 37 38 39 40 41 42 43	Storage Capacity Needed EXISTING PHYSICAL SOURCE CAPACITY Well - 29-484 Well - 29-4217 Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Well - 29-484 Well - 29-1217 Total Peak Day Sources	Instantaneous Capacity 25 Galic 22 Galic 48 Galic 1.25 38 Galic 25 Galic 22 Galic 48 Galic 1.25	n/Minute n/Minute n/Minute n/Minute n/Minute n/Minute		al Volume Capacil 20 Acre 18 Acre 38 Acre 6 Acre 18 Acre	y Feet/Year Feet/Year Feet/Year	9,700 Gallons
29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44	Storage Capacity Needed EXISTING PHYSICAL SOURCE CAPACITY Well - 29-484 Well - 29-4217 Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Well - 29-484 Well - 29-1217 Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING CAPACITY EXISTING STORAGE CAPACITY	Instantaneous Capacity 25 Galic 22 Galic 48 Galic 1.25 38 Galic 25 Galic 22 Galic 48 Galic 1.25	n/Minute n/Minute n/Minute n/Minute n/Minute n/Minute n/Minute		al Volume Capacil 20 Acre 18 Acre 38 Acre 6 Acre 18 Acre	ty Feet/Year Feet/Year Feet/Year Feet/Year	9,700 Gallons
29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44	Storage Capacity Needed EXISTING PHYSICAL SOURCE CAPACITY Well - 29-484 Well - 29-421 Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Well - 29-484 Well - 29-1217 Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor	Instantaneous Capacity 25 Gall 22 Gall 48 Gall 1.25 38 Gall 25 Gall 22 Gall 48 Gall 1.25 38 Gall	n/Minute n/Minute n/Minute n/Minute n/Minute n/Minute n/Minute		al Volume Capacil 20 Acre 18 Acre 38 Acre 6 Acre 18 Acre	ty Feet/Year Feet/Year Feet/Year Feet/Year	9,700 Gallons
29 30 31 32 33 34 35 36 36 37 38 39 40 41 42 43 44 45 46	Storage Capacity Needed EXISTING PHYSICAL SOURCE CAPACITY Well - 29-484 Well - 29-1217 Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Well - 29-484 Well - 29-1217 Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING STORAGE CAPACITY Hydropneumatic Tank	Instantaneous Capacity 25 Galic 22 Galic 48 Galic 1.25 38 Galic 25 Galic 22 Galic 48 Galic 1.25 38 Galic 300 Galic	n/Minute n/Minute n/Minute n/Minute n/Minute n/Minute n/Minute		al Volume Capacil 20 Acre 18 Acre 38 Acre 6 Acre 18 Acre	ty Feet/Year Feet/Year Feet/Year Feet/Year	9,700 Gallons
29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47	Storage Capacity Needed EXISTING PHYSICAL SOURCE CAPACITY Well - 29-484 Well - 29-4217 Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Well - 29-484 Well - 29-484 Well - 29-1217 Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING STORAGE CAPACITY Hydropneumatic Tank Total Storage	Instantaneous Capacity 25 Galic 22 Galic 48 Galic 1.25 38 Galic 22 Galic 22 Galic 48 Galic 1.25 38 Galic 300 Galic 300 Galic	n/Minute n/Minute n/Minute n/Minute n/Minute n/Minute n/Minute		al Volume Capacil 20 Acre 18 Acre 38 Acre 6 Acre 18 Acre	ty Feet/Year Feet/Year Feet/Year Feet/Year	9,700 Gallons
299 300 311 322 333 34 35 36 37 38 39 30 40 41 42 43 44 44 55 46 47 7 48	Storage Capacity Needed EXISTING PHYSICAL SOURCE CAPACITY Well - 29-484 Well - 29-1217 Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Well - 29-484 Well - 29-484 Well - 29-484 Well - 29-1217 Total Peak Day Sources Safety Factor Total Peak Day Sources Safety Factor EXISTING STORAGE CAPACITY Hydropneumatic Tank Total Storage ADDITIONAL CONNECTIONS SERVICEABLE WITH EXISTING 5	Instantaneous Capacity 25 Galic 22 Galic 48 Galic 1.25 38 Galic 22 Galic 22 Galic 48 Galic 1.25 38 Galic 300 Galic 300 Galic CAPACITY	n/Minute n/Minute n/Minute n/Minute n/Minute n/Minute n/Minute ns		al Volume Capacil 20 Acre 18 Acre 38 Acre 6 Acre 18 Acre	ty Feet/Year Feet/Year Feet/Year Feet/Year	9,700 Gallons
299 300 311 322 333 344 355 366 37 388 399 400 41 42 44 44 45 54 46 47 7 488 49	Storage Capacity Needed EXISTING PHYSICAL SOURCE CAPACITY Well - 29-484 Well - 29-421 Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Well - 29-484 Well - 29-1217 Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING STORAGE CAPACITY Hydropneumatic Tank Total Storage ADDITIONAL CONNECTIONS SERVICEABLE WITH EXISTING F # based on Peak Day Physical Source Capacity	Instantaneous Capacity 25 Galic 22 Galic 48 Galic 1.25 38 Galic 22 Galic 25 Galic 22 Galic 1.25 38 Galic 300 Galic 300 Galic CAPACITY 38 Conr	n/Minute n/Minute n/Minute n/Minute n/Minute n/Minute n/Minute ns ns		al Volume Capacil 20 Acre 18 Acre 38 Acre 6 Acre 18 Acre	ty Feet/Year Feet/Year Feet/Year Feet/Year	9,700 Gallons
299 300 311 322 333 34 355 36 37 38 399 400 411 422 433 44 455 46 46 550	Storage Capacity Needed EXISTING PHYSICAL SOURCE CAPACITY Well - 29-484 Well - 29-421 Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Well - 29-484 Well - 29-421 Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING STORAGE CAPACITY Hydropneumatic Tank Total Storage ADDITIONAL CONNECTIONS SERVICEABLE WITH EXISTING # based on Annual Physical Source Capacity	Instantaneous Capacity 25 Galic 22 Galic 48 Galic 1.25 38 Galic 22 Galic 22 Galic 48 Galic 1.25 38 Galic 300 Galic 300 Galic CAPACITY 38 Conr 56 Conr	n/Minute n/Minute n/Minute n/Minute n/Minute n/Minute n/Minute ns ns uns uns uns uns		al Volume Capacil 20 Acre 18 Acre 38 Acre 6 Acre 18 Acre	ty Feet/Year Feet/Year Feet/Year Feet/Year	9,700 Gallons
299 300 311 322 333 44 355 366 377 388 399 400 411 422 433 444 455 466 477 488 955551	Storage Capacity Needed EXISTING PHYSICAL SOURCE CAPACITY Well - 29-484 Well - 29-1217 Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Well - 29-484 Well - 29-1217 Total Peak Day Sources Safety Factor Total Peak Day Sources Safety Factor EXISTING STORAGE CAPACITY Hydropneumatic Tank Total Storage ADDITIONAL CONNECTIONS SERVICEABLE WITH EXISTING 4 # based on Peak Day Physical Source Capacity # based on Peak Day Water Rights Capacity	Instantaneous Capacity 25 Galic 22 Galic 48 Galic 1.25 38 Galic 22 Galic 22 Galic 48 Galic 1.25 38 Galic 300 Galic <b>CAPACITY</b> 38 Conr 56 Conr 38 Conr 56 Conr	n/Minute n/Minute n/Minute n/Minute n/Minute n/Minute n/Minute ns ns ections sections sections		al Volume Capacil 20 Acre 18 Acre 38 Acre 6 Acre 18 Acre	ty Feet/Year Feet/Year Feet/Year Feet/Year	9,700 Gallons
299 300 311 322 303 334 355 366 377 388 399 399 399 399 400 411 422 433 466 477 488 455 551 522 515	Storage Capacity Needed EXISTING PHYSICAL SOURCE CAPACITY Well - 29-484 Well - 29-1217 Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Well - 29-484 Well - 29-1217 Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING STORAGE CAPACITY Hydropneumatic Tank Total Storage ADDITIONAL CONNECTIONS SERVICEABLE WITH EXISTING # based on Peak Day Physical Source Capacity # based on Annual Physical Source Capacity # based on Annual Physical Source Capacity # based on Annual Water Rights Capacity # based on Annual Water Rights Capacity # based on Annual Water Rights Capacity	Instantaneous Capacity 25 Galic 22 Galic 48 Galic 1.25 38 Galic 22 Galic 23 Galic 1.25 38 Galic 300 Galic 300 Galic 300 Galic CAPACITY 38 Conr 38 Conr 38 Conr 38 Conr 38 Conr 38 Conr 38 Conr	n/Minute n/Minute n/Minute n/Minute n/Minute n/Minute n/Minute ns ns ections sections sections sections sections		al Volume Capacil 20 Acre 18 Acre 38 Acre 6 Acre 18 Acre	ty Feet/Year Feet/Year Feet/Year Feet/Year	9,700 Gallons
299 300 311 322 333 34 355 366 377 388 399 400 411 422 433 444 455 466 477 488 4551 5522	Storage Capacity Needed EXISTING PHYSICAL SOURCE CAPACITY Well - 29-484 Well - 29-424 Total Peak Day Sources Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Well - 29-484 Well - 29-484 Well - 29-1217 Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING STORAGE CAPACITY Hydropneumatic Tank Total Storage ADDITIONAL CONNECTIONS SERVICEABLE WITH EXISTING of based on Peak Day Physical Source Capacity # based on Annual Physical Source Capacity # based on Annual Water Rights Capacity # based on Storage Capacity	Instantaneous Capacity 25 Galic 22 Galic 48 Galic 1.25 38 Galic 22 Galic 22 Galic 48 Galic 1.25 38 Galic 300 Galic <b>CAPACITY</b> 38 Conr 56 Conr 38 Conr 56 Conr	n/Minute n/Minute n/Minute n/Minute n/Minute n/Minute n/Minute ns ns ections sections sections sections sections		al Volume Capacil 20 Acre 18 Acre 38 Acre 6 Acre 18 Acre	ty Feet/Year Feet/Year Feet/Year Feet/Year	9,700 Gallons

Notes: Line 3: Lawn size assumed to be very small (mobile homes) = 20' X 20' average lawn size = 0.00918 acres/connection. Lines 5-18: Water Demands calculated based on Utah Division of Drinking Water Standards assuming Zone 4 for outside watering requirements. Lines 24-35: When data was not available for either the annual limit (ac-ft/yr) or the maximum flow rate (cfs or gpm), the other value was obtained by a straight units conversion.

Tech	nical data for Garland						
1	POPULATION AND IRRIGATED ACREAGE DATA:	2015	2020	2030	2040	2050	2060
	# Units in Service Area	831	932	1094	1422	1848	2403 CONNECTIONS
	# Acres of Outside Irrigation per Unit	0.10	0.10	0.10	0.10	0.10	0.10 ACRES/CONN.
4	Total # Acres of Outside Irrigation for the System	85.59	95.97	112.63	146.43	190.35	247.46 ACRES
5	SOURCE REQUIREMENTS						
6	Annual Indoor Usage = 146,000 Gal/Year/Connection	372	418	490	637	828	1,077 ACRE FEET
7	Annual Outdoor Usage = 1.87 Acre Feet/Irrigated Acre	160	179	211	274	356	463 ACRE FEET
8		532	597	701	911	1,184	1,539 ACRE FEET
	Peak Day Indoor Demand = 800 Gal./Day/Connection	664,800	745,407	874,832	1,137,282	1,478,466	1,922,006 GAL/DAY
	Peak Day Outdoor Demand = 3.96 Gpm/Irrigated Acre	488,086	547,266	642,288	834,974	1,085,466	1,411,106 GAL/DAY
11	Total Peak Day Demand	1,152,886	1,292,673	1,517,120	1,972,256	2,563,932	3,333,112 GAL/DAY
12		801	898	1,054	1,370	1,781	2,315 GPM
	STORAGE REQUIREMENTS						
	Indoor Requirement = 400 Gal/Connection	332,400	372,704	437,416	568,641	739,233	961,003 GALLONS
	Outside Irrigation Requirement = 2,848 Gal/Irrigated Acre	243,769	273,326	320,783	417,018	542,124	704,761 GALLONS
	Fire Storage (500 gpm for 1/2 hour)	15,000	15,000	15,000	15,000	15,000	15,000 GALLONS
	Emergency Storage, 10%	57,617	64,603	75,820	98,566	128,136	166,576 GALLONS
18		650,000	730,000	850,000	1,100,000	1,420,000	1,850,000 GALLONS
	DISTRIBUTION SYSTEM REQUIREMENTS						
	Peak Hour Indoor Demand = 10.8(N^.64); N = # Connections	798	859	951	1,125	1,331	1,574 GPM
	Peak Hour Outside Demand = 7.92 Gpm/Irrigated Acre	678	760	892	1,160	1,508	1,960 GPM
22		1,476	1,619	1,843	2,285	2,838	3,534 GPM
	ADDITIONAL SOURCE CAPACITY NEEDED	0.847390926	0.950137076	1.115109376	1.449642189	1.884534845	2.449895299
	Physical Source Capacity on Peak Day Basis	0	0	109	425	836	1,370 Gallon/Minute
25	Physical Source Capacity on Annual Volume Basis	0	0	0	0	0	0 AcreFeet/Year
	Water Rights Source Capacity on Peak Day Basis	0	0	0	129	540	1,075 Gallon/Minute
	Water Rights Source Capacity on Annual Volume Basis	0	0	0	0	0	0 AcreFeet/Year
	ADDITIONAL STORAGE CAPACITY NEEDED Storage Capacity Needed	0	0	0	0	0	50,000 Gallons
		Instantaneous Capa			nnual Volume Cap		
	Bear River Springs (min flow in 1998)		allon/Minute	<i></i>		cre Feet/Year	
	Garland & East Side Springs (min flow in 2012)		allon/Minute			cre Feet/Year	
33			anonyminato		1,100 /	0.01000000	
34		1,181 G	allon/Minute				
	Safety Factor	1.25					
36	Total Peak Day Sources with Safety Factor	945 G	allon/Minute		1,905 A	cre Feet/Year	
37	EXISTING WATER RIGHTS SOURCE CAPACITY						
38	Bear River Springs - 29-1371, 1015	700 G	allon/Minute		1,129 A	cre Feet/Year	
	Garland & Bear River Springs - 29-1147, 532	850 G	allon/Minute		1,371 A	cre Feet/Year	
40							
41			allon/Minute				
42		1.25					
	Total Peak Day Sources with Safety Factor	1,240 G	allon/Minute		2,501 A	cre Feet/Year	
44	EXISTING STORAGE CAPACITY						
	Tank 1	300,000 G					
46	Tank 1 Tank 2	1,000,000 G	allons				
46 47	Tank 1 Tank 2 Tank 3		allons				
46 47 48	Tank 1 Tank 2 Tank 3	1,000,000 G 500,000 G	Gallons Gallons				
46 47 48 49	Tank 1 Tank 2 Tank 3 Total Storage	1,000,000 G 500,000 G 1,800,000 G	Gallons Gallons				
46 47 48 49 50	Tank 1 Tank 2 Tank 3 ADDITIONAL CONNECTIONS SERVICEABLE WITH EXISTING 6	1,000,000 G 500,000 G 1,800,000 G CAPACITY	Gallons Gallons Gallons				
46 47 48 49 50 51	Tank 1 Tank 2 Tank 3 ADDITIONAL CONNECTIONS SERVICEABLE WITH EXISTING 6 # based on Peak Day Physical Source Capacity	1,000,000 G 500,000 G 1,800,000 G CAPACITY 150 C	Sallons Sallons Sallons Connections				
46 47 48 49 50 51 52	Tank 1 Tank 2 Tank 2 Tank 3 ADDITIONAL CONNECTIONS SERVICEABLE WITH EXISTING ( # based on Peak Day Physical Source Capacity # based on Annual Physical Source Capacity	1,000,000 G 500,000 G 1,800,000 G CAPACITY 150 C 2,143 C	Gallons Gallons Gallons				
46 47 48 49 50 51 52 53	Tank 1 Tank 2 Tank 3 ADDITIONAL CONNECTIONS SERVICEABLE WITH EXISTING 6 # based on Peak Day Physical Source Capacity	1,000,000 G 500,000 G 1,800,000 G CAPACITY 150 C 2,143 C 456 C	Sallons Sallons Sallons Connections Connections				
46 47 48 49 50 51 52 53 54	Tank 1 Tank 2 Tank 2 Total Storage ADDITIONAL CONNECTIONS SERVICEABLE WITH EXISTING ( # based on Peak Day Physical Source Capacity # based on Peak Day Water Rights Capacity	1,000,000 G 500,000 G 1,800,000 G CAPACITY 150 C 2,143 C 456 C 3,072 C	Sallons Sallons Sonnections Sonnections Sonnections				

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 Notes:

 Line 3: Based on average water use in 2014-2015 with average lawn size calculated to match total water use per residential connection.

 Line 3: Based on average water behavior

 Lines 5-18: Water Demands calculated based on Utah Division of Drinking Water Standards assuming Zone 4 for outside watering requirements.

 Lines 24-35: When data was not available for either the annual limit (ac-ft/yr) or the maximum flow rate (cfs or gpm), the other value was obtained by a straight units conversion.

 Lines 24-41: Existing source and storage data has been gathered from the following sources of information: interviews with the water agency, sanitary surveys, water rights information and Division

Tech	nnical data for Grouse Creek						
1	POPULATION AND IRRIGATED ACREAGE DATA:	2015	2020	2030	2040	2050	2060
2	# Units in Service Area	45	47	52	57	63	70 CONNECTIONS
3	# Acres of Outside Irrigation per Unit	0.20	0.20	0.20	0.20	0.20	0.20 ACRES/CONN.
4	Total # Acres of Outside Irrigation for the System	9.00	9.46	10.41	11.47	12.63	13.91 ACRES
5	SOURCE REQUIREMENTS						
6	Annual Indoor Usage = 146,000 Gal/Year/Connection	20	21	23	26	28	31 ACRE FEET
	Annual Outdoor Usage = 1.87 Acre Feet/Irrigated Acre	17	18	19	21	24	26 ACRE FEET
8	Total Annual Usage	37	39	43	47	52	57 ACRE FEET
g	Peak Day Indoor Demand = 800 Gal./Day/Connection	36,000	37,824	41.655	45.876	50,523	55.642 GAL/DAY
	Peak Day Outdoor Demand = 3.96 Gpm/Irrigated Acre	51,322	53,921	59,384	65,400	72,026	79,323 GAL/DAY
11	Total Peak Day Demand	87,322	91,745	101,040	111,276	122,549	134,965 GAL/DAY
12	(Gallons per Minute)	60.64	64	70	77	85	94 GPM
13	STORAGE REQUIREMENTS						
14	Indoor Requirement = 400 Gal/Connection	18,000	18,912	20,828	22,938	25,262	27,821 GALLONS
	Outside Irrigation Requirement = 2,848 Gal/Irrigated Acre	25,632	26,930	29,659	32,663	35,973	39,617 GALLONS
	Fire Storage	0	0	0	0	0	0 GALLONS
	Emergency Storage, 10%	4,363	4,584	5,049	5,560	6,123	6,744 GALLONS
18		50,000	50,000	60,000	60,000	70,000	70,000 GALLONS
	DISTRIBUTION SYSTEM REQUIREMENTS					.,	
	Peak Hour Indoor Demand = 10.8(N^.64); N = # Connections	123	127	136	144	153	163 GPM
	Peak Hour Outside Demand = 7.92 Gpm/Irrigated Acre	71	75	82	91	100	110 GPM
22		195	202	218	235	253	273 GPM
	ADDITIONAL SOURCE CAPACITY NEEDED	0.562982769	0.591500661	0.651425593	0.71742152	0.790103494	0.870148879
	Physical Source Capacity on Peak Day Basis	0.502302703	0.531500001	0.031423333	0.71742132	0.730103434	0 Gallon/Minute
	Physical Source Capacity on Annual Volume Basis	0	0	0	Ő	0	0 AcreFeet/Year
	Water Rights Source Capacity on Peak Day Basis	0	0	0	0	0	0 Gallon/Minute
	Water Rights Source Capacity on Annual Volume Basis	Ő	0	0	Ő	0	0 AcreFeet/Year
	ADDITIONAL STORAGE CAPACITY NEEDED	v	0	0	0	v	
	Storage Capacity Needed	10.000	10,000	20,000	20,000	30,000	30,000 Gallons
		nstantaneous Capa			nnual Volume Cap		
	Buckskin Springs		allon/Minute			cre Feet/Year	
	Well		allon/Minute			cre Feet/Year	
33		22 0	anon/minute		247		
34		135 G	allon/Minute				
	Safety Factor	1.25	anonininato				
	Total Peak Day Sources with Safety Factor		allon/Minute		101 A	cre Feet/Year	
	EXISTING WATER RIGHTS SOURCE CAPACITY	.00 0			.017		
	Buckskin Springs	112 G	allon/Minute		77 A	cre Feet/Year	
	Well		allon/Minute			cre Feet/Year	
40		22 0			247		
41		135 G	allon/Minute				
	Safety Factor	1.25					
	Total Peak Day Sources with Safety Factor		allon/Minute		101 A	cre Feet/Year	
	EXISTING STORAGE CAPACITY	.00 0			.017		
	Reservoir	40.000 G	allons				
46		,					
47		40,000 G	allons				
	ADDITIONAL CONNECTIONS SERVICEABLE WITH EXISTING O						
	# based on Peak Day Physical Source Capacity		onnections				
	# based on Annual Physical Source Capacity		onnections				
	# based on Peak Day Water Rights Capacity		connections				
	# based on Annual Water Rights Capacity		onnections				
	# based on Storage Capacity		connections				
_		00					
Note							

Notes: <u>Line 3</u>: Based on average water use in 2014-2015 with average lawn size calculated to match total water use per residential connection. <u>Lines 5-18</u>: Water Demands calculated based on Utah Division of Drinking Water Standards assuming Zone 4 for outside watering requirements. <u>Lines 24-35</u>: When data was not available for either the annual limit (ac-ft/yr) or the maximum flow rate (cfs or gpm), the other value was obtained by a straight units conversion. <u>Lines 24-41</u>: Existing source and storage data has been gathered from the following sources of information: interviews with the water agency, sanitary surveys, water rights information and Division

POPULATION AND IRRIGATED ACREAGE DATA:	2015	2020	2030	2040	2050	2060	
2 # Units in Service Area	489	502	590	767	996		CONNECTION
3 # Acres of Outside Irrigation per Unit	0.29	0.29	0.29	0.29	0.29	0.29	ACRES/CON
4 Total # Acres of Outside Irrigation for the System	142	146	171	222	289	376	ACRES
5 SOURCE REQUIREMENTS							
6 Annual Indoor Usage = 146,000 Gal/Year/Connection	219	225	264	343	447		ACRE FEET
7 Annual Outdoor Usage = 1.87 Acre Feet/Irrigated Acre	265	272	320	416	540		ACRE FEET
B Total Annual Usage	484	498	584	759	987		ACRE FEET
Peak Day Indoor Demand = 800 Gal./Day/Connection	391,200	401,923	471,709	613,222	797,189	1,036,345	
D Peak Day Outdoor Demand = 3.96 Gpm/Irrigated Acre	808,657	830,824	975,080	1,267,604	1,647,885	2,142,250	
1 Total Peak Day Demand	1,199,857	1,232,747	1,446,789	1,880,826	2,445,074	3,178,596	
2 (Gallons per Minute)	833	856	1,005	1,306	1,698	2,207	GPM
STORAGE REQUIREMENTS	105 000	000 000	005 055	000.044	000 504	540.470	
Indoor Requirement = 400 Gal/Connection	195,600	200,962	235,855	306,611	398,594		GALLONS
5 Outside Irrigation Requirement = 2,848 Gal/Irrigated Acre	403,875	414,946	486,993	633,091	823,018		GALLONS
6 Fire Storage (1,000 gpm for 1 hour) 7 Emergency Storage, 10%	60,000 59,947	60,000 61,591	60,000 72,285	60,000 93,970	60,000 122,161		GALLONS GALLONS
Total Storage (Rounded)	59,947 720.000	740.000	72,285 860.000	1.090.000	1.400.000		
DISTRIBUTION SYSTEM REQUIREMENTS	120,000	740,000	000,000	1,090,000	1,400,000	1,610,000	GALLONS
Peak Hour Indoor Demand = 10.8(N ² .64); N = # Connections	568	578	641	758	896	1.060	GPM
Peak Hour Indoor Demand = 10.8(N ⁻ .04); N = # Connections Peak Hour Outside Demand = 7.92 Gpm/Irrigated Acre	1,123	1,154	1,354	1,761	2,289	2,975	
2 Total Peak Hour Outside Demand = 7.92 Gpm/irrigated Acre	1,123	1,154	1,354	2,518	2,289 3,185	2,975	
3 ADDITIONAL SOURCE CAPACITY NEEDED	0.548180439	0.563206898	0.660996511	0.859295464	1.117084104	1.452209335	
4 Physical Source Capacity on Peak Day Basis	0.546160459	0.565206696	0.000990311	0.059295404	1.117084104		Gallon/Minute
5 Physical Source Capacity on Annual Volume Basis	0	0	0	0	0		AcreFeet/Yea
6 Water Rights Source Capacity on Peak Day Basis	0	0	0	0	0		Gallon/Minute
7 Water Rights Source Capacity on Annual Volume Basis	Ő	Ő	0	Ő	Ő		AcreFeet/Yea
ADDITIONAL STORAGE CAPACITY NEEDED							/10/01/000/100
9 Storage Capacity Needed	0	0	0	0	150,000	560,000	Gallons
EXISTING PHYSICAL SOURCE CAPACITY	stantaneous Capa	citv	A	nnual Volume Cap	acity		
1 Springs (min July flow in 1992)		allon/Minute			cre Feet/Year		
2 North Well	650 G	allon/Minute		524 A	cre Feet/Year		
3 South Well	1,100 G	allon/Minute		887 A	cre Feet/Year		
4 BRWCD Backup Connection on HWY 38	0 G	allon/Minute		0 A	cre Feet/Year		
5							
6 Total Peak Day Sources		allon/Minute					
7 Safety Factor	1.25						
B Total Peak Day Sources with Safety Factor	1,520 G	allon/Minute		1,612 A	cre Feet/Year		
EXISTING WATER RIGHTS SOURCE CAPACITY					E (0/		
D Springs - 29-857		allon/Minute			cre Feet/Year		
1 Well 9 - 29-1259 2 Well 10 - 29-3715 (a26165)		allon/Minute allon/Minute			cre Feet/Year cre Feet/Year		
2 Weil 10 - 29-3715 (a26165) 3	449 G	alion/ivinute		362 A	cre reet/rear		
4 Total Peak Day Sources	2 602 0	allon/Minute					
5 Safety Factor	2,093 G	anon/iviiriute					
6 Total Peak Day Sources with Safety Factor		allon/Minute		2 896 A	cre Feet/Year		
7 EXISTING STORAGE CAPACITY	2,104 0	and a minute		2,000 A	0.010001001		
B North Tank	250,000 G	allons					
9 South Tank	1,000,000 G						
1 Total Storage	1,250,000 G	allons					
ADDITIONAL CONNECTIONS SERVICEABLE WITH EXISTING C	APACITY						
3 # based on Peak Day Physical Source Capacity		onnections					
4 # based on Annual Physical Source Capacity	1,139 C	onnections					
	775 0	onnections					
5 # based on Peak Day Water Rights Capacity	115 0						
a # based on Peak Day Water Rights Capacity		onnections					

Line 3: Based on average water use in 2014-2015 with average lawn size calculated to match total water use per residential connection. Lines 5-18: Water Demands calculated based on Utah Division of Drinking Water Standards assuming Zone 4 for outside watering requirements. Lines 24-35: When data was not available for either the annual limit (ac-ft/yr) or the maximum flow rate (cfs or gpm), the other value was obtained by a straight units conversion.

IPOPULATION AND IRRIGATED ACREAGE DATA:         2015         2020         2030         2040         2060         2060         2060           2 H Uhis in Service Area         0.01         0.01         0.01         0.01         0.01         0.01         0.01         0.01         0.01         0.01         0.01         0.01         0.01         0.01         0.01         0.01         0.01         0.01         0.01         0.01         0.01         0.01         0.01         0.01         0.01         0.01         0.01         0.01         0.01         0.01         0.01         0.01         0.01         0.01         0.01         0.01         0.01         0.01         0.01         0.01         0.01         0.01         0.01         0.01         0.01         0.01         0.00         3.000         3.000         3.000         3.000         3.000         3.000         3.000         3.000         3.000         3.000         3.000         3.000         3.000         3.000         3.000         3.000         3.000         3.000         3.000         3.000         3.000         3.000         3.000         3.000         3.000         3.000         3.000         3.000         3.000         3.000         3.000         3.00		inical data for Hot Springs Trailer Court						
3 # Acces of Outside trigation per Unit       0.01       0.01       0.01       0.01       0.01       0.01       0.01       0.01       0.01       0.01       0.01       0.01       0.01       0.01       0.01       0.01       0.01       0.01       0.01       0.01       0.01       0.01       0.01       0.01       0.01       0.01       0.01       0.01       0.01       0.01       0.01       0.01       0.01       0.01       0.01       0.01       0.01       0.01       0.01       0.01       0.01       0.01       0.01       0.01       0.01       0.01       0.01       0.01       0.01       0.01       0.01       0.01       0.01       0.01       0.01       0.01       0.01       0.01       0.01       0.01       0.01       0.01       0.01       0.01       0.01       0.01       0.01       0.01       0.00       0.01       0.00       0.01       0.00       0.01       0.00       0.01       0.00       0.01       0.00       0.01       0.00       0.01       0.00       0.01       0.00       0.01       0.00       0.01       0.00       0.01       0.01       0.01       0.01       0.01       0.01       0.01       0.01       0.01	1	POPULATION AND IRRIGATED ACREAGE DATA:	2015	2020	2030	2040	2050	2060
4         Total # Acres of Outside Intigation for the System         0.41         0.41         0.41         0.41         0.41         0.41         0.41         0.41         0.41         0.41         0.41         0.41         0.41         0.41         0.41         0.41         0.41         0.41         0.41         0.41         0.41         0.41         0.41         0.41         0.41         0.41         0.41         0.41         0.41         0.41         0.41         0.41         0.41         0.41         0.41         0.41         0.41         0.41         0.41         0.41         0.41         0.41         0.41         0.41         0.41         0.41         0.41         0.41         0.41         0.41         0.41         0.41         0.41         0.41         0.41         0.41         0.41         0.41         0.41         0.41         0.41         0.41         0.41         0.41         0.41         0.41         0.41         0.41         0.41         0.41         0.41         0.41         0.41         0.41         0.41         0.41         0.41         0.41         0.41         0.41         0.41         0.41         0.41         0.41         0.41         0.41         0.41         0.41	2	# Units in Service Area	45	45	45	45	45	45 CONNECTIONS
S COURCE REQUIREENTS         20         20         20         20         20         20         20         20         20         20         20         ACRE FEET           Annual Outdoor Usage = 14.000 Gal/Day/Connection         30,000         36,000         36,000         36,000         36,000         36,000         36,000         36,000         36,000         36,000         36,000         36,000         36,000         36,000         36,000         36,000         36,000         36,000         36,000         36,000         36,000         36,000         36,000         36,000         36,000         36,000         36,000         36,000         36,000         36,000         36,000         36,000         36,000         36,000         36,000         36,000         36,000         36,000         36,000         36,000         36,000         36,000         36,000         36,000         36,000         36,000         36,000         36,000         36,000         36,000         36,000         36,000         36,000         36,000         36,000         36,000         36,000         36,000         36,000         36,000         36,000         36,000         36,000         36,000         36,000         36,000         36,000         36,000         36,000         <	3	# Acres of Outside Irrigation per Unit	0.01	0.01	0.01	0.01	0.01	0.01 ACRES/CONN.
SOUNCE REQUIREMENTS         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         20         ACRE FEET           9         Feak Day Indoor Demand = 900 Gal/Day/Connection         30.000         36.000         36.000         36.000         36.000         36.000         36.000         36.000         36.000         36.000         36.000         36.000         36.000         36.000         36.000         36.000         36.000         36.000         36.000         36.000         36.000         36.000         36.000         36.000         36.000         36.000         36.000         36.000         36.000         36.000         36.000         36.000         36.000         36.000         36.000         36.000         36.000					0.41			
6 Annual Indoor Usage = 145.000 Gal/Year/Connection 20 20 20 20 20 20 20 ACRE FEET 7 Annual Outdoor Usage = 146.000 Gal/Year/Connection 30.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.000 38.00								
7         Annual Outdoor Usage - 1.87 Acro Feet/Inglated Acre         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77         0.77 <td< td=""><td></td><td></td><td>20</td><td>20</td><td>20</td><td>20</td><td>20</td><td>20 ACRE FEET</td></td<>			20	20	20	20	20	20 ACRE FEET
B         Total Annual Usage         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21         21								
9         Peak Day Indoor Demand = 300 Gal/Day/Connection         36,000         36,000         36,000         36,000         36,000         36,000         36,000         36,000         36,000         36,000         36,000         36,000         36,000         36,000         36,000         36,000         36,000         36,000         36,000         36,000         36,000         36,000         36,000         36,000         36,000         36,000         36,000         36,000         36,000         36,000         36,000         36,000         36,000         36,000         36,000         36,000         36,000         36,000         36,000         36,000         36,000         36,000         36,000         36,000         36,000         36,000         36,000         36,000         36,000         36,000         36,000         36,000         36,000         36,000         36,000         36,000         36,000         36,000         36,000         36,000         36,000         36,000         36,000         36,000         36,000         36,000         36,000         36,000         36,000         36,000         36,000         36,000         36,000         36,000         36,000         36,000         36,000         36,000         36,000         36,000         36,000								
10       Peak Day Outdoor Demand = 3.96 G/m/ringlade Acre       2.356       2.356       2.356       2.356       2.356       2.356       2.356       2.356       38.356       38.356       38.356       38.356       38.356       38.356       38.356       38.356       38.356       38.356       38.356       38.356       38.356       38.356       38.356       38.356       38.356       38.356       38.356       38.356       38.356       38.356       38.356       38.356       38.356       38.356       38.356       38.356       38.356       38.356       38.356       38.356       38.356       38.356       38.356       38.356       38.356       38.356       38.356       38.356       38.356       38.356       38.356       38.356       38.356       38.356       38.356       38.356       38.356       38.356       38.356       38.356       38.356       38.356       38.356       38.356       38.356       38.356       38.356       38.356       38.356       38.356       38.356       38.356       38.356       38.356       38.356       38.356       38.356       38.356       38.356       38.356       38.356       38.356       38.356       38.356       38.356       38.356       38.356       38.356       38.35								
11         Tolal Peak Day Demand         38,356         38,356         38,356         38,356         38,356         38,356         38,356         38,356         38,356         38,356         38,356         38,356         38,356         38,356         38,356         38,356         38,356         38,356         38,356         38,356         38,356         38,356         38,356         38,356         38,356         38,356         38,356         38,356         38,356         38,356         38,356         38,356         38,356         38,356         38,356         38,356         38,356         38,356         38,356         38,356         38,356         38,356         38,356         38,356         38,356         38,356         38,356         38,356         38,356         38,356         38,356         38,356         38,356         38,356         38,356         38,356         38,356         38,356         38,356         38,356         38,356         38,356         38,356         38,356         38,356         38,356         38,356         38,356         38,356         38,356         38,356         38,356         38,356         38,356         38,356         38,356         38,356         38,356         38,356         38,356         36,356         36,356								
12         (Gallons per Minule)         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27         27 <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>								
13       STOPAGE REQUIREMENTS       18,000       18,000       18,000       18,000       18,000       18,000       18,000       18,000       18,000       18,000       18,000       18,000       18,000       18,000       18,000       18,000       18,000       18,000       18,000       18,000       18,000       18,000       18,000       18,000       18,000       18,000       18,000       18,000       18,000       18,000       18,000       18,000       18,000       18,000       18,000       18,000       18,000       18,000       18,000       18,000       18,000       18,000       18,000       18,000       18,000       18,000       18,000       18,000       18,000       18,000       18,000       18,000       18,000       18,000       18,000       18,000       18,000       18,000       18,000       18,000       18,000       18,000       18,000       18,000       18,000       18,000       18,000       18,000       18,000       18,000       18,000       18,000       18,000       18,000       18,000       18,000       18,000       18,000       18,000       18,000       18,000       18,000       18,000       18,000       18,000       18,000       18,000       18,000       18,000       18,								
14       Indoor Requirement = 2048 Gal/Torgatel Acre       11,77       11,77       11,77       11,77       11,77       11,77       11,77       11,77       11,77       11,77       11,77       11,77       11,77       11,77       11,77       11,77       11,77       11,77       11,77       11,77       11,77       11,77       11,77       11,77       11,77       11,77       11,77       11,77       11,77       11,77       11,77       11,77       11,77       11,77       11,77       11,77       11,77       11,77       11,77       11,77       11,77       11,77       11,77       11,77       11,77       11,77       11,77       11,77       11,77       11,77       11,77       11,77       11,77       11,77       11,77       11,77       11,77       11,77       11,77       11,77       11,77       11,77       11,77       11,77       11,77       11,77       11,77       11,77       11,77       11,77       11,77       11,77       11,77       11,77       11,77       11,77       11,77       11,77       11,77       11,77       11,77       11,77       11,77       11,77       11,77       11,77       11,77       11,77       11,77       11,77       11,77       11,77       11,77<			21	21	21	21	21	27 GPM
15       Outside Infigation Requirement = 2,848 Gal/Irrigated Acre       1,177       1,177       1,177       1,177       1,177       1,177       1,177       1,177       1,177       1,177       1,177       1,177       1,177       1,177       1,177       1,177       1,177       1,177       1,177       1,177       1,177       1,177       1,177       1,177       1,177       1,177       1,177       1,177       1,177       1,177       1,177       1,177       1,177       1,177       1,177       1,177       1,177       1,177       1,177       1,177       1,177       1,177       1,177       1,177       1,177       1,177       1,177       1,177       1,177       1,177       1,177       1,177       1,177       1,177       1,177       1,177       1,178       1,118       1,918       1,918       1,918       1,918       1,918       1,918       1,918       1,918       1,918       1,918       1,918       1,918       1,212       1,23       123       123       123       123       123       123       123       123       123       123       123       123       123       123       123       123       123       123       123       123       123       123								
16       Fire Storage - NA       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0								
17       Emergency Storage, 10%       1,918       1,918       1,918       1,918       1,918       1,918       1,918       1,918       1,918       1,918       1,918       1,918       1,918       1,918       1,918       1,918       1,918       1,918       1,918       1,918       1,918       1,918       1,918       1,918       1,918       1,918       1,918       1,918       1,918       1,918       1,918       1,918       1,918       1,918       1,918       1,918       1,918       1,918       1,918       1,918       1,918       1,918       1,918       1,918       1,918       1,918       1,918       1,918       1,918       1,918       1,918       1,918       1,918       1,918       1,918       1,918       1,918       1,918       1,918       1,918       1,918       1,918       1,918       1,918       1,918       1,918       1,918       1,918       1,918       1,918       1,918       1,918       1,918       1,918       1,918       1,918       1,918       1,918       1,918       1,918       1,918       1,918       1,918       1,918       1,918       1,918       1,918       1,918       1,918       1,918       1,918       1,918       1,918       1,918<								
18         Total Storage (Rounded)         20.000         20.000         20.000         20.000         20.000         20.000         20.000         20.000         20.000         20.000         20.000         20.000         20.000         20.000         20.000         20.000         20.000         20.000         20.000         20.000         20.000         20.000         20.000         20.000         20.000         20.000         20.000         20.000         20.000         20.000         20.000         20.000         20.000         20.000         20.000         20.000         20.000         20.000         20.000         20.000         20.000         20.000         20.000         20.000         20.000         20.000         20.000         20.000         20.000         20.000         20.000         20.000         20.000         20.000         20.000         20.000         20.000         20.000         20.000         20.000         20.000         20.000         20.000         20.000         20.000         20.000         20.000         20.000         20.000         20.000         20.000         20.000         20.000         20.000         20.000         20.000         20.000         20.000         20.000         20.000         20.000         20.000								
19       DSTRUETION SYSTEM REQUIREMENTS       22       22       22       22       22       22       22       23       123       123       123       123       123       123       123       123       123       123       123       123       123       123       123       123       123       123       123       123       123       123       123       123       123       123       123       123       123       123       123       123       123       123       123       123       123       123       123       123       123       123       123       123       123       123       123       123       123       123       123       123       123       123       123       123       123       123       123       123       123       123       123       123       123       123       123       123       123       123       123       123       123       123       123       123       123       123       123       123       123       123       123       123       123       123       123       123       123       123       123       123       123       123       123       12								
20       Peak Hour Indoor Demand = 10.8(N-64); N = # Connections       123       123       123       123       123       123       123       123       123       123       123       123       124       Peak Hour Undoir Demand = 7.9.2 Gm/Intrigated Acre       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3 <t< td=""><td>18</td><td></td><td>20,000</td><td>20,000</td><td>20,000</td><td>20,000</td><td>20,000</td><td>20,000 GALLONS</td></t<>	18		20,000	20,000	20,000	20,000	20,000	20,000 GALLONS
121       Peak Hour Outside Demand = 7.52 Gpm/Irrigated Acre       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3       3	19	DISTRIBUTION SYSTEM REQUIREMENTS						
22         Total Peak Hour Demand         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127	20	Peak Hour Indoor Demand = 10.8(N ^A .64); N = # Connections	123	123	123	123	123	123 GPM
22         Total Peak Hour Demand         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127         127								
23       ADDITIONAL SOURCE CAPACITY NEEDED       0.416185563       0.416185563       0.416185563       0.416185563       0.416185563       0.416185563       0.416185563       0.416185563       0.416185563       0.416185563       0.416185563       0.416185563       0.416185563       0.416185563       0.416185563       0.416185563       0.416185563       0.416185563       0.416185563       0.416185563       0.416185563       0.416185563       0.416185563       0.416185563       0.416185563       0.416185563       0.416185563       0.416185563       0.416185563       0.416185563       0.416185563       0.416185563       0.416185563       0.416185563       0.416185563       0.416185563       0.416185563       0.416185563       0.416185563       0.416185563       0.416185563       0.416185563       0.416185563       0.416185563       0.416185563       0.416185563       0.416185563       0.416185563       0.416185563       0.416185563       0.416185563       0.416185563       0.416185563       0.416185563       0.416185563       0.416185563       0.416185563       0.416185563       0.416185563       0.416185563       0.416185563       0.416185563       0.416185563       0.416185563       0.416185563       0.416185563       0.416185563       0.416185563       0.416185563       0.416185563       0.416185563       0.416185563       0.41								
24       Physical Source Capacity on Peak Day Basis       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0								
22       Physical Source Capacity on Annual Volume Basis       0       0       0       0       0       0 AcreFeet/Year         26       Water Rights Source Capacity on Peak Day Basis       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2<								
26       Water Rights Source Capacity on Nanual Volume Basis       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2       2								
27     Water Rights Source Capacity on Annual Volume Basis     2     2     2     2     2     2     2 AcreFeet/Year       28     ADDITIONAL STORAGE CAPACITY NEEDEE     19,782     19,782     19,782     19,782     19,782     19,782     19,782     19,782     19,782     19,782     19,782     19,782     19,782     19,782     19,782     19,782     19,782     19,782     19,782     19,782     19,782     19,782     19,782     19,782     19,782     19,782     19,782     19,782     19,782     19,782     19,782     19,782     19,782     19,782     19,782     19,782     19,782     19,782     19,782     19,782     19,782     19,782     19,782     19,782     Gallons       30     EXISTING PARSICAL SOURCE CAPACITY     Instantaneous Capacity     Annual Volume Capacity     Acre Feet/Year       31     Catlor Paek Day Sources     80     Gallon/Minute     105     Acre Feet/Year       35     Total Peak Day Sources     31     Gallon/Minute     19     Acre Feet/Year       34     Total Peak Day Sources     31     Gallon/Minute     19     Acre Feet/Year       35     Total Peak Day Sources     31     Gallon/Minute     19     Acre Feet/Year       34     Total Peak Day Sources								
28     ADDITIONAL STORAGE CAPACITY NEEDEC								
29       Storage Capacity Needed       19,782       19,782       19,782       19,782       19,782       19,782       Gallons         30       EXISTING PHYSICAL SOURCE CAPACITY       Instantaneous Capacity       Annual Volume Capacity       Annual Volume Capacity         31       Well       30       Gallon/Minute       81       Acre Feet/Year         32       BRWCD Connection       50       Gallon/Minute       81       Acre Feet/Year         34       Total Peak Day Sources       80       Gallon/Minute       105       Acre Feet/Year         35       Existing Watter Rights Source with Safety Factor       1.25       105       Acre Feet/Year         36       Total Peak Day Sources with Safety Factor       10       Gallon/Minute       19       Acre Feet/Year         37       EXISTING WATER RIGHTS SOURCE CAPACITY       31       Gallon/Minute       19       Acre Feet/Year         38       RWCD Connection       0       Gallon/Minute       19       Acre Feet/Year         40       1       10tal Peak Day Sources with Safety Factor       2.5       Gallon/Minute       19       Acre Feet/Year         41       Total Peak Day Sources with Safety Factor       2.5       Gallon/Minute       19       Acre Feet/Year       4 </td <td></td> <td></td> <td>2</td> <td>2</td> <td>2</td> <td>Ζ</td> <td>2</td> <td>2 Actereet/feat</td>			2	2	2	Ζ	2	2 Actereet/feat
30       EXISTING PHYSICAL SOURCE CAPACITY       Instantaneous Capacity       Annual Volume Capacity         31       Well       30       Gallon/Minute       24 Acre Feet/Year         31       BRWVCD Connection       80       Gallon/Minute       81 Acre Feet/Year         33       Total Peak Day Sources       80       Gallon/Minute       105 Acre Feet/Year         34       Total Peak Day Sources with Safety Factor       1.25       105 Acre Feet/Year         35       Gattery Factor       1.25       105 Acre Feet/Year         36       BRWCD Connection       0 Gallon/Minute       105 Acre Feet/Year         37       EXISTING WATER RIGHTS SOURCE CAPACITY       31       Gallon/Minute       19 Acre Feet/Year         38       BRWCD Connection       0 Gallon/Minute       19 Acre Feet/Year       40         41       Total Peak Day Sources       31       Gallon/Minute       125         42       Safety Factor       1.25       43       Total Peak Day Sources with Safety Factor       2.5         43       Total Peak Day Sources with Safety Factor       2.5       41       Catlery Factor       1.25         44       EXISTING \$TORAGE CAPACITY       25       Catlery Factor       1.25       41         52       H			10 792	10 792	10 792	10 792	10 792	10.792 Collons
31       Well       30       Galion/Minute       24       Acre Feet/Year         32       BRWCD Connection       81       Acre Feet/Year         34       Total Peak Day Sources       80       Gallon/Minute       81       Acre Feet/Year         34       Total Peak Day Sources with Safety Factor       125       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5       5 </td <td></td> <td></td> <td></td> <td></td> <td></td> <td>- , -</td> <td></td> <td>19,762 Gallolis</td>						- , -		19,762 Gallolis
32     BRWCD Connection     50 Gallon/Minute     81 Acre Feet/Year       33			Instantaneous Capa	CITV		nnual volume Cap		
33         34       Total Peak Day Sources         5       Safety Factor         105       Safety Factor         6       Gallon/Minute         105       Acre Feet/Year         37       EXISTING WATER RIGHTS SOURCE CAPACITY         38       Well       31         39       BRWCD Connection       0         40       0       0         41       Total Peak Day Sources       31         41       Total Peak Day Sources       31         42       Safety Factor       0         43       Total Peak Day Sources       31         44       Existing StorAces       31         45       Safety Factor       125         45       Total Peak Day Sources with Safety Factor       25         46       19       Acre Feet/Year         47       Total Storage       218         48       ADDITIONAL CONNECTIONS SERVICEABLE WITH EXISTING CAPACITY       43         49       # based on Peak Day Physical Source Capacity       63       Connections         51       # based on Annual Physical Source Capacity       -30       Connections         51       # based on Annual Physical Source Capacity       -3					A			
34     Total Peak Day Sources     80     Gallon/Minute       35     Safety Factor     1.25       61     Total Peak Day Sources with Safety Factor     64     Gallon/Minute     105       37     EXISTING WATER RIGHTS SOURCE CAPACITY     10     Acre Feet/Year       38     Well     31     Gallon/Minute     19     Acre Feet/Year       39     BRVCD Connection     0     Gallon/Minute     0     Acre Feet/Year       40     0     0     Gallon/Minute     19     Acre Feet/Year       41     Total Peak Day Sources     31     Gallon/Minute     19     Acre Feet/Year       41     Total Peak Day Sources with Safety Factor     1.25     10     Acre Feet/Year       42     Safety Factor     1.25     125     125       43     Total Peak Day Sources with Safety Factor     2.5     Gallon/Minute     19     Acre Feet/Year       44     EXISTING STORAGE CAPACITY     4     EXISTING STORAGE CAPACITY     14     EXISTING STORAGE CAPACITY     19     Acre Feet/Year       45     2 - Hydropneumatic Tanks     218     Gallons     19     Acre Feet/Year       46     4     Total Storage     218     Gallons     10     10       47     Total Storage     63			30 G	allon/Minute	A	24 A	cre Feet/Year	
35 Safety Factor       1.25         36 Total Peak Day Sources with Safety Factor       64 Gallon/Minute       105 Acre Feet/Year         38 Well       31 Gallon/Minute       19 Acre Feet/Year         39 BRWCD Connection       0 Gallon/Minute       0 Acre Feet/Year         40       11 Total Peak Day Sources       31 Gallon/Minute       0 Acre Feet/Year         41 Total Peak Day Sources       31 Gallon/Minute       19 Acre Feet/Year         42 Safety Factor       1.25       31 Total Peak Day Sources with Safety Factor       25 Gallon/Minute         43 Total Peak Day Sources with Safety Factor       25 Gallon/Minute       19 Acre Feet/Year         44 EXISTING STORAGE CAPACITY       12       19 Acre Feet/Year         45 2 - Hydropneumatic Tanks       218 Gallons       46         47       Total Storage       218 Gallons         48       ADDITIONAL CONNECTIONS SERVICEABLE WITH EXISTING CAPACITY       49 # based on Peak Day Physical Source Capacity       63 Connections         50 # based on Annual Physical Source Capacity       63 Connections       54 based on Annual Physical Source Capacity       32 Connections         51 # based on Annual Water Rights Capacity       -3 Connections       55 # based on Annual Water Rights Capacity       -4 Connections         52 # based on Annual Water Rights Capacity       -4 Connections       53		BRWCD Connection	30 G	allon/Minute	A	24 A	cre Feet/Year	
36     Total Peak Day Sources with Safety Factor     64     Gallon/Minute     105     Acre Feet/Year       37     EXISTING WATER RIGHTS SOURCE CAPACITY     31     Gallon/Minute     19     Acre Feet/Year       38     Well     31     Gallon/Minute     19     Acre Feet/Year       39     BRWCD Connection     0     Gallon/Minute     0     Acre Feet/Year       40     0     0     Gallon/Minute     0     Acre Feet/Year       41     Total Peak Day Sources with Safety Factor     125     125     125       43     Total Peak Day Sources with Safety Factor     25     Gallon/Minute     19     Acre Feet/Year       44     EXISTING STORAGE CAPACITY     19     Acre Feet/Year     45     12     - Hydropneumatic Tanks     218     Gallons       46     7     Total Storage     218     Gallons     46     47     49     # based on Peak Day Physical Source Capacity     63     Connections       51     # based on Annual Physical Source Capacity     180     Connections     51     51     51     42     Connections       52     # based on Annual Physical Source Capacity     -3     Connections     52     52     52     52     53     54     54     54     54     54	33	BRWCD Connection	30 G 50 G	allon/Minute allon/Minute	A	24 A	cre Feet/Year	
37       EXISTING WÅTER RIGHTS SOURCE CAPACITY         38       Well       31 Gallon/Minute         39       BRWCD Connection       0 Gallon/Minute         40       0 Acre Feet/Year         41       Total Peak Day Sources       31 Gallon/Minute         42       Safety Factor       1.25         43       Total Peak Day Sources with Safety Factor       25 Gallon/Minute         44       EXISTING STORAGE CAPACITY       19 Acre Feet/Year         45       2 - Hydropneumatic Tanks       218 Gallons         46       10       10         47       Total Storage       218 Gallons         48       ADDITIONAL CONNECTIONS SERVICEABLE WITH EXISTING CAPACITY       49         49       # based on Peak Day Physical Source Capacity       63 Connections         50       # based on Annual Physical Source Capacity       -3 Connections         51       # based on Annual Water Rights Capacity       -3 Connections         52       # based on Annual Water Rights Capacity       -4 Connections         53       # based on Storage Capacity       -4 Connections	33 34	BRWCD Connection Total Peak Day Sources	30 G 50 G 80 G	allon/Minute allon/Minute	A	24 A	cre Feet/Year	
38     Well     31     Gallon/Minute     19     Acre Feet/Year       39     BRWCD Connection     0     Gallon/Minute     0     Acre Feet/Year       40	33 34 35	BRWCD Connection Total Peak Day Sources Safety Factor	30 G 50 G 80 G 1.25	allon/Minute allon/Minute allon/Minute	A	24 A 81 A	cre Feet/Year cre Feet/Year	
39     BRWCD Connection     0 Gallon/Minute     0 Acre Feet/Year       40     0       41     Total Peak Day Sources     31 Gallon/Minute       42     Safety Factor     1.25       43     Total Peak Day Sources with Safety Factor     25 Gallon/Minute       44     EXISTING STORAGE CAPACITY     19 Acre Feet/Year       45     2 - Hydropneumatic Tanks     218 Gallons       46     Total Storage     218 Gallons       47     Total Storage     218 Gallons       48     ADDITIONAL CONNECTIONS SERVICEABLE WITH EXISTING CAPACITY     49       49     # based on Peak Day Physical Source Capacity     63 Connections       51     # based on Annual Physical Source Capacity     -3 Connections       51     # based on Annual Water Rights Capacity     -4 Connections       52     # based on Annual Water Rights Capacity     -4 Connections       53     # based on Storage Capacity     -45 Connections	33 34 35 36	BRWCD Connection Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor	30 G 50 G 80 G 1.25	allon/Minute allon/Minute allon/Minute	~	24 A 81 A	cre Feet/Year cre Feet/Year	
40       31 Gallon/Minute         41 Total Peak Day Sources       31 Gallon/Minute         42 Safety Factor       1.25         33 Total Peak Day Sources with Safety Factor       25 Gallon/Minute         44 EXISTING STORAGE CAPACITY       19 Acre Feet/Year         45 2 - Hydropneumatic Tanks       218 Gallons         46       Total Storage         47       Total Storage         48       ADDITIONAL CONNECTIONS SERVICEABLE WITH EXISTING CAPACITY         49       # based on Peak Day Physical Source Capacity       63 Connections         50       # based on Annual Physical Source Capacity       -3 Connections         51       # based on Annual Water Rights Capacity       -3 Connections         52       # based on Storage Capacity       -45 Connections	33 34 35 36 37	BRWCD Connection Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY	30 G 50 G 80 G 1.25 64 G	allon/Minute allon/Minute allon/Minute allon/Minute	A	24 A 81 A 105 A	cre Feet/Year cre Feet/Year cre Feet/Year	
41       Total Peak Day Sources       31       Gallon/Minute         42       Safety Factor       1.25         43       Total Peak Day Sources with Safety Factor       25       Gallon/Minute       19       Acre Feet/Year         44       EXISTING STORAGE CAPACITY       19       Acre Feet/Year         45       2 - Hydropneumatic Tanks       218       Gallons         46       Total Storage       218       Gallons         47       Total Storage       218       Gallons         48       ADDITIONAL CONNECTIONS SERVICE ABLE WITH EXISTING CAPACITY       49       # based on Peak Day Physical Source Capacity       63       Connections         50       # based on Peak Day Water Rights Capacity       -3       Connections       51         51       # based on Annual Water Rights Capacity       -4       Connections       52         52       # based on Annual Water Rights Capacity       -4       Connections         52       # based on Annual Water Rights Capacity       -4       Connections         53       # based on Storage Capacity       -45       Connections	33 34 35 36 37 38	BRWCD Connection Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Well Well	30 G 50 G 80 G 1.25 64 G 31 G	allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute		24 A 81 A <u>105 A</u> 19 A	cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year	
42 Safety Factor       1.25         43 Total Peak Day Sources with Safety Factor       25 Gallon/Minute       19 Acre Feet/Year         44 EXISTING STORAGE CAPACITY       218 Gallons         45       2 - Hydropneumatic Tanks       218 Gallons         46       Total Storage       218 Gallons         47       Total Storage       218 Gallons         48       ADDITIONAL CONNECTIONS SERVICEABLE WITH EXISTING CAPACITY       49         49       # based on Peak Day Physical Source Capacity       63 Connections         50       # based on Annual Physical Source Capacity       30 Connections         51       # based on Annual Water Rights Capacity       -3 Connections         52       # based on Annual Water Rights Capacity       -4 Connections         53       # based on Storage Capacity       -4 Connections	33 34 35 36 37 38 39	BRWCD Connection Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Well BRWCD Connection	30 G 50 G 80 G 1.25 64 G 31 G	allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute		24 A 81 A <u>105 A</u> 19 A	cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year	
43       Total Peak Day Sources with Safety Factor       25 Gallon/Minute       19 Acre Feet/Year         44       EXISTING STORAGE CAPACITY       14 Acre Feet/Year         45       2 - Hydropneumatic Tanks       218 Gallons         46       Total Storage       218 Gallons         47       Total Storage       218 Gallons         48       ADDITIONAL CONNECTIONS SERVICEABLE WITH EXISTING CAPACITY       43 Connections         49       # based on Peak Day Physical Source Capacity       63 Connections         50       # based on Annual Physical Source Capacity       180 Connections         51       # based on Annual Water Rights Capacity       -3 Connections         52       # based on Storage Capacity       -4 Connections         53       # based on Storage Capacity       -45 Connections	33 34 35 36 37 38 39	BRWCD Connection Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Well BRWCD Connection	30 G 50 G 1.25 64 G 31 G 0 G	allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute		24 A 81 A <u>105 A</u> 19 A	cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year	
44       EXISTING STORAGE CAPACITY         45       2 - Hydropneumatic Tanks         46       Total Storage         47       Total Storage         48       ADDITIONAL CONNECTIONS SERVICEABLE WITH EXISTING CAPACITY         49       # based on Peak Day Physical Source Capacity       63 Connections         50       # based on Annual Physical Source Capacity       180 Connections         51       # based on Annual Water Rights Capacity       -3 Connections         52       # based on Storage Capacity       -45 Connections	33 34 35 36 37 38 39 40 41	BRWCD Connection Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Well BRWCD Connection Total Peak Day Sources	30 G 50 G 1.25 64 G 31 G 0 G	allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute		24 A 81 A <u>105 A</u> 19 A	cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year	
45     2 - Hydropneumatic Tanks     218 Gallons       46     Total Storage     218 Gallons       47     Total Storage     218 Gallons       48     ADDITIONAL CONNECTIONS SERVICEABLE WITH EXISTING CAPACITY     49       49     # based on Peak Day Physical Source Capacity     63 Connections       50     # based on Annual Physical Source Capacity     180 Connections       51     # based on Annual Water Rights Capacity     -3 Connections       52     # based on Annual Water Rights Capacity     -4 Connections       53     # based on Storage Capacity     -45 Connections	33 34 35 36 37 38 39 40 41	BRWCD Connection Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Well BRWCD Connection Total Peak Day Sources	30 G 50 G 1.25 64 G 31 G 0 G 31 G	allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute		24 A 81 A <u>105 A</u> 19 A	cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year	
46     Total Storage     218 Gallons       47     Total Storage     218 Gallons       48     ADDITIONAL CONNECTIONS SERVICEABLE WITH EXISTING CAPACITY     63 Connections       50 # based on Peak Day Physical Source Capacity     180 Connections       50 # based on Annual Physical Source Capacity     180 Connections       51 # based on Peak Day Water Rights Capacity     -3 Connections       52 # based on Annual Water Rights Capacity     -4 Connections       53 # based on Storage Capacity     -45 Connections	33 34 35 36 37 38 39 40 41 42	BRWCD Connection Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Well BRWCD Connection Total Peak Day Sources Safety Factor	30 G 50 G 1.25 64 G 0 G 31 G 31 G 1.25	allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute		24 Å 81 A 105 A 19 A 0 A	cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year	
46     Total Storage     218 Gallons       47     Total Storage     218 Gallons       48     ADDITIONAL CONNECTIONS SERVICEABLE WITH EXISTING CAPACITY     63 Connections       50     # based on Peak Day Physical Source Capacity     63 Connections       50     # based on Annual Physical Source Capacity     180 Connections       51     # based on Annual Water Rights Capacity     -3 Connections       52     # based on Annual Water Rights Capacity     -4 Connections       53     # based on Storage Capacity     -45 Connections	33 34 35 36 37 38 39 40 41 42 43	BRWCD Connection Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Well BRWCD Connection Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor	30 G 50 G 1.25 64 G 0 G 31 G 31 G 1.25	allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute	A	24 Å 81 A 105 A 19 A 0 A	cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year	
48       ADDITIONAL CONNECTIONS SERVICEABLE WITH EXISTING CAPACITY         49       # based on Peak Day Physical Source Capacity       63 Connections         50       # based on Annual Physical Source Capacity       180 Connections         51       # based on Peak Day Water Rights Capacity       -3 Connections         52       # based on Annual Water Rights Capacity       -4 Connections         53       # based on Storage Capacity       -45 Connections	33 34 35 36 37 38 39 40 41 42 43 44	BRWCD Connection Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Well BRWCD Connection Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING STORAGE CAPACITY	30 G 50 G 1.25 64 G 31 G 0 G 1.25 25 G	allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute		24 Å 81 A 105 A 19 A 0 A	cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year	
48       ADDITIONAL CONNECTIONS SERVICEABLE WITH EXISTING CAPACITY         49       # based on Peak Day Physical Source Capacity       63 Connections         50       # based on Annual Physical Source Capacity       180 Connections         51       # based on Peak Day Water Rights Capacity       -3 Connections         52       # based on Annual Water Rights Capacity       -4 Connections         53       # based on Storage Capacity       -45 Connections	33 34 35 36 37 38 39 40 41 42 43 44 45 46	BRWCD Connection Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Well BRWCD Connection Total Peak Day Sources Safety Factor EXISTING STORAGE CAPACITY 2 - Hydropneumatic Tanks	30 G 50 G 1.25 64 G 31 G 0 G 1.25 25 G	allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute		24 Å 81 A 105 A 19 A 0 A	cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year	
49# based on Peak Day Physical Source Capacity63Connections50# based on Annual Physical Source Capacity180Connections51# based on Peak Day Water Rights Capacity-3Connections52# based on Annual Water Rights Capacity-4Connections53# based on Storage Capacity-45Connections	33 34 35 36 37 38 39 40 41 42 43 44 45 46	BRWCD Connection Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Well BRWCD Connection Total Peak Day Sources Safety Factor EXISTING STORAGE CAPACITY 2 - Hydropneumatic Tanks	30 G 50 G 80 G 1.25 64 G 31 G 0 G 1.25 25 G 218 G	allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allons		24 Å 81 A 105 A 19 A 0 A	cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year	
50 # based on Annual Physical Source Capacity     180 Connections       51 # based on Peak Day Water Rights Capacity     -3 Connections       52 # based on Annual Water Rights Capacity     -4 Connections       53 # based on Storage Capacity     -45 Connections	33 34 35 36 37 38 39 40 41 42 43 44 45 46 47	BRWCD Connection Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Well BRWCD Connection Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING STORAGE CAPACITY 2 - Hydropneumatic Tanks Total Storage	30 G 50 G 80 G 1.25 64 G 0 G 1.25 25 G 218 G 218 G 218 G	allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allons		24 Å 81 A 105 A 19 A 0 A	cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year	
51 # based on Peak Day Water Rights Capacity       -3 Connections         52 # based on Annual Water Rights Capacity       -4 Connections         53 # based on Storage Capacity       -45 Connections	33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48	BRWCD Connection Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Well BRWCD Connection Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING STORAGE CAPACITY 2 - Hydropneumatic Tanks Total Storage ADDITIONAL CONNECTIONS SERVICEABLE WITH EXISTING	30 G 50 G 80 G 1.25 64 G 0 G 31 G 1.25 25 G 218 G 218 G 218 G 218 G	allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allons allons		24 Å 81 A 105 A 19 A 0 A	cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year	
52 # based on Annual Water Rights Capacity     -4 Connections       53 # based on Storage Capacity     -45 Connections	33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49	BRWCD Connection Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Well BRWCD Connection Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING STORAGE CAPACITY 2 - Hydropneumatic Tanks Total Storage ADDITIONAL CONNECTIONS SERVICEABLE WITH EXISTING # based on Peak Day Physical Source Capacity	30 G 50 G 80 G 1.25 64 G 0 G 31 G 1.25 25 G 218 G 218 G 218 G 218 G 218 G 63 C	allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allons allons allons		24 Å 81 A 105 A 19 A 0 A	cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year	
53 # based on Storage Capacity -45 Connections	33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50	BRWCD Connection Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Well BRWCD Connection Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING STORAGE CAPACITY 2 - Hydropneumatic Tanks Total Storage ADDITIONAL CONNECTIONS SERVICEABLE WITH EXISTING # based on Peak Day Physical Source Capacity # based on Annual Physical Source Capacity	30 G 50 G 80 G 1.25 64 G 0 G 1.25 25 G 218 G 218 G 218 G 218 G 218 C 218 C 218 C	allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allons allons allons		24 Å 81 A 105 A 19 A 0 A	cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year	
	33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51	BRWCD Connection Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Well BRWCD Connection Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING STORAGE CAPACITY 2 - Hydropneumatic Tanks Total Storage ADDITIONAL CONNECTIONS SERVICEABLE WITH EXISTING # based on Peak Day Physical Source Capacity # based on Peak Day Water Rights Capacity	30 G 50 G 80 G 1.25 64 G 31 G 31 G 1.25 25 G 218 G 218 G 218 G 218 G 218 C 218 C 218 C 218 C 218 C 218 C 218 C 218 C 218 C	allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allons allons allons onnections onnections onnections		24 Å 81 A 105 A 19 A 0 A	cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year	
	3334 355 366 377 388 399 400 411 422 433 444 454 466 477 488 499 500 511 522	BRWCD Connection Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Well BRWCD Connection Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING STORAGE CAPACITY 2 - Hydropneumatic Tanks Total Storage ADDITIONAL CONNECTIONS SERVICEABLE WITH EXISTING # based on Peak Day Physical Source Capacity # based on Annual Physical Source Capacity # based on Annual Physical Source Capacity # based on Annual Water Rights Capacity # based on Annual Water Rights Capacity # based on Annual Water Rights Capacity	30 G 50 G 80 G 1.25 64 G 0 G 31 G 1.25 25 G 218 G 218 G 218 G 218 G 218 G 63 C 180 C -3 C -3 C -4 C	allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allons allons onnections onnections onnections onnections		24 Å 81 A 105 A 19 A 0 A	cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year	

Notes:

Line 2: Hot Springs Trailer Court currently serves 45 mobile home units, which is the maximum number of units.

Line 3: Based on average water use in 2014-2015 with average lawn size calculated to match total water use per residential connection.

Lines 5-18: Water Demands calculated based on Utah Division of Drinking Water Standards assuming Zone 4 for outside watering requirements.

Lines 24-32: When data was not available for either the annual limit (ac-ft/yr) or the maximum flow rate (cfs or gpm), the other value was obtained by a straight units conversion.

Tech	inical data for Howell Town						
1	POPULATION AND IRRIGATED ACREAGE DATA:	2015	2020	2030	2040	2050	2060
2	# Units in Service Area	109	109	128	150	176	220 CONNECTIONS
	# Acres of Outside Irrigation per Unit	0.18	0.18	0.18	0.18	0.18	0.18 ACRES/CONN.
4	Total # Acres of Outside Irrigation for the System	20.06	20.06	23.55	27.64	32.43	40.54 ACRES
5	SOURCE REQUIREMENTS						
6	Annual Indoor Usage = 146,000 Gal/Year/Connection	49	49	57	67	79	99 ACRE FEET
7	Annual Outdoor Usage = 1.87 Acre Feet/Irrigated Acre	38	38	44	52	61	76 ACRE FEET
8	Total Annual Usage	86	86	101	119	140	175 ACRE FEET
g	Peak Day Indoor Demand = 800 Gal./Day/Connection	87,200	87,200	102,341	120,110	140,965	176,206 GAL/DAY
10	Peak Day Outdoor Demand = 3.96 Gpm/Irrigated Acre	114,409	114,409	134,274	157,588	184,950	231,187 GAL/DAY
11	Total Peak Day Demand	201,609	201,609	236,614	277,698	325,914	407,393 GAL/DAY
12	(Gallons per Minute)	140.01	140	164	193	226	283 GPM
13	STORAGE REQUIREMENTS						
14	Indoor Requirement = 400 Gal/Connection	43,600	43,600	51,170	60,055	70,482	88,103 GALLONS
15	Outside Irrigation Requirement = 2,848 Gal/Irrigated Acre	57,140	57,140	67,062	78,705	92,371	115,464 GALLONS
	Fire Storage (500 gpm for 1/2 hour)	15,000	15,000	15,000	15,000	15,000	15.000 GALLONS
17		10,074	10,074	11,823	13,876	16,285	20,357 GALLONS
18		130,000	130,000	150,000	170,000	190,000	240,000 GALLONS
	DISTRIBUTION SYSTEM REQUIREMENTS				.,		
20		217	217	241	267	296	341 GPM
21	Peak Hour Outside Demand = 7.92 Gpm/Irrigated Acre	159	159	186	219	257	321 GPM
22		376	376	427	486	553	662 GPM
23		0.519016723	0.519016723	0.609133597	0.714897463	0.839025109	1.048781387
	Physical Source Capacity on Peak Day Basis	0.010010120	0.010010120	0.000100001	0.114001400	0.000020100	13 Gallon/Minute
	Physical Source Capacity on Annual Volume Basis	Ő	0	õ	ő	0	0 AcreFeet/Year
	Water Rights Source Capacity on Peak Day Basis	Ő	Ő	õ	ő	0	0 Gallon/Minute
	Water Rights Source Capacity on Annual Volume Basis	0	0	0	ő	0	0 AcreFeet/Year
	ADDITIONAL STORAGE CAPACITY NEEDEL	0	Ű	0	0	Ū	07/0101 000 1001
20	Storage Capacity Needed	0	0	0	0	0	40 000 Gallons
	Storage Capacity Needed	0 Destantaneous Cana	0 city	0	0 nnual Volume Car	0	40,000 Gallons
30	EXISTING PHYSICAL SOURCE CAPACITY	nstantaneous Capa	city		nnual Volume Cap	acity	40,000 Gallons
30 31	EXISTING PHYSICAL SOURCE CAPACITY I Hillside Spring (min flow in 2015)	nstantaneous Capa 7 G	city allon/Minute		nnual Volume Cap 12 A	acity Acre Feet/Year	40,000 Gallons
30 31 32	EXISTING PHYSICAL SOURCE CAPACITY I Hillside Spring (min flow in 2015) 77 Well	nstantaneous Capa 7 G 100 G	city allon/Minute allon/Minute		nnual Volume Cap 12 A 81 A	acity Acre Feet/Year Acre Feet/Year	40,000 Gallons
30 31 32 33	EXISTING PHYSICAL SOURCE CAPACITY I Hillside Spring (min flow in 2015) 77 Well Kotter Well	nstantaneous Capa 7 G 100 G	city allon/Minute		nnual Volume Cap 12 A 81 A	acity Acre Feet/Year	40,000 Gallons
30 31 32 33 34	EXISTING PHYSICAL SOURCE CAPACITY I Hillside Spring (min flow in 2015) 77 Well Kotter Well	nstantaneous Capa 7 G 100 G 230 G	city allon/Minute allon/Minute allon/Minute		nnual Volume Cap 12 A 81 A	acity Acre Feet/Year Acre Feet/Year	40,000 Gallons
30 31 32 33 34 35	EXISTING PHYSICAL SOURCE CAPACITY I Hillside Spring (min flow in 2015) 77 Well Kotter Well Total Peak Day Sources	nstantaneous Capa 7 G 100 G 230 G 337 G	city allon/Minute allon/Minute		nnual Volume Cap 12 A 81 A	acity Acre Feet/Year Acre Feet/Year	40,000 Gallons
30 31 32 33 34 35 36	EXISTING PHYSICAL SOURCE CAPACITY I Hillside Spring (min flow in 2015) 77 Well Kotter Well Total Peak Day Sources Safety Factor	nstantaneous Capa 7 G 100 G 230 G 337 G 1.25	city iallon/Minute iallon/Minute iallon/Minute iallon/Minute		nnual Volume Cap 12 A 81 A 186 A	acity kcre Feet/Year kcre Feet/Year kcre Feet/Year	40,000 Gallons
30 31 32 33 34 35 36 37	EXISTING PHYSICAL SOURCE CAPACITY I Hillside Spring (min flow in 2015) 77 Well Kotter Well Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor	nstantaneous Capa 7 G 100 G 230 G 337 G 1.25	city allon/Minute allon/Minute allon/Minute		nnual Volume Cap 12 A 81 A 186 A	acity Acre Feet/Year Acre Feet/Year	40,000 Gallons
30 31 32 33 34 35 36 37 38	EXISTING PHYSICAL SOURCE CAPACITY I Hillside Spring (min flow in 2015) 77 Well Kotter Well Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY	nstantaneous Capa 7 G 100 G 230 G 337 G 1.25 270 G	city allon/Minute allon/Minute allon/Minute allon/Minute		nnual Volume Cap 12 A 81 A 186 A 278 A	acity Acre Feet/Year Acre Feet/Year Acre Feet/Year	40,000 Gallons
30 31 32 33 34 35 36 37 38 39	EXISTING PHYSICAL SOURCE CAPACITY I Hillside Spring (min flow in 2015) 77 Well Kotter Well Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Hillside Spring	nstantaneous Capa 7 G 100 G 230 G 337 G 1.25 270 G 20 G	city iallon/Minute iallon/Minute iallon/Minute iallon/Minute iallon/Minute		nnual Volume Cap 12 A 81 A 186 A 278 A 278 A 32 A	vacity kcre Feet/Year kcre Feet/Year kcre Feet/Year kcre Feet/Year kcre Feet/Year	40,000 Gallons
30 31 32 33 34 35 36 37 38 39 40	EXISTING PHYSICAL SOURCE CAPACITY I Hillside Spring (min flow in 2015) 77 Well Kotter Well Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Hillside Spring 77 Well	nstantaneous Capa 7 G 100 G 230 G 1.25 270 G 20 G 108 G	city iallon/Minute iallon/Minute iallon/Minute iallon/Minute iallon/Minute iallon/Minute		nnual Volume Cap 12 A 81 A 186 A 278 A 278 A 32 A 174 A	vcre Feet/Year vcre Feet/Year vcre Feet/Year vcre Feet/Year vcre Feet/Year vcre Feet/Year	40,000 Gallons
30 31 32 33 34 35 36 37 38 39 40 41	EXISTING PHYSICAL SOURCE CAPACITY I Hillside Spring (min flow in 2015) 77 Well Kotter Well Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Hillside Spring	nstantaneous Capa 7 G 100 G 230 G 1.25 270 G 20 G 108 G	city iallon/Minute iallon/Minute iallon/Minute iallon/Minute iallon/Minute		nnual Volume Cap 12 A 81 A 186 A 278 A 278 A 32 A 174 A	vacity kcre Feet/Year kcre Feet/Year kcre Feet/Year kcre Feet/Year kcre Feet/Year	40,000 Gallons
30 31 32 33 34 35 36 37 38 39 40 41 42	EXISTING PHYSICAL SOURCE CAPACITY       I         Hillside Spring (min flow in 2015)       7         Y7 Well       Kotter Well         Total Peak Day Sources       Safety Factor         Total Peak Day Sources with Safety Factor       EXISTING WATER RIGHTS SOURCE CAPACITY         Hillside Spring       77 Well         Kotter Well       Kotter Well	nstantaneous Capa 7 G 100 G 230 G 337 G 1.25 270 G 200 G 108 G 444 G	city allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute		nnual Volume Cap 12 A 81 A 186 A 278 A 278 A 32 A 174 A	vcre Feet/Year vcre Feet/Year vcre Feet/Year vcre Feet/Year vcre Feet/Year vcre Feet/Year	40,000 Gallons
30 31 32 33 34 35 36 37 38 39 40 41 42 43	EXISTING PHYSICAL SOURCE CAPACITY I Hilliside Spring (min flow in 2015) 77 Well Kotter Well Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Hilliside Spring 77 Well Kotter Well Total Peak Day Sources	nstantaneous Capa 7 G 100 G 230 G 337 G 1.25 270 G 200 G 108 G 444 G	city iallon/Minute iallon/Minute iallon/Minute iallon/Minute iallon/Minute iallon/Minute		nnual Volume Cap 12 A 81 A 186 A 278 A 278 A 32 A 174 A	vcre Feet/Year vcre Feet/Year vcre Feet/Year vcre Feet/Year vcre Feet/Year vcre Feet/Year	40,000 Gallons
30 31 32 33 34 35 36 37 37 38 39 40 41 42 43	EXISTING PHYSICAL SOURCE CAPACITY I Hillside Spring (min flow in 2015) 77 Well Kotter Well Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Hillside Spring 77 Well Kotter Well Total Peak Day Sources Safety Factor	nstantaneous Capa 7 G 100 G 230 G 1.25 270 G 20 G 108 G 444 G 572 G 1.25	city iallon/Minute iallon/Minute iallon/Minute iallon/Minute iallon/Minute iallon/Minute iallon/Minute iallon/Minute		nnual Volume Cap 12 A 81 A 186 A 278 A 278 A 32 A 174 A 250 A	vcre Feet/Year vcre Feet/Year vcre Feet/Year vcre Feet/Year vcre Feet/Year vcre Feet/Year vcre Feet/Year	40,000 Gallons
30 31 32 33 34 35 36 37 38 39 40 41 42 43 44	EXISTING PHYSICAL SOURCE CAPACITY       I         Hillside Spring (min flow in 2015)       7         77 Well       Kotter Well         Total Peak Day Sources       Safety Factor         EXISTING WATER RIGHTS SOURCE CAPACITY       Hillside Spring         77 Well       Kotter Well         Total Peak Day Sources with Safety Factor       EXISTING WATER RIGHTS SOURCE CAPACITY         Hillside Spring       77 Well         Kotter Well       Total Peak Day Sources         Safety Factor       Total Peak Day Sources with Safety Factor         Total Peak Day Sources with Safety Factor       Safety Factor	nstantaneous Capa 7 G 100 G 230 G 1.25 270 G 20 G 108 G 444 G 572 G 1.25	city allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute		nnual Volume Cap 12 A 81 A 186 A 278 A 278 A 32 A 174 A 250 A	vcre Feet/Year vcre Feet/Year vcre Feet/Year vcre Feet/Year vcre Feet/Year vcre Feet/Year	40,000 Gallons
30 31 32 33 34 35 36 37 38 39 40 41 42 43 44	EXISTING PHYSICAL SOURCE CAPACITY       I         Hillside Spring (min flow in 2015)       7         Yotel       Kotter Well         Total Peak Day Sources       Safety Factor         EXISTING WATER RIGHTS SOURCE CAPACITY       Hillside Spring         77 Well       Kotter Well         Total Peak Day Sources with Safety Factor       EXISTING WATER RIGHTS SOURCE CAPACITY         Hillside Spring       77 Well         Kotter Well       Total Peak Day Sources         Safety Factor       Existing Capacity Factor         Existing Stores with Safety Factor       Existing Capacity Factor         Existing Cargo Sources with Safety Factor       Existing Capacity Factor	nstantaneous Capa 7 G 230 G 230 G 1.25 270 G 20 G 108 G 108 G 444 G 572 G 1.25 457 G	city iallon/Minute iallon/Minute iallon/Minute iallon/Minute iallon/Minute iallon/Minute iallon/Minute iallon/Minute iallon/Minute		nnual Volume Cap 12 A 81 A 186 A 278 A 278 A 32 A 174 A 250 A	vcre Feet/Year vcre Feet/Year vcre Feet/Year vcre Feet/Year vcre Feet/Year vcre Feet/Year vcre Feet/Year	40,000 Gallons
300 311 322 333 344 355 366 377 388 399 400 41 42 43 44 44 5 460 47	EXISTING PHYSICAL SOURCE CAPACITY       I         Hillside Spring (min flow in 2015)       7         YT Well       Kotter Well         Total Peak Day Sources       Safety Factor         EXISTING WATER RIGHTS SOURCE CAPACITY       Hillside Spring         77 Well       Kotter Well         Total Peak Day Sources with Safety Factor       EXISTING WATER RIGHTS SOURCE CAPACITY         Hillside Spring       77 Well         Kotter Well       Total Peak Day Sources         Safety Factor       Total Peak Day Sources         Safety Factor       Total Peak Day Sources         Safety Factor       Total Peak Day Sources         North Tank       North Tank	nstantaneous Capa 7 G 100 G 230 G 1.25 270 G 108 G 444 G 572 G 1.25 457 G 100,000 G	city allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute		nnual Volume Cap 12 A 81 A 186 A 278 A 278 A 32 A 174 A 250 A	vcre Feet/Year vcre Feet/Year vcre Feet/Year vcre Feet/Year vcre Feet/Year vcre Feet/Year vcre Feet/Year	40,000 Gallons
30 31 32 33 34 35 36 37 38 39 30 40 41 42 44 44 44 45 46 47 7 48	EXISTING PHYSICAL SOURCE CAPACITY       I         Hillside Spring (min flow in 2015)       7         YT Well       Kotter Well         Total Peak Day Sources       Safety Factor         EXISTING WATER RIGHTS SOURCE CAPACITY       Hillside Spring         77 Well       Kotter Well         Total Peak Day Sources with Safety Factor       EXISTING WATER RIGHTS SOURCE CAPACITY         Hillside Spring       77 Well         Kotter Well       Total Peak Day Sources         Safety Factor       Total Peak Day Sources with Safety Factor         EXISTING STORAGE CAPACITY       North Tank         South Tank       South Tank	nstantaneous Capa 7 G 230 G 230 G 1.25 270 G 20 G 108 G 108 G 444 G 572 G 1.25 457 G	city allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute		nnual Volume Cap 12 A 81 A 186 A 278 A 278 A 32 A 174 A 250 A	vcre Feet/Year vcre Feet/Year vcre Feet/Year vcre Feet/Year vcre Feet/Year vcre Feet/Year vcre Feet/Year	40,000 Gallons
300 311 322 333 344 355 366 377 388 399 400 411 422 433 444 455 466 477 488 499 500	EXISTING PHYSICAL SOURCE CAPACITY     I       Hillside Spring (min flow in 2015)     7       77 Well     Kotter Well       Total Peak Day Sources     Safety Factor       EXISTING WATER RIGHTS SOURCE CAPACITY       Hillside Spring       77 Well       Kotter Well       Total Peak Day Sources with Safety Factor       EXISTING WATER RIGHTS SOURCE CAPACITY       Hillside Spring       77 Well       Kotter Well       Total Peak Day Sources       Safety Factor       Total Peak Day Sources swith Safety Factor       EXISTING STORAGE CAPACITY       North Tank       South Tank       Total Storage	nstantaneous Capa 7 G 100 G 230 G 1.25 270 G 108 G 444 G 572 G 1.25 457 G 100,000 G 100,000 G 200,000 G	city iallon/Minute iallon/Minute iallon/Minute iallon/Minute iallon/Minute iallon/Minute iallon/Minute iallon/Minute iallon/Minute iallons iallons		nnual Volume Cap 12 A 81 A 186 A 278 A 278 A 32 A 174 A 250 A	vcre Feet/Year vcre Feet/Year vcre Feet/Year vcre Feet/Year vcre Feet/Year vcre Feet/Year vcre Feet/Year	40,000 Gallons
300 311 322 333 344 355 366 377 388 399 400 411 422 433 444 455 466 477 488 499 500	EXISTING PHYSICAL SOURCE CAPACITY       I         Hillside Spring (min flow in 2015)       77 Well         Kotter Well       I         Total Peak Day Sources       Safety Factor         EXISTING WATER RIGHTS SOURCE CAPACITY       Hillside Spring         77 Well       Kotter Well         Total Peak Day Sources with Safety Factor       EXISTING WATER RIGHTS SOURCE CAPACITY         Hillside Spring       77 Well         Kotter Well       Total Peak Day Sources         Safety Factor       EXISTING STORAGE CAPACITY         RUSTING STORAGE CAPACITY       North Tank         South Tank       South Tank	nstantaneous Capa 7 G 100 G 230 G 1.25 270 G 108 G 444 G 572 G 1.25 457 G 100,000 G 100,000 G 200,000 G	city iallon/Minute iallon/Minute iallon/Minute iallon/Minute iallon/Minute iallon/Minute iallon/Minute iallon/Minute iallon/Minute iallons iallons		nnual Volume Cap 12 A 81 A 186 A 278 A 278 A 32 A 174 A 250 A	vcre Feet/Year vcre Feet/Year vcre Feet/Year vcre Feet/Year vcre Feet/Year vcre Feet/Year vcre Feet/Year	40,000 Gallons
300 311 322 333 344 355 366 377 388 399 400 411 422 433 444 455 466 477 488 499 550 511	EXISTING PHYSICAL SOURCE CAPACITY       I         Hillside Spring (min flow in 2015)       7         Y0 Well       Kotter Well         Total Peak Day Sources       Safety Factor         EXISTING WATER RIGHTS SOURCE CAPACITY       Hillside Spring         Y1 Well       Kotter Well         Total Peak Day Sources with Safety Factor       EXISTING WATER RIGHTS SOURCE CAPACITY         Hillside Spring       77 Well         Kotter Well       Total Peak Day Sources         Safety Factor       Total Storage         ADDITIONAL CONNECTIONS SERVICEABLE WITH EXISTING CO	nstantaneous Capa 7 G 100 G 230 G 1.25 270 G 108 G 444 G 1.25 457 G 100,000 G 100,000 G 200,000 G 200,000 G	city iallon/Minute iallon/Minute iallon/Minute iallon/Minute iallon/Minute iallon/Minute iallon/Minute iallon/Minute iallon/Minute iallons iallons		nnual Volume Cap 12 A 81 A 186 A 278 A 278 A 32 A 174 A 250 A	vcre Feet/Year vcre Feet/Year vcre Feet/Year vcre Feet/Year vcre Feet/Year vcre Feet/Year vcre Feet/Year	40,000 Gallons
300 311 322 333 34 355 366 377 386 395 395 400 411 422 433 444 455 466 477 486 5555 55255	EXISTING PHYSICAL SOURCE CAPACITY     I       Hillside Spring (min flow in 2015)     7       77 Well     Kotter Well       Total Peak Day Sources     Safety Factor       EXISTING WATER RIGHTS SOURCE CAPACITY       Hillside Spring       77 Well       Kotter Well       Total Peak Day Sources with Safety Factor       EXISTING WATER RIGHTS SOURCE CAPACITY       Hillside Spring       77 Well       Kotter Well       Total Peak Day Sources       Safety Factor       Total Peak Day Sources swith Safety Factor       EXISTING STORAGE CAPACITY       North Tank       South Tank       Total Storage	nstantaneous Capa 7 G 100 G 230 G 1.25 270 G 20 G 108 G 444 G 572 G 1.25 457 G 100,000 G 100,000 G 200,000 G 200,000 G	city allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allons allons allons		nnual Volume Cap 12 A 81 A 186 A 278 A 278 A 32 A 174 A 250 A	vcre Feet/Year vcre Feet/Year vcre Feet/Year vcre Feet/Year vcre Feet/Year vcre Feet/Year vcre Feet/Year	40,000 Gallons
300 311 322 333 34 35 36 37 38 39 39 40 411 422 43 44 44 45 49 45 50 51 525 55 55	EXISTING PHYSICAL SOURCE CAPACITY       I         Hillside Spring (min flow in 2015)       77 Weil         Kotter Weil       Total Peak Day Sources         Safety Factor       Total Peak Day Sources with Safety Factor         EXISTING WATER RIGHTS SOURCE CAPACITY       Hillside Spring         77 Weil       Kotter Weil         Total Peak Day Sources with Safety Factor       EXISTING STORAGE CAPACITY         Hillside Spring       77 Weil         Kotter Weil       Total Peak Day Sources         Safety Factor       EXISTING STORAGE CAPACITY         North Tank       South Tank         South Tank       Total Storage         ADDITIONAL CONNECTIONS SERVICEABLE WITH EXISTING C       # based on Peak Day Physical Source Capacity	nstantaneous Capa 7 G 100 G 230 G 1.25 270 G 200 G 108 G 444 G 572 G 1.25 457 G 100,000 G 200,000 G 200,000 G <b>APACITY</b> 101 C 242 C	city iallon/Minute iallon/Minute iallon/Minute iallon/Minute iallon/Minute iallon/Minute iallon/Minute iallon/Minute iallon/Minute iallons iallons iallons iallons		nnual Volume Cap 12 A 81 A 186 A 278 A 278 A 32 A 174 A 250 A	vcre Feet/Year vcre Feet/Year vcre Feet/Year vcre Feet/Year vcre Feet/Year vcre Feet/Year vcre Feet/Year	40,000 Gallons
$\begin{array}{c} 3 \\ 3 \\ 3 \\ 3 \\ 3 \\ 3 \\ 3 \\ 3 \\ 3 \\ 3 $	EXISTING PHYSICAL SOURCE CAPACITY       I         Hillside Spring (min flow in 2015)       7         YT Well       Kotter Well         Total Peak Day Sources       Safety Factor         EXISTING WATER RIGHTS SOURCE CAPACITY       Hillside Spring         77 Well       Kotter Well         Total Peak Day Sources with Safety Factor       EXISTING WATER RIGHTS SOURCE CAPACITY         Hillside Spring       77 Well         Kotter Well       Koter Well         Total Peak Day Sources       Safety Factor         EXISTING STORAGE CAPACITY       North Tank         South Tank       South Tank         South Tank       Total Storage         ADDITIONAL CONNECTIONS SERVICEABLE WITH EXISTING C       # based on Annual Physical Source Capacity	nstantaneous Capa 7 G 100 G 230 G 1.25 270 G 20 G 108 G 444 G 1.25 457 G 100,000 G 100,000 G 200,000 G 200,000 G APACITY 101 C 242 C 247 C	city allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allons allons allons allons allons		nnual Volume Cap 12 A 81 A 186 A 278 A 278 A 32 A 174 A 250 A	vcre Feet/Year vcre Feet/Year vcre Feet/Year vcre Feet/Year vcre Feet/Year vcre Feet/Year vcre Feet/Year	40,000 Gallons
$\begin{array}{c} 300 \\ 311 \\ 322 \\ 333 \\ 344 \\ 358 \\ 377 \\ 388 \\ 399 \\ 400 \\ 411 \\ 422 \\ 433 \\ 444 \\ 455 \\ 511 \\ 522 \\ 511 \\ 522 \\ 515 \\ 535 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 545 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 555 \\ 544 \\ 555 \\ 555 \\ 544 \\ 555 \\ 555 \\ 544 \\ 555 \\ 555 \\ 544 \\ 555 \\ 555 \\ 544 \\ 555 \\ 555 \\ 544 \\ 555 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 556 \\ 556 \\ 556 \\ 556 \\ 556 \\ 556 \\ 556 \\ 556 \\ 556 \\ 556 \\ 556 \\ 556 \\ 556 \\ 556 \\ 556 \\ 556 \\ 556 \\ 556 \\ 556 \\ 556 \\ 556 \\ 556 \\ 556 \\ 556 \\ 556 \\ 556 \\ 556 \\ 556 \\ 556 \\ 556 \\ 556 \\ 556 \\ 556 \\ 556 \\ 556 \\ 556 \\ 556 \\ 556 \\ 556 \\ 556 \\ 556 \\ 556 \\ 556 \\ 556 \\ 556 \\ 556 \\ 556 \\ 556 \\ 556 \\ 556 \\ 556 \\ 556 \\ 556 \\ 556 \\ 556 \\ 556 \\ 556 \\ 556 \\ 556 \\ 556 \\ 556 \\ 556 \\ 556 \\ 556 \\ 556 \\ 556 \\ 556 \\ 556 \\ 556 \\ 556 \\ 556 \\ 556 \\ 556 \\ 556 \\ 556 \\ 556 \\$	EXISTING PHYSICAL SOURCE CAPACITY       I         Hillside Spring (min flow in 2015)       77 Well         Kotter Well       Total Peak Day Sources         Safety Factor       Total Peak Day Sources with Safety Factor         EXISTING WATER RIGHTS SOURCE CAPACITY       Hillside Spring         77 Well       Kotter Well         Total Peak Day Sources swith Safety Factor       EXISTING WATER RIGHTS SOURCE CAPACITY         Hillside Spring       77 Well         Kotter Well       Total Peak Day Sources safety Factor         EXISTING STORAGE CAPACITY       North Tank         South Tank       Total Storage         ADDITIONAL CONNECTIONS SERVICEABLE WITH EXISTING C       # based on Peak Day Physical Source Capacity         # based on Peak Day Water Rights Capacity       # based on Peak Day Water Rights Capacity	nstantaneous Capa 7 G 100 G 230 G 1.25 270 G 20 G 108 G 444 G 1.25 457 G 100,000 G 100,000 G 200,000 G 200,000 G APACITY 101 C 242 C 247 C	city allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allons allons allons allons onnections onnections onnections		nnual Volume Cap 12 A 81 A 186 A 278 A 278 A 32 A 174 A 250 A	vcre Feet/Year vcre Feet/Year vcre Feet/Year vcre Feet/Year vcre Feet/Year vcre Feet/Year vcre Feet/Year	40,000 Gallons

Lines 3 - 10: Number of acres of landscaped area was calibrated to match 2015 reported total usage. Lines 5 - 18: Water Demands calculated based on Utah Division of Drinking Water Standards assuming Zone 4 for outside watering requirements. Lines 25-18: Water Demands calculated based on Utah Division of Drinking Water Standards assuming Zone 4 for outside watering requirements. Lines 24-45: Si When data was not available for either the annual limit (ac-flyr) or the maximum flow rate (cfs or gpm), the other value was obtained by a straight units conversion. Lines 24-41: Existing source and storage data has been gathered from the following sources of information: interviews with the water agency, sanitary surveys, water rights information and Division of Drinking Water records.

Tech	nical data for Mantua						
1	POPULATION AND IRRIGATED ACREAGE DATA:	2015	2020	2030	2040	2050	2060
	# Units in Service Area	246	250	293	344	448	582 CONNECTIONS
	# Acres of Outside Irrigation per Unit	0.24	0.24	0.24	0.24	0.24	0.24 ACRES/CONN.
4	Total # Acres of Outside Irrigation for the System	59.08	60.01	70.43	82.66	107.46	139.70 ACRES
5	SOURCE REQUIREMENTS						
6		110	112	132	154	201	261 ACRE FEET
7	Annual Outdoor Usage = 1.87 Acre Feet/Irrigated Acre	110	112	132	155	201	261 ACRE FEET
8	Total Annual Usage	221	224	263	309	402	522 ACRE FEET
	Peak Day Indoor Demand = 800 Gal./Day/Connection	196,924	200,047	234,781	275,546	358,210	465,673 GAL/DAY
10	Peak Day Outdoor Demand = 3.96 Gpm/Irrigated Acre	336,882	342,224	401,644	471,382	612,797	796,635 GAL/DAY
11	Total Peak Day Demand	533,805	542,271	636,425	746,928	971,006	1,262,308 GAL/DAY
12	(Gallons per Minute)	370.70	377	442	519	674	877 GPM
13	STORAGE REQUIREMENTS						
14	Indoor Requirement = 400 Gal/Connection	98,462	100,023	117,390	137,773	179,105	232,836 GALLONS
15	Outside Irrigation Requirement = 2,848 Gal/Irrigated Acre	168,252	170,920	200,597	235,426	306,054	397,871 GALLONS
16	Fire Storage (1,000 gpm for 1 hour)	60,000	60,000	60,000	60,000	60,000	60,000 GALLONS
	Emergency Storage, 10%	26,671	27,094	31,799	37,320	48,516	63,071 GALLONS
18		350,000	360,000	410,000	470,000	590,000	750,000 GALLONS
19	DISTRIBUTION SYSTEM REQUIREMENTS						
	Peak Hour Indoor Demand = 10.8(N^.64); N = # Connections	366	370	410	454	537	635 GPM
21	Peak Hour Outside Demand = 7.92 Gpm/Irrigated Acre	468	475	558	655	851	1.106 GPM
22	Total Peak Hour Demand	834	845	968	1,109	1,388	1,742 GPM
	ADDITIONAL SOURCE CAPACITY NEEDED	0.528361158	0.536740275	0.629934489	0.739310014	0.961103018	1.249433923
	Physical Source Capacity on Peak Day Basis	0.020001100	0.000740270	0.020004400	0	0.001100010	175 Gallon/Minute
	Physical Source Capacity on Annual Volume Basis	0 0	õ	Ő	õ	õ	0 AcreFeet/Year
	Water Rights Source Capacity on Peak Day Basis	ő	õ	ŏ	Õ	66	268 Gallon/Minute
	Water Rights Source Capacity on Annual Volume Basis	Ő	0 0	ő	õ	0	0 AcreFeet/Year
28	ADDITIONAL STORAGE CAPACITY NEEDEL			Ŭ			0 / 10101 000 1 041
29		0	0	0	0	0	100.000 Gallons
	Storage Capacity Needed		-	-			100,000 Gallons
30	Storage Capacity Needed EXISTING PHYSICAL SOURCE CAPACITY Ir	stantaneous Capa	city	-	nnual Volume Cap	acity	100,000 Gallons
30 31	Storage Capacity Needed EXISTING PHYSICAL SOURCE CAPACITY Ir Springs Low Flow in July 2006	nstantaneous Capa 27 G	city allon/Minute	-	nnual Volume Cap 59 A	acity cre Feet/Year	100,000 Gallons
30 31 32	Storage Capacity Needed EXISTING PHYSICAL SOURCE CAPACITY Ir Springs Low Flow in July 2006 Well #1	nstantaneous Capa 27 G 325 G	city allon/Minute allon/Minute	-	nnual Volume Cap 59 A 262 A	acity cre Feet/Year cre Feet/Year	100,000 Gallons
30 31 32	Storage Capacity Needed EXISTING PHYSICAL SOURCE CAPACITY Ir Springs Low Flow in July 2006	nstantaneous Capa 27 G 325 G	city allon/Minute	-	nnual Volume Cap 59 A 262 A	acity cre Feet/Year	100,000 Gallons
30 31 32 33	Storage Capacity Needed EXISTING PHYSICAL SOURCE CAPACITY In Springs Low Flow in July 2006 Well #1 Well #2	nstantaneous Capa 27 G 325 G 525 G	city allon/Minute allon/Minute allon/Minute	-	nnual Volume Cap 59 A 262 A	acity cre Feet/Year cre Feet/Year	100,000 Gallons
30 31 32 33 34	Storage Capacity Needed EXISTING PHYSICAL SOURCE CAPACITY Ir Springs Low Flow in July 2006 Well #1 Well #2 Total Peak Day Sources	nstantaneous Capa 27 G 325 G 525 G	city allon/Minute allon/Minute	-	nnual Volume Cap 59 A 262 A	acity cre Feet/Year cre Feet/Year	100,000 Gallons
30 31 32 33 34 34	Storage Capacity Needed EXISTING PHYSICAL SOURCE CAPACITY Ir Springs Low Flow in July 2006 Well #1 Well #2 Total Peak Day Sources Safety Factor	nstantaneous Capa 27 G 325 G 525 G 877 G 1.25	city allon/Minute allon/Minute allon/Minute allon/Minute	-	nnual Volume Cap 59 A 262 A 423 A	acity cre Feet/Year cre Feet/Year	100,000 Gallons
30 31 32 33 34 35 36	Storage Capacity Needed         EXISTING PHYSICAL SOURCE CAPACITY       In         Springs Low Flow in July 2006         Well #1         Well #2         Total Peak Day Sources         Safety Factor         Total Peak Day Sources with Safety Factor	nstantaneous Capa 27 G 325 G 525 G 877 G 1.25	city allon/Minute allon/Minute allon/Minute	-	nnual Volume Cap 59 A 262 A 423 A	acity cre Feet/Year cre Feet/Year cre Feet/Year	100,000 Gallons
30 31 32 33 34 35 36 37	Storage Capacity Needed EXISTING PHYSICAL SOURCE CAPACITY Ir Springs Low Flow in July 2006 Well #1 Well #2 Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY	nstantaneous Capa 27 G 325 G 525 G 877 G 1.25 702 G	city allon/Minute allon/Minute allon/Minute allon/Minute	-	nnual Volume Cap 59 A 262 A 423 A 744 A	acity cre Feet/Year cre Feet/Year cre Feet/Year	100,000 Gallons
30 31 32 33 34 35 36 37 38	Storage Capacity Needed         EXISTING PHYSICAL SOURCE CAPACITY       In         Springs Low Flow in July 2006         Well #1         Well #2         Total Peak Day Sources         Safety Factor         Total Peak Day Sources with Safety Factor	Istantaneous Capa 27 G 325 G 525 G 877 G 1.25 702 G 761 G	city allon/Minute allon/Minute allon/Minute allon/Minute	-	nnual Volume Cap 59 A 262 A 423 A 744 A 1,227 A	acity cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year	100,000 Gallons
30 31 32 33 34 35 36 37 38 39	Storage Capacity Needed EXISTING PHYSICAL SOURCE CAPACITY Ir Springs Low Flow in July 2006 Well #1 Well #2 Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Springs and 2 Wells all combined in 1 WR	istantaneous Capa 27 G 325 G 525 G 877 G 1.25 702 G 761 G G	city allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute	-	nnual Volume Cap 59 A 262 A 423 A 744 A 1,227 A A	acity cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year	100,000 Gallons
30 31 32 33 34 35 36 37 38 39	Storage Capacity Needed         EXISTING PHYSICAL SOURCE CAPACITY       In         Springs Low Flow in July 2006         Well #1         Well #2         Total Peak Day Sources         Safety Factor         Total Peak Day Sources with Safety Factor         EXISTING WATER RIGHTS SOURCE CAPACITY         Springs and 2 Wells all combined in 1 WR         Well #1	istantaneous Capa 27 G 325 G 525 G 877 G 1.25 702 G 761 G G	city allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute	-	nnual Volume Cap 59 A 262 A 423 A 744 A 1,227 A A	acity cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year	100,000 Gallons
30 31 32 33 34 35 36 37 38 39 40	Storage Capacity Needed         EXISTING PHYSICAL SOURCE CAPACITY       In         Springs Low Flow in July 2006         Well #1         Well #2         Total Peak Day Sources         Safety Factor         Total Peak Day Sources with Safety Factor         EXISTING WATER RIGHTS SOURCE CAPACITY         Springs and 2 Wells all combined in 1 WR         Well #1	istantaneous Capa 27 G 325 G 525 G 877 G 1.25 702 G 761 G G G	city allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute	-	nnual Volume Cap 59 A 262 A 423 A 744 A 1,227 A A	acity cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year	100,000 Gallons
30 31 32 33 34 35 36 37 38 39 40	Storage Capacity Needed         EXISTING PHYSICAL SOURCE CAPACITY       In         Springs Low Flow in July 2006         Well #1         Well #2         Total Peak Day Sources with Safety Factor         EXISTING WATER RIGHTS SOURCE CAPACITY         Springs and 2 Wells all combined in 1 WR         Well #2         Total Peak Day Sources with Safety Factor         EXISTING WATER RIGHTS SOURCE CAPACITY         Springs and 2 Wells all combined in 1 WR         Well #2         Total Peak Day Sources	istantaneous Capa 27 G 325 G 525 G 877 G 1.25 702 G 761 G G G	city allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute	-	nnual Volume Cap 59 A 262 A 423 A 744 A 1,227 A A	acity cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year	100,000 Gallons
30 31 32 33 34 35 36 37 38 39 40 40 41 42	Storage Capacity Needed         EXISTING PHYSICAL SOURCE CAPACITY       In         Springs Low Flow in July 2006         Well #1         Well #2         Total Peak Day Sources         Safety Factor         Total Peak Day Sources with Safety Factor         EXISTING WATER RIGHTS SOURCE CAPACITY         Springs and 2 Wells all combined in 1 WR         Well #2         Total Peak Day Sources         Safety Factor         Total Peak Day Sources with Safety Factor	istantaneous Capa 27 G 325 G 525 G 1.25 702 G 761 G G 761 G 761 G	city allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute	-	nnual Volume Cap 59 A 262 A 423 A 744 A 1,227 A A A	acity cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year	100,000 Gallons
30 31 32 33 34 35 36 37 38 39 40 40 41 42	Storage Capacity Needed         EXISTING PHYSICAL SOURCE CAPACITY       In         Springs Low Flow in July 2006         Well #1         Well #2         Total Peak Day Sources         Safety Factor         Total Peak Day Sources with Safety Factor         EXISTING WATER RIGHTS SOURCE CAPACITY         Springs and 2 Wells all combined in 1 WR         Well #1         Well #1         Total Peak Day Sources         Safety Factor         Total Peak Day Sources with Safety Factor         Total Peak Day Sources with Safety Factor	istantaneous Capa 27 G 325 G 525 G 1.25 702 G 761 G G 761 G 761 G	city allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute	-	nnual Volume Cap 59 A 262 A 423 A 744 A 1,227 A A A	acity cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year	100,000 Gallons
30 31 32 33 34 35 36 37 38 39 40 41 42 43 44	Storage Capacity Needed         EXISTING PHYSICAL SOURCE CAPACITY       In         Springs Low Flow in July 2006         Well #1         Well #2         Total Peak Day Sources         Safety Factor         Total Peak Day Sources with Safety Factor         EXISTING WATER RIGHTS SOURCE CAPACITY         Springs and 2 Wells all combined in 1 WR         Well #2         Total Peak Day Sources         Safety Factor         Total Peak Day Sources with Safety Factor	istantaneous Capa 27 G 325 G 525 G 1.25 702 G 761 G G 761 G 761 G	city allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute	-	nnual Volume Cap 59 A 262 A 423 A 744 A 1,227 A A A	acity cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year	100,000 Gallons
30 31 32 33 34 35 36 37 38 39 40 41 42 43 44	Storage Capacity Needed         EXISTING PHYSICAL SOURCE CAPACITY       In         Springs Low Flow in July 2006         Well #1         Well #2         Total Peak Day Sources         Safety Factor         Total Peak Day Sources with Safety Factor         EXISTING WATER RIGHTS SOURCE CAPACITY         Springs and 2 Wells all combined in 1 WR         Well #2         Total Peak Day Sources         Safety Factor         Total Peak Day Sources         Safety Factor         Total Peak Day Sources with Safety Factor         EXISTING Stores         Safety Factor         Total Peak Day Sources with Safety Factor         EXISTING STORAGE CAPACITY         Total Peak Day Sources         Safety Factor         Total Peak Day Sources         Safety Factor         Total Peak Day Sources with Safety Factor	istantaneous Capa 27 G 325 G 525 G 1.25 702 G 761 G G 761 G 1.25 609 G	city allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute	-	nnual Volume Cap 59 A 262 A 423 A 744 A 1,227 A A A	acity cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year	100,000 Gallons
30 31 32 33 33 33 35 36 37 37 38 39 30 40 41 42 43 44 45 44 45 44 47	Storage Capacity Needed         EXISTING PHYSICAL SOURCE CAPACITY       In         Springs Low Flow in July 2006         Well #1         Well #2         Total Peak Day Sources         Safety Factor         Total Peak Day Sources with Safety Factor         EXISTING WATER RIGHTS SOURCE CAPACITY         Springs and 2 Wells all combined in 1 WR         Well #2         Total Peak Day Sources         Safety Factor         Total Peak Day Sources         Safety Factor         Total Peak Day Sources with Safety Factor         EXISTING Stores         Safety Factor         Total Peak Day Sources with Safety Factor         EXISTING STORAGE CAPACITY         Total Peak Day Sources         Safety Factor         Total Peak Day Sources         Safety Factor         Total Peak Day Sources with Safety Factor	istantaneous Capa 27 G 325 G 525 G 1.25 702 G 761 G G 761 G 1.25 609 G 150,000 G	city allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute	-	nnual Volume Cap 59 A 262 A 423 A 744 A 1,227 A A A	acity cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year	100,000 Gallons
300 31 32 33 33 34 35 36 37 38 39 40 40 41 42 43 44 45 46	Storage Capacity Needed         EXISTING PHYSICAL SOURCE CAPACITY       In         Springs Low Flow in July 2006         Well #1         Well #2         Total Peak Day Sources         Safety Factor         Total Peak Day Sources with Safety Factor         EXISTING WATER RIGHTS SOURCE CAPACITY         Springs and 2 Wells all combined in 1 WR         Well #2         Total Peak Day Sources         Safety Factor         Total Peak Day Sources         Safety Factor         Total Peak Day Sources with Safety Factor         EXISTING Stores         Safety Factor         Total Peak Day Sources with Safety Factor         EXISTING STORAGE CAPACITY         Total Peak Day Sources         Safety Factor         Total Peak Day Sources         Safety Factor         Total Peak Day Sources with Safety Factor	istantaneous Capa 27 G 325 G 525 G 1.25 702 G 761 G G 761 G 1.25 609 G 150,000 G	city allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allons allons	-	nnual Volume Cap 59 A 262 A 423 A 744 A 1,227 A A A	acity cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year	100,000 Gallons
30 31 32 33 33 34 35 36 37 38 39 40 40 41 42 43 44 45 46 47	Storage Capacity Needed         EXISTING PHYSICAL SOURCE CAPACITY       In         Springs Low Flow in July 2006         Well #1         Well #2         Total Peak Day Sources         Safety Factor         Total Peak Day Sources with Safety Factor         EXISTING WATER RIGHTS SOURCE CAPACITY         Springs and 2 Wells all combined in 1 WR         Well #1         Well #2         Total Peak Day Sources         Safety Factor         Total Peak Day Sources         Safety Factor         Total Peak Day Sources with Safety Factor         EXISTING STORAGE CAPACITY         Tank 1         Tank 2         Total Storage	istantaneous Capa 27 G 325 G 525 G 1.25 702 G 761 G 761 G 1.25 609 G 150,000 G 500,000 G	city allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allons allons	-	nnual Volume Cap 59 A 262 A 423 A 744 A 1,227 A A A	acity cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year	100,000 Gallons
300 311 322 333 367 376 377 385 399 400 411 422 433 444 456 477 488 499	Storage Capacity Needed EXISTING PHYSICAL SOURCE CAPACITY Ir Springs Low Flow in July 2006 Well #1 Well #2 Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Springs and 2 Wells all combined in 1 WR Well #1 Well #2 Total Peak Day Sources Safety Factor Total Peak Day Sources Safety Factor EXISTING STORAGE CAPACITY Tank 1 Tank 2 Total Storage ADDITIONAL CONNECTIONS SERVICEABLE WITH EXISTING CO	istantaneous Capa 27 G 325 G 525 G 877 G 1.25 702 G 761 G 1.25 609 G 150,000 G 500,000 G 650,000 G APACITY	city allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allons allons	-	nnual Volume Cap 59 A 262 A 423 A 744 A 1,227 A A A	acity cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year	100,000 Gallons
300 311 322 333 344 355 36 377 38 395 377 38 395 377 38 395 377 38 395 395 400 41 424 44 44 45 550	Storage Capacity Needed         EXISTING PHYSICAL SOURCE CAPACITY       In         Springs Low Flow in July 2006         Well #1         Well #2         Total Peak Day Sources         Safety Factor         EXISTING WATER RIGHTS SOURCE CAPACITY         Springs and 2 Wells all combined in 1 WR         Well #2         Total Peak Day Sources         Safety Factor         EXISTING WATER RIGHTS SOURCE CAPACITY         Springs and 2 Wells all combined in 1 WR         Well #2         Total Peak Day Sources         Safety Factor         Total Peak Day Sources         Safety Factor         Total Peak Day Sources with Safety Factor         EXISTING STORAGE CAPACITY         Tank 1         Tank 2         Total Storage         ADDITIONAL CONNECTIONS SERVICEABLE WITH EXISTING C.         # based on Peak Day Physical Source Capacity	Istantaneous Capa 27 G 325 G 525 G 877 G 1.25 702 G 761 G 1.25 609 G 150,000 G 500,000 G 650,000 G 4PACITY 220 C	city allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allons allons allons	-	nnual Volume Cap 59 A 262 A 423 A 744 A 1,227 A A A	acity cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year	100,000 Gallons
300 313 323 333 304 353 366 377 388 399 400 411 422 433 444 455 466 477 488 455 50551	Storage Capacity Needed EXISTING PHYSICAL SOURCE CAPACITY Ir Springs Low Flow in July 2006 Well #1 Well #2 Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Springs and 2 Wells all combined in 1 WR Well #1 Well #2 Total Peak Day Sources Safety Factor Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING STORAGE CAPACITY Tank 1 Tank 2 Total Storage ADDITIONAL CONNECTIONS SERVICE Capacity # based on Annual Physical Source Capacity	Instantaneous Capa 27 G 325 G 525 G 1.25 702 G 761 G 761 G 761 G 1.25 609 G 150,000 G 500,000 G 650,000 G 4PACITY 220 C 584 C	city allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allons allons allons allons	-	nnual Volume Cap 59 A 262 A 423 A 744 A 1,227 A A A	acity cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year	100,000 Gallons
300 313 323 333 300 300 300 300 300 300 300 30	Storage Capacity Needed EXISTING PHYSICAL SOURCE CAPACITY Ir Springs Low Flow in July 2006 Well #1 Well #2 Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Springs and 2 Wells all combined in 1 WR Well #1 Well #2 Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING STORAGE CAPACITY Tank 1 Tank 2 Total Storage ADDITIONAL CONNECTIONS SERVICEABLE WITH EXISTING C, # based on Peak Day Water Rights Capacity # based on Peak Day Water Rights Capacity	istantaneous Capa 27 G 325 G 525 G 877 G 1.25 702 G 761 G 1.25 609 G 150,000 G 500,000 G 650,000 G 650,000 G 4PACITY 220 C 584 C 158 C	city allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allons allons allons allons onnections onnections	-	nnual Volume Cap 59 A 262 A 423 A 744 A 1,227 A A A	acity cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year	100,000 Gallons
30 31 32 33 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 45 55 55 55	Storage Capacity Needed EXISTING PHYSICAL SOURCE CAPACITY Ir Springs Low Flow in July 2006 Well #1 Well #2 Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Springs and 2 Wells all combined in 1 WR Well #1 Well #2 Total Peak Day Sources Safety Factor Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING STORAGE CAPACITY Tank 1 Tank 2 Total Storage ADDITIONAL CONNECTIONS SERVICE Capacity # based on Annual Physical Source Capacity	Instantaneous Capa 27 G 325 G 525 G 1.25 702 G 761 G 1.25 702 G 761 G 1.25 609 G 150,000 G 500,000 G 650,000 G 650,000 G 4PACITY 220 C 584 C 158 C 1.22 C	city allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allons allons allons allons allons	-	nnual Volume Cap 59 A 262 A 423 A 744 A 1,227 A A A	acity cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year	100,000 Gallons

Notes:

 Lines.

 Lines 5:
 Based on average water use in 2014-2015 with average lawn size calculated to match total water use per residential connection.

 Lines 5-18:
 Water Demands calculated based on Utah Division of Drinking Water Standards assuming Zone 4 for outside watering requirements.

 Lines 24-35:
 When data was not available for either the annual limit (ac-ft/yr) or the maximum flow rate (cfs or gpm), the other value was obtained by a straight units conversion.

	nical data for Marble Hills Subdivision						
	POPULATION AND IRRIGATED ACREAGE DATA:	2015	2020	2030	2040	2050	2060
	# Units in Service Area	75	80	94	111	130	169 CONNECTIONS
3	# Acres of Outside Irrigation per Unit	0.22	0.22	0.22	0.22	0.22	0.22 ACRES/CONN.
4		16.27	17.43	20.46	24.01	28.18	36.64 ACRES
5	SOURCE REQUIREMENTS						
6		34	36	42	50	58	76 ACRE FEET
7	Annual Outdoor Usage = 1.87 Acre Feet/Irrigated Acre	30	33	38	45	53	69 ACRE FEET
6	Total Annual Usage	64	69	81	95	111	144 ACRE FEET
0	Peak Day Indoor Demand = 800 Gal./Day/Connection	60.000	64.301	75.465	88,568	103.947	135.130 GAL/DAY
						160,708	
	Peak Day Outdoor Demand = 3.96 Gpm/Irrigated Acre	92,764	99,413	116,674	136,932		208,920 GAL/DAY
11	Total Peak Day Demand	152,764	163,714	192,140	225,501	264,654	344,051 GAL/DAY
12		106	114	133	157	184	239 GPM
	STORAGE REQUIREMENTS						
	Indoor Requirement = 400 Gal/Connection	30,000	32,150	37,733	44,284	51,973	67,565 GALLONS
	Outside Irrigation Requirement = 2,848 Gal/Irrigated Acre	46,330	49,651	58,272	68,389	80,264	104,343 GALLONS
	Fire Storage (500 gpm for 1/2 hour)	15,000	15,000	15,000	15,000	15,000	15,000 GALLONS
	Emergency Storage, 10%	7,633	8,180	9,600	11,267	13,224	17,191 GALLONS
18	Total Storage (Rounded)	100,000	100,000	120,000	140,000	160,000	200,000 GALLONS
19	DISTRIBUTION SYSTEM REQUIREMENTS						
	Peak Hour Indoor Demand = 10.8(N^.64); N = # Connections	171	179	198	220	243	288 GPM
	Peak Hour Outside Demand = 7.92 Gpm/Irrigated Acre	129	138	162	190	223	290 GPM
22		300	317	360	410	467	578 GPM
	ADDITIONAL SOURCE CAPACITY NEEDED	1.473416204	1.579030651	1.853197743	2.174968467	2.552608242	3.318390714
	Physical Source Capacity on Peak Day Basis	34	42	61	2.114000401	112	167 Gallon/Minute
	Physical Source Capacity on Annual Volume Basis	0		8	22	38	72 AcreFeet/Year
	Water Rights Source Capacity on Peak Day Basis	0	0	0	0	0	0 Gallon/Minute
	Water Rights Source Capacity on Annual Volume Basis	0	0	0	0	0	0 AcreFeet/Year
	ADDITIONAL STORAGE CAPACITY NEEDED	0	0	0	0	0	0 Actereet/ Teal
	Storage Capacity Needed	0	0	0	0	0	0 Gallons
		Instantaneous Capa			nnual Volume Cap		o canono
	Well		allon/Minute			cre Feet/Year	
	New Undrilled Well		allon/Minute			cre Feet/Year	
33		00	anon/minute		0 4	cie i ceti i cai	
34							
		90.0	allon/Minute				
	Total Peak Day Sources		allon/Minute				
	Total Peak Day Sources Safety Factor	1.25			72 \	cre Feet/Vear	
36	Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor	1.25	allon/Minute allon/Minute		73 A	cre Feet/Year	
36 37	Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY	1.25 72 G	allon/Minute				
36 37 38	Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Well	1.25 72 G 251 G	allon/Minute		270 A	cre Feet/Year	
36 37 38 39	Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY	1.25 72 G 251 G	allon/Minute		270 A		
36 37 38 39 40	Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Well New Undrilled Well	1.25 72 G 251 G 646 G	allon/Minute allon/Minute allon/Minute		270 A	cre Feet/Year	
36 37 38 39 40 41	Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Well New Undrilled Well Total Peak Day Sources	1.25 72 G 251 G 646 G 898 G	allon/Minute		270 A	cre Feet/Year	
36 37 38 39 40 41 42	Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Well New Undrilled Well Total Peak Day Sources Safety Factor	1.25 72 G 251 G 646 G 898 G 1.25	iallon/Minute iallon/Minute iallon/Minute		270 A 254 A	cre Feet/Year cre Feet/Year	
36 37 38 39 40 41 42 43	Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Well New Undrilled Well Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor	1.25 72 G 251 G 646 G 898 G 1.25	allon/Minute allon/Minute allon/Minute		270 A 254 A	cre Feet/Year	
36 37 38 39 40 41 42 43 44	Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Well New Undrilled Well Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING STORAGE CAPACITY	1.25 72 C 251 C 646 C 898 C 1.25 718 C	iallon/Minute iallon/Minute iallon/Minute iallon/Minute iallon/Minute		270 A 254 A	cre Feet/Year cre Feet/Year	
36 37 38 39 40 41 42 43 44 45	Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Well New Undrilled Well Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING STORAGE CAPACITY Tank 1	1.25 72 0 251 0 646 0 1.25 718 0 150,000 0	iallon/Minute iallon/Minute iallon/Minute iallon/Minute iallon/Minute		270 A 254 A	cre Feet/Year cre Feet/Year	
36 37 38 39 40 41 42 43 44 45 46	Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Well New Undrilled Well Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING STORAGE CAPACITY Tank 1 Tank 1 Tank 2	1.25 72 0 251 0 646 0 1.25 718 0 150,000 0 150,000 0	iallon/Minute iallon/Minute iallon/Minute iallon/Minute iallons iallons		270 A 254 A	cre Feet/Year cre Feet/Year	
36 37 38 39 40 41 42 43 44 45 46 47	Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Well New Undrilled Well Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING STORAGE CAPACITY Tank 1 Tank 2 Tank 3	1.25 72 0 251 0 646 0 1.25 718 0 150,000 0	iallon/Minute iallon/Minute iallon/Minute iallon/Minute iallons iallons		270 A 254 A	cre Feet/Year cre Feet/Year	
36 37 38 39 40 41 42 43 44 45 46 47 48	Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Well New Undrilled Well Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING STORAGE CAPACITY Tank 1 Tank 1 Tank 2 Tank 3	1.25 72 C 251 C 646 C 1.25 718 C 150,000 C 150,000 C	allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allons allons allons		270 A 254 A	cre Feet/Year cre Feet/Year	
36 37 38 39 40 41 42 43 44 45 46 47 48 49	Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Well New Undrilled Well Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING STORAGE CAPACITY Tank 1 Tank 2 Tank 3 Total Storage	1.25 72 0 251 0 646 0 1.25 718 0 150,000 0 150,000 0 150,000 0 450,000 0	allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allons allons allons		270 A 254 A	cre Feet/Year cre Feet/Year	
36 37 38 39 40 41 42 43 44 45 46 47 48 49 50	Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Well New Undrilled Well Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING STORAGE CAPACITY Tank 1 Tank 2 Tank 3 Total Storage ADDITIONAL CONNECTIONS SERVICEABLE WITH EXISTING 6	1.25 72 0 251 0 646 0 1.25 718 0 150,000 0 150,000 0 150,000 0 250000 0 250000 0	iallon/Minute iallon/Minute iallon/Minute iallon/Minute iallons iallons iallons iallons		270 A 254 A	cre Feet/Year cre Feet/Year	
36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51	Total Peak Day Sources Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Well New Undrilled Well Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING STORAGE CAPACITY Tank 1 Tank 2 Tank 3 Total Storage ADDITIONAL CONNECTIONS SERVICEABLE WITH EXISTING 6 # based on Peak Day Physical Source Capacity	1.25 72 0 251 0 646 0 1.25 718 0 150,000 0 150,000 0 450,000 0 450,000 0 -24 0	allon/Minute allon/Minute allon/Minute allon/Minute allons allons allons allons allons onnections		270 A 254 A	cre Feet/Year cre Feet/Year	
36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52	Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Well New Undrilled Well Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING STORAGE CAPACITY Tank 1 Tank 2 Tank 2 Tank 3 Total Storage ADDITIONAL CONNECTIONS SERVICEABLE WITH EXISTING 0 # based on Peak Day Physical Source Capacity	1.25 72 0 251 0 646 0 1.25 718 0 150,000 0 150,000 0 450,000 0 <b>450,000 0</b> <b>CAPACITY</b> -24 0 10 0	iallon/Minute iallon/Minute iallon/Minute iallon/Minute iallons iallons iallons iallons onnections onnections		270 A 254 A	cre Feet/Year cre Feet/Year	
36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53	Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Well New Undrilled Well Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING STORAGE CAPACITY Tank 1 Tank 2 Tank 3 Total Storage ADDITIONAL CONNECTIONS SERVICEABLE WITH EXISTING 6 # based on Peak Day Physical Source Capacity # based on Peak Day Water Rights Capacity	1.25 72 0 251 0 646 0 1.25 718 0 150,000 0 150,000 0 150,000 0 450,000 0 <b>CAPACITY</b> -24 0 10 0 433 0	iallon/Minute iallon/Minute iallon/Minute iallon/Minute iallons iallons iallons iallons onnections onnections onnections		270 A 254 A	cre Feet/Year cre Feet/Year	
36 37 38 39 40 41 42 43 44 45 46 47 47 48 50 51 52 53 54	Total Peak Day Sources Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Well New Undrilled Well Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING STORAGE CAPACITY Tank 1 Tank 2 Tank 3 Total Storage ADDITIONAL CONNECTIONS SERVICEABLE WITH EXISTING 6 # based on Peak Day Physical Source Capacity # based on Annual Water Rights Capacity	1.25 72 0 251 0 646 0 1.25 718 0 150,000 0 150,000 0 450,000 0 6 26PACITY -24 0 10 0 433 0 538 0	iallon/Minute iallon/Minute iallon/Minute iallon/Minute iallon/Minute iallons iallons iallons onnections onnections onnections onnections		270 A 254 A	cre Feet/Year cre Feet/Year	
366 377 388 399 400 411 422 433 444 455 466 477 488 499 500 511 522 533 54	Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Well New Undrilled Well Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING STORAGE CAPACITY Tank 1 Tank 2 Tank 2 Tank 3 Total Storage ADDITIONAL CONNECTIONS SERVICEABLE WITH EXISTING 0 # based on Peak Day Physical Source Capacity # based on Peak Day Water Rights Capacity # based on Annual Water Rights Capacity # based on Storage Capacity	1.25 72 0 251 0 646 0 1.25 718 0 150,000 0 150,000 0 450,000 0 6 26PACITY -24 0 10 0 433 0 538 0	iallon/Minute iallon/Minute iallon/Minute iallon/Minute iallons iallons iallons iallons onnections onnections onnections		270 A 254 A	cre Feet/Year cre Feet/Year	

 Notes:
 200 Connections

 Line 2:
 Buildout is estimated to be about 186 - 1/2 acre lots.

 Line 3:
 Based on average water use in 2014-2015 with average lawn size calculated to match total water use per residential connection.

 Lines 5-18:
 Water Demands calculated based on Utah Division of Drinking Water Standards assuming Zone 4 for outside watering requirements.

 Lines 24-35:
 When data was not available for either the annual limit (ac-ft/yr) or the maximum flow rate (cfs or gpm), the other value was obtained by a straight units conversion.

Tech	nical data for Park Valley Elementary School						
	POPULATION AND IRRIGATED ACREAGE DATA:	2015	2020	2030	2040	2050	2060
2	# Persons in School Building when in session	60	60	60	60	60	60 PERSONS
3	# Acres of Outside Irrigation	0.33	0.33	0.33	0.33	0.33	0.33 ACRES
	Total # Acres of Outside Irrigation	0.33	0.33	0.33	0.33	0.33	0.33 ACRES
	SOURCE REQUIREMENTS						
	Annual Indoor Usage for School = 25 Gal/Day/Per. x 180 days	0.83	0.83	0.83	0.83	0.83	0.83 ACRE FEET
	Annual Indoor Usage for UDOT Shed = 0.45 af	0.45	0.45	0.45	0.45	0.45	0.45 ACRE FEET
	Annual Outdoor Usage = 1.87 Acre Feet/Irrigated Acre	0.62	0.62	0.62	0.62	0.62	0.62 ACRE FEET
9	Total Annual Usage	1.45	1.45	1.45	1.45	1.45	1.45 ACRE FEET
10	Peak Day Indoor Demand = 25 Gal./Day/Person	1,500	1,500	1,500	1,500	1,500	1,500 GAL/DAY
	Peak Day Outdoor Demand = 3.96 Gpm/Irrigated Acre	1,882	1,882	1,882	1.882	1.882	1,882 GAL/DAY
12	r oak bay oataoor bonnana " 0.00 opniningatoa rioro	1,002	1,002	1,002	1,002	1,002	1,002 0/12/2/11
13	Total Peak Day Demand	3,382	3,382	3,382	3,382	3,382	3,382 GAL/DAY
14	(Gallons per Minute)	2.3	2.3	2.3	2.3	2.3	2.3 GPM
	STORAGE REQUIREMENTS	2.0	2.0	2.0	2.0	2.0	210 01 11
	School Indoor Requirement = Equalization 1/2 day Volume	3.000	3.000	3.000	3.000	3.000	3.000 GALLONS
	UDOT Shed Indoor Reg. = Equalization 1/2 day Volume	3,000 940	940	3,000 940	940	940	940 GALLONS
	Outdoor Irrigation = 2,848 Gal./Irrigated Acre	940	940 940	940 940	940 940	940 940	940 GALLONS 940
	Fire Storage	940	940	940	940	940	0 GALLONS
		394	394	394	394	394	394 GALLONS
	Emergency Storage, 10%						
21	Total Storage (Rounded)	5,274	5,274	5,274	5,274	5,274	5,274 GALLONS
	DISTRIBUTION SYSTEM REQUIREMENTS						
23		6.3	6.3	6.3	6.3	6.3	6.3 GPM
	Peak Hour Outside Demand = 7.92 Gpm/Irrigated Acre	2.6	2.6	2.6	2.6	2.6	2.6 GPM
25	Total Peak Hour Demand	8.9	8.9	8.9	8.9	8.9	8.9 GPM
26	ADDITIONAL SOURCE CAPACITY NEEDED						
	Physical Source Capacity on Peak Day Basis	0	0	0	0	0	0 Gallon/Minute
28	Physical Source Capacity on Annual Volume Basis	0	0	0	0	0	0 AcreFeet/Year
29	Water Rights Source Capacity on Peak Day Basis	2	2	2	2	2	2 Gallon/Minute
30	Water Rights Source Capacity on Annual Volume Basis	0	0	0	0	0	0 AcreFeet/Year
	ADDITIONAL STORAGE CAPACITY NEEDED						
32	Storage Capacity Needed	0	0	0	0	0	0 Gallons
33	EXISTING PHYSICAL SOURCE CAPACITY	nstantaneous Capacity		Annu	al Volume Capacit	V	
	New Well		n/Minute			, Feet/Year	
	Old Well	2 Gallo	n/Minute		2 Acre	Feet/Year	
36		2 00.00	in the total of total of the total of the total of total o		271010		
37		7 Gallo	n/Minute				
	Safety Factor	1.25					
39			n/Minute		10 Acre	Feet/Year	
	EXISTING WATER RIGHTS SOURCE CAPACITY	0 Galio			10 7010		
	New Well	Callo	n/Minute		8 Acro	Feet/Year	
	Old Well		n/Minute		incl. Acre		
42		Gallo	n/wintute		IIG. ACIE		
43	Total Peak Day Sources	0.000	n/Minute				
	Safety Factor	0 Galio 1.25	n/iviiiTute				
			n/Minuto		0 4	Feet/Year	
46	Total Peak Day Sources with Safety Factor EXISTING STORAGE CAPACITY	U Gallo	n/Minute		ö Acre	reel/rear	
47		7 500 0-11-	20				
48		7,500 Gallo	115				
49 50		7 500 0-11-	20				
	Total Storage	7,500 Gallo	ns				
	ADDITIONAL PERSONS SERVICEABLE WITH EXISTING CAPA						
	# based on Peak Day Physical Source Capacity	83 Perso					
	# based on Annual Physical Source Capacity	342 Perso					
	# based on Peak Day Water Rights Capacity	-60 Perso					
	# based on Annual Water Rights Capacity	271 Perso					
56	# based on Storage Capacity	25 Perso	ons				
Note							

 Line 2:
 Elementary School with students, staff and faculty maximum estimate = 60 persons. School in session about 180 days per year.

 Line 3:
 School grounds include about 1/3 acre of lawns.

 Lines 5:
 Water Demands calculated based on Utah Division of Drinking Water Standards assuming Zone 4 for outside watering requirements.

 Lines 2:4:45:
 When data was not available for either the annual limit (ac-ft/yr) or the maximum flow rate (cfs or gpm), the other value was obtained by a straight units conversion.

 Lines 24-41: Existing source and storage data has been gathered from the following sources of information: interviews with the water agency, sanitary surveys, water rights information and Division of Drinking Water records.

3 # Acres of Outside Irrigation per Unit       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00 <td< th=""><th>RE FEET RE FEET RL/DAY L/DAY L/DAY L/DAY M LLONS LLONS LLONS LLONS</th></td<>	RE FEET RE FEET RL/DAY L/DAY L/DAY L/DAY M LLONS LLONS LLONS LLONS
3 # Acres of Outside Irrigation per Unit       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00       0.00 <td< td=""><td>RES/CONN. RES REFEET REFEET REFEET L/DAY L/DAY L/DAY L/DAY LLONS LLONS LLONS LLONS</td></td<>	RES/CONN. RES REFEET REFEET REFEET L/DAY L/DAY L/DAY L/DAY LLONS LLONS LLONS LLONS
4         Total # Acres of Outside Irrigation for the System         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00         0.00	RES REFEET REFEET L/DAY L/DAY L/DAY M LLONS LLONS LLONS LLONS
SOURCE REQUIREMENTS           6 Annual Indoor Usage = 146,000 Gal/Year/Connection         704         711         925         1,202         1,562         2,031 AC           7 Annual Outdoor Usage = 1.87 Acre Feet/Irigated Acre         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0	RE FEET RE FEET RE FEET L/DAY L/DAY L/DAY M LLONS LLONS LLONS LLONS LLONS
6         Annual Indoor Usage = 146,000 Gal/Year/Connection         704         711         925         1,202         1,562         2,031 AC           7         Annual Outdor Usage = 1.87 Acre Feet/Irrigated Acre         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0 <td>RE FEET RE FEET L/DAY L/DAY L/DAY L/DAY M LLONS LLONS LLONS LLONS</td>	RE FEET RE FEET L/DAY L/DAY L/DAY L/DAY M LLONS LLONS LLONS LLONS
7         Annual Outdoor Usage = 1.87 Acre Feet/Irrigated Acre         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0	RE FEET RE FEET L/DAY L/DAY L/DAY L/DAY M LLONS LLONS LLONS LLONS
7         Annual Outdoor Usage = 1.87 Acre Feet/Irrigated Acre         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0	RE FEET RE FEET L/DAY L/DAY L/DAY L/DAY M LLONS LLONS LLONS LLONS
8         Total Annual Usage         704         711         925         1,202         1,562         2,031 AC           9         Peak Day Indoor Demand = 800 Gal./Day/Connection         1,256,206         1,269,718         1,650,633         2,145,823         2,789,569         3,626,440 GA           10         Peak Day Outdoor Demand = 3.96 Gpm/Irrigated Acre         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0	RE FEET L/DAY L/DAY L/DAY M LLONS LLONS LLONS LLONS LLONS
9         Peak Day Indoor Demand = 800 Gal./Day/Connection         1,256,206         1,269,718         1,650,633         2,145,823         2,789,569         3,626,440 GA           10         Peak Day Outdoor Demand = 3.96 Gpm/Irrigated Acre         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0	L/DAY L/DAY L/DAY M LLONS LLONS LLONS LLONS LLONS
10         Peak Day Outdoor Demand = 3.96 Gpm/Irrigated Acre         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0 <t< td=""><td>L/DAY L/DAY M LLONS LLONS LLONS LLONS</td></t<>	L/DAY L/DAY M LLONS LLONS LLONS LLONS
11         Total Peak Day Demand (Gallons per Minute)         1,256,206         1,269,718         1,650,633         2,145,823         2,789,569         3,626,440         GA           12         (Gallons per Minute)         872.37         882         1,146         1,490         1,937         2,518         GP           13         STORAGE REQUIREMENTS         50045/de Irrigation Requirement = 400 Gal/Connection         628,103         634,859         825,316         1,072,911         1,394,785         1,813,220         GA           15         Outside Irrigation Requirement = 2,848         Gal/Irrigated Acre         0         0         0         0         0         0         0         GA           16         Fire Storage (1,000 gpm for 1 hour)         60,000         60,000         60,000         60,000         60,000         60,000         60,000         60,000         60,000         60,000         60,000         60,000         60,000         60,000         60,000         60,000         60,000         60,000         60,000         60,000         60,000         60,000         60,000         60,000         60,000         60,000         60,000         60,000         60,000         60,000         60,000         60,000         60,000         60,000         60,000	LL/DAY M LLONS LLONS LLONS LLONS
12         (Gallons per Minute)         872.37         882         1,146         1,490         1,937         2,518 GP           13         STORAGE REQUIREMENTS	M LLONS LLONS LLONS LLONS
13         STORAGE REQUIREMENTS           14         Indoor Requirement = 4.00 Gal/Connection         628,103         634,859         825,316         1,072,911         1,394,785         1,813,220 GA           15         Outside Irrigation Requirement = 2,848 Gal/Irrigated Acre         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0 <td< td=""><td>LLONS LLONS LLONS LLONS</td></td<>	LLONS LLONS LLONS LLONS
14         Indoor Requirement = 400 Gal/Connection         628,103         634,859         825,316         1,072,911         1,394,785         1,813,220 GA           15         Outside Irrigation Requirement = 2,848 Gal/Irrigated Acre         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0	LLONS LLONS LLONS
15         Outside Irrigation Requirement = 2,848 Gal/Irrigated Acre         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0	LLONS LLONS LLONS
16 Fire Storage (1,000 gpm for 1 hour)         60,000         60,000         60,000         60,000         60,000         60,000         60,000         60,000         60,000         60,000         60,000         60,000         60,000         60,000         60,000         60,000         60,000         60,000         60,000         60,000         60,000         60,000         60,000         60,000         60,000         60,000         60,000         60,000         60,000         60,000         60,000         60,000         60,000         60,000         60,000         60,000         60,000         60,000         60,000         60,000         60,000         60,000         60,000         60,000         60,000         60,000         60,000         60,000         60,000         60,000         60,000         60,000         60,000         60,000         60,000         60,000         60,000         60,000         60,000         60,000         60,000         60,000         60,000         60,000         60,000         60,000         60,000         60,000         60,000         60,000         60,000         60,000         60,000         60,000         60,000         60,000         60,000         60,000         60,000         60,000         60,000         60,000 <th< td=""><td>LLONS</td></th<>	LLONS
17         Emergency Storage, 10%         62,810         63,486         82,532         107,291         139,478         181,322         GA           18         Total Storage (Rounded)         750,000         760,000         970,000         1,240,000         1,590,000         2,050,000         GA           19         DISTRIBUTION SYSTEM REQUIREMENTS         20         Peak Hour Indoor Demand = 10.8(N^6.64); N = # Connections         1,199         1,207         1,428         1,689         1,998         2,363         GP           21         Peak Hour Outside Demand = 7.92         Gpm/Irrigated Acre         0         0         0         0         0         0         0	LLONS
18         Total Storage (Rounded)         750,000         760,000         970,000         1,240,000         1,590,000         2,050,000         GA           19 <b>DISTRIBUTION SYSTEM REQUIREMENTS</b> 20         Peak Hour Indoor Demand = 10.8(N^.64); N = # Connections         1,199         1,207         1,428         1,689         1,998         2,363         GP           21         Peak Hour Outside Demand = 7.92         Gpm/Irrigated Acre         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0	
19         DISTRIBUTION SYSTEM REQUIREMENTS           20         Peak Hour Indoor Demand = 10.8(N^6.64); N = # Connections         1,199         1,207         1,428         1,689         1,998         2,363 GP           21         Peak Hour Outside Demand = 7.92 Gpm/Irigated Acre         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0	ELOITO
20         Peak Hour Indoor Demand = 10.8(N^.64); N = # Connections         1,199         1,207         1,428         1,689         1,998         2,363 GP           21         Peak Hour Outside Demand = 7.92 Gpm/Irrigated Acre         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0	
21 Peak Hour Outside Demand = 7.92 Gpm/Irrigated Acre 0 0 0 0 0 0 0 0 0 GP	M
22 Total Peak Hour Demand 1,199 1,207 1,428 1,689 1,998 2,363 GP	
22 ADDITIONAL SOURCE CAPACITY NEEDED 0.809242567 0.817946379 1.06330293 1.382329381 1.797028195 2.336136654	
	llon/Minute
	reFeet/Year
	llon/Minute
	reFeet/Year
2/ Water Rights source Capacity on Annual volume basis 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	ereet/rear
29 Storage Capacity Needed 0 0 0 0 0 400,000 Gal	llana
	lions
30 EXISTING PHYSICAL SOURCE CAPACITY Instantaneous Capacity Annual Volume Capacity	
31 Stokes (Walker) Springs July Low Flow Estimate 18 Gallon/Minute 28 Acre Feet/Year	
32 Allen St Well #1 0 Gallon/Minute 0 Acre Feet/Year	
33 Allen St Well #2 220 Gallon/Minute 177 Acre Feet/Year	
34 Anderson Well #3 360 Gallon/Minute 290 Acre Feet/Year	
35 East Bench Well #4 750 Gallon/Minute 605 Acre Feet/Year	
36 Basin Springs Gallon/Minute 0 Acre Feet/Year	
38 Total Peak Day Sources 1,348 Gallon/Minute	
39 Safety Factor 1.25	
40 Total Peak Day Sources with Safety Factor 1,078 Gallon/Minute 1,101 Acre Feet/Year 41 EXISTING WATER RIGHTS SOURCE CAPACITY	
41 EXISTING WATER RIGHTS SOURCE CAPACITY 410 Existing All the	
42 Stokes (Walker) Springs 130 Gallon/Minute 210 Acre Feet/Year	
43/Allen St Well #1 247 Gallon/Minute 199 Acre Feet/Year	
44 Allen St Well #2 430 Gallon/Minute 346 Acre Feet/Year	
45[Anderson Well #3 399 Gallon/Minute 322 Acre Feet/Year	
46 East Bench Well #4 898 Gallon/Minute 724 Acre Feet/Year	
47 Basin Springs 224 Gallon/Minute 362 Acre Feet/Year	
48 40 Tatel Deak Deu Seurees 2229 Celler/Minute	
49 Total Peak Day Sources 2,328 Gallon/Minute	
50 Safety Factor 1.25 51 Toth Dark Dark Dark Safety Factor 2.454 Area Factor	
51 Total Peak Day Sources with Safety Factor 1,862 Gallon/Minute 2,164 Acre Feet/Year	
52 EXISTING STORAGE CAPACITY	
53 Tank 1 300,000 Gallons 54 Tank 2 350.000 Gallons	
55] Tank 3 1,000,000 Gallons	
57 Total Storage 1,650,000 Gallons	
58 ADDITIONAL CONNECTIONS SERVICEABLE WITH EXISTING CAPACITY	
59 # based on Peak Day Physical Source Capacity 370 Connections	
60 # based on Annual Physical Source Capacity 887 Connections	
61 # based on Peak Day Water Rights Capacity 1,782 Connections	
62 # based on Annual Water Rights Capacity 3,258 Connections	
63 # based on Storage Capacity 1,884 Connections	

Notes

 Notes:

 Line 3:
 Perry has a secondary water system that serves essentially all of its customers

 Lines 5-18:
 Water Demands calculated based on Utah Division of Drinking Water Standards assuming Zone 4 for outside watering requirements.

 Lines 24-35:
 When data was not available for either the annual limit (ac-ft/yr) or the maximum flow rate (cfs or gpm), the other value was obtained by a straight units conversion.

 Lines 24-41:
 Existing source and storage data has been gathered from the following sources of information: interviews with the water agency, sanitary surveys, water rights information and Division of Drinking Water records.

Tech	inical data for Plymouth						
1	POPULATION AND IRRIGATED ACREAGE DATA:	2015	2020	2030	2040	2050	2060
2	# Units in Service Area	168	181	212	249	324	421 CONNECTIONS
3	# Acres of Outside Irrigation per Unit	0.24	0.24	0.24	0.24	0.24	0.24 ACRES/CONN.
4	Total # Acres of Outside Irrigation for the System	40.32	43.43	50.97	59.82	77.76	101.09 ACRES
5	SOURCE REQUIREMENTS						
	Annual Indoor Usage = 146,000 Gal/Year/Connection	75	81	95	112	145	189 ACRE FEET
7	<b>3</b>	75	81	95	112	145	189 ACRE FEET
. 8		151	162	190	224	291	378 ACRE FEET
-	Peak Day Indoor Demand = 800 Gal./Day/Connection	134,400	144.756	169.890	199.388	259,204	336,966 GAL/DAY
10		229,921	247,637	290,634	341,097	443,426	576,454 GAL/DAY
11	Total Peak Day Demand	364,321	392,393	460,524	540,485	702,630	913,419 GAL/DAY
12		253.00	272	320	375	488	634 GPM
	STORAGE REQUIREMENTS	200.00	212	020	010	400	004 01 1
	Indoor Requirement = 400 Gal/Connection	67,200	72,378	84,945	99,694	129,602	168,483 GALLONS
	Outside Irrigation Requirement = 2,848 Gal/Irrigated Acre	114,831	123,679	145,154	170,357	221,464	287,903 GALLONS
	Fire Storage (500 gpm for 1/2 hour)	15,000	15,000	15,000	15,000	15,000	15,000 GALLONS
17	Emergency Storage, 10%	18,203	19,606	23,010	27,005	35,107	45,639 GALLONS
18	Total Storage (Rounded)	220,000	230,000	270,000	310,000	400,000	520,000 GALLONS
	DISTRIBUTION SYSTEM REQUIREMENTS						
20		287	301	333	369	437	517 GPM
21	Peak Hour Outside Demand = 7.92 Gpm/Irrigated Acre	319	344	404	474	616	801 GPM
22		606	645	737	843	1,053	1,317 GPM
23	ADDITIONAL SOURCE CAPACITY NEEDED	0.733316174	0.789820498	0.926957031	1.08790458	1.414275954	1.83855874
24	Physical Source Capacity on Peak Day Basis	0	0	0	30	143	289 Gallon/Minute
25	Physical Source Capacity on Annual Volume Basis	0	0	0	0	0	25 AcreFeet/Year
26	Water Rights Source Capacity on Peak Day Basis	0	0	0	0	0	40 Gallon/Minute
27	Water Rights Source Capacity on Annual Volume Basis	0	0	0	0	0	0 AcreFeet/Year
28	ADDITIONAL STORAGE CAPACITY NEEDED						
29	Change of Comparison Negative Neg	0	0		-	0	
	Storage Capacity Needed	0	0	0	0	0	0 Gallons
30		u Istantaneous Capa			0 nnual Volume Cap		0 Gallons
30	EXISTING PHYSICAL SOURCE CAPACITY	nstantaneous Capa	city		nnual Volume Cap	acity	0 Gallons
30 31	EXISTING PHYSICAL SOURCE CAPACITY In Water Canyon & Bishop's Springs	nstantaneous Capa 6 G			nnual Volume Cap 10 A		0 Gallons
30	EXISTING PHYSICAL SOURCE CAPACITY In Water Canyon & Bishop's Springs	nstantaneous Capa 6 G 425 G	city allon/Minute		nnual Volume Cap 10 A 343 A	acity cre Feet/Year	0 Gallons
30 31 32 33	EXISTING PHYSICAL SOURCE CAPACITY In Water Canyon & Bishop's Springs	nstantaneous Capa 6 G 425 G	city allon/Minute allon/Minute		nnual Volume Cap 10 A 343 A	acity cre Feet/Year cre Feet/Year	0 Gallons
30 31 32 33 34	EXISTING PHYSICAL SOURCE CAPACITY In Water Canyon & Bishop's Springs New Well	nstantaneous Capa 6 G 425 G G	city allon/Minute allon/Minute allon/Minute		nnual Volume Cap 10 A 343 A	acity cre Feet/Year cre Feet/Year	0 Gallons
30 31 32 33 34 35	EXISTING PHYSICAL SOURCE CAPACITY In Water Canyon & Bishop's Springs New Well Total Peak Day Sources	nstantaneous Capa 6 G 425 G G 431 G	city allon/Minute allon/Minute		nnual Volume Cap 10 A 343 A	acity cre Feet/Year cre Feet/Year	0 Gallons
30 31 32 33 34 35 36	EXISTING PHYSICAL SOURCE CAPACITY In Water Canyon & Bishop's Springs New Well Total Peak Day Sources Safety Factor	nstantaneous Capa 6 G 425 G G 431 G 431 G 1.25	city allon/Minute allon/Minute allon/Minute		nnual Volume Cap 10 A 343 A A	acity cre Feet/Year cre Feet/Year	0 Gallons
30 31 32 33 34 35 36 37	EXISTING PHYSICAL SOURCE CAPACITY In Water Canyon & Bishop's Springs New Well Total Peak Day Sources	nstantaneous Capa 6 G 425 G G 431 G 431 G 1.25	city allon/Minute allon/Minute allon/Minute allon/Minute		nnual Volume Cap 10 A 343 A A	acity cre Feet/Year cre Feet/Year cre Feet/Year	0 Gallons
30 31 32 33 34 35 36 37 38	EXISTING PHYSICAL SOURCE CAPACITY In Water Canyon & Bishop's Springs New Well Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY	nstantaneous Capa 6 G 425 G 6 431 G 1.25 345 G	city allon/Minute allon/Minute allon/Minute allon/Minute		nnual Volume Cap 10 A 343 A A 353 A	acity cre Feet/Year cre Feet/Year cre Feet/Year	0 Gallons
30 31 32 33 34 35 36 37 38 39	EXISTING PHYSICAL SOURCE CAPACITY In Water Canyon & Bishop's Springs New Well Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Water Canyon & Bishop's Springs	1stantaneous Capa 6 G 425 G 431 G 1.25 345 G 177 G	city allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute		nnual Volume Cap 10 A 343 A A 353 A 105 A	acity cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year	0 Gallons
30 31 32 33 34 35 36 37 38 39 40	EXISTING PHYSICAL SOURCE CAPACITY In Water Canyon & Bishop's Springs New Well Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY	stantaneous Capa 6 G 425 G 431 G 1.25 345 G 177 G 565 G	city allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute		nnual Volume Cap 10 A 343 A A 353 A 105 A 353 A	acity cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year	0 Gallons
30 31 32 33 34 35 36 37 38 39 40 41	EXISTING PHYSICAL SOURCE CAPACITY In Water Canyon & Bishop's Springs New Well Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Water Canyon & Bishop's Springs	stantaneous Capa 6 G 425 G 431 G 1.25 345 G 177 G 565 G	city allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute		nnual Volume Cap 10 A 343 A A 353 A 105 A 353 A	acity cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year	0 Gallons
300 31 32 33 34 35 36 37 38 39 40 41 42	EXISTING PHYSICAL SOURCE CAPACITY In Water Canyon & Bishop's Springs New Well Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Water Canyon & Bishop's Springs Wells	nstantaneous Capa 6 G 425 G 431 G 1.25 345 G 177 G 565 G G	city allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute		nnual Volume Cap 10 A 343 A A 353 A 105 A 353 A	acity cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year	0 Gallons
300 311 322 333 344 355 366 377 388 399 400 411 422 433	EXISTING PHYSICAL SOURCE CAPACITY       In         Water Canyon & Bishop's Springs       New Well         Total Peak Day Sources       Safety Factor         Total Peak Day Sources with Safety Factor       EXISTING WATER RIGHTS SOURCE CAPACITY         Water Canyon & Bishop's Springs       Wells         Total Peak Day Sources       Safety Factor	Istantaneous Capa 6 G 425 G 431 G 1.25 345 G 177 G 565 G G 743 G	city allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute		nnual Volume Cap 10 A 343 A A 353 A 105 A 353 A	acity cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year	0 Gallons
300 311 322 333 344 355 366 377 388 399 400 411 422 433 44	EXISTING PHYSICAL SOURCE CAPACITY       In         Water Canyon & Bishop's Springs       New Well         Total Peak Day Sources       Safety Factor         EXISTING WATER RIGHTS SOURCE CAPACITY       Water Canyon & Bishop's Springs         Wells       Total Peak Day Sources         Safety Factor       EXISTING WATER RIGHTS SOURCE CAPACITY         Water Canyon & Bishop's Springs       Wells         Total Peak Day Sources       Safety Factor	stantaneous Capa 6 G 425 G 431 G 1.25 345 G 177 G 565 G G 743 G 1.25	city allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute		nnual Volume Cap 10 A 343 A A 353 A 105 A 353 A 353 A A	acity cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year	0 Gallons
30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45	EXISTING PHYSICAL SOURCE CAPACITY       In         Water Canyon & Bishop's Springs       New Well         Total Peak Day Sources       Safety Factor         Total Peak Day Sources with Safety Factor       EXISTING WATER RIGHTS SOURCE CAPACITY         Water Canyon & Bishop's Springs       Wells         Total Peak Day Sources       Safety Factor         Total Peak Day Sources       Safety Factor	stantaneous Capa 6 G 425 G 431 G 1.25 345 G 177 G 565 G G 743 G 1.25	city allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute		nnual Volume Cap 10 A 343 A A 353 A 105 A 353 A 353 A A	acity cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year	0 Gallons
300 31 322 333 34 35 36 37 38 39 40 41 42 43 44 45 46	EXISTING PHYSICAL SOURCE CAPACITY In Water Canyon & Bishop's Springs New Well Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Water Canyon & Bishop's Springs Wells Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING STORAGE CAPACITY	Istantaneous Capa 6 G 425 G 431 G 1.25 345 G 177 G 565 G 743 G 1.25 594 G	city allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute		nnual Volume Cap 10 A 343 A A 353 A 105 A 353 A 353 A A	acity cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year	0 Gallons
300 31 322 333 34 35 36 37 38 39 40 41 42 43 44 45 46 47	EXISTING PHYSICAL SOURCE CAPACITY       In         Water Canyon & Bishop's Springs       New Well         Total Peak Day Sources       Safety Factor         EXISTING WATER RIGHTS SOURCE CAPACITY       Water Canyon & Bishop's Springs         Wells       Total Peak Day Sources         Total Peak Day Sources       Safety Factor         EXISTING WATER RIGHTS SOURCE CAPACITY       Water Canyon & Bishop's Springs         Wells       Total Peak Day Sources         Safety Factor       Total Peak Day Sources with Safety Factor         EXISTING STORAGE CAPACITY       3 Tanks	stantaneous Capa 6 G 425 G 431 G 1.25 345 G 177 G 565 G 743 G 1.25 594 G 250,000 G	city allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute		nnual Volume Cap 10 A 343 A A 353 A 105 A 353 A 353 A A	acity cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year	0 Gallons
300 311 322 333 344 355 366 377 388 399 400 411 422 433 444 455 466 477 488	EXISTING PHYSICAL SOURCE CAPACITY       In         Water Canyon & Bishop's Springs       New Well         Total Peak Day Sources       Safety Factor         EXISTING WATER RIGHTS SOURCE CAPACITY       Water Canyon & Bishop's Springs         Wells       Total Peak Day Sources         Total Peak Day Sources       Safety Factor         EXISTING WATER RIGHTS SOURCE CAPACITY       Water Canyon & Bishop's Springs         Wells       Total Peak Day Sources         Safety Factor       Total Peak Day Sources with Safety Factor         EXISTING STORAGE CAPACITY       3 Tanks	Istantaneous Capa 6 G 425 G 431 G 1.25 345 G 177 G 565 G 743 G 1.25 594 G	city allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute		nnual Volume Cap 10 A 343 A A 353 A 105 A 353 A 353 A A	acity cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year	0 Gallons
300 311 322 333 344 355 366 377 388 399 400 411 422 433 444 45 466 477 488 499	EXISTING PHYSICAL SOURCE CAPACITY       In         Water Canyon & Bishop's Springs       New Well         Total Peak Day Sources       Safety Factor         EXISTING WATER RIGHTS SOURCE CAPACITY       Water Canyon & Bishop's Springs         Wells       Total Peak Day Sources         Safety Factor       EXISTING WATER RIGHTS SOURCE CAPACITY         Water Canyon & Bishop's Springs       Wells         Total Peak Day Sources       Safety Factor         Total Peak Day Sources       Safety Factor         Total Peak Day Sources with Safety Factor       EXISTING STORAGE CAPACITY         3 Tanks       New Tank	stantaneous Capa 6 G 425 G 431 G 1.25 345 G 177 G 565 G 743 G 1.25 594 G 250,000 G 500,000 G	city allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allons		nnual Volume Cap 10 A 343 A A 353 A 105 A 353 A 353 A A	acity cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year	0 Gallons
300 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50	EXISTING PHYSICAL SOURCE CAPACITY In Water Canyon & Bishop's Springs New Well Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Water Canyon & Bishop's Springs Wells Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING STORAGE CAPACITY 3 Tanks New Tank Total Storage	15tantaneous Capa 6 G 425 G 431 G 1.25 345 G 177 G 565 G 743 G 1.25 594 G 250,000 G 500,000 G	city allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allons		nnual Volume Cap 10 A 343 A A 353 A 105 A 353 A 353 A A	acity cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year	0 Gallons
300 31 32 33 34 35 36 37 38 39 40 41 42 43 44 44 45 46 47 7 48 49 50 51	EXISTING PHYSICAL SOURCE CAPACITY In Water Canyon & Bishop's Springs New Well Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Water Canyon & Bishop's Springs Wells Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING STORAGE CAPACITY 3 Tanks New Tank Total Storage ADDITIONAL CONNECTIONS SERVICEABLE WITH EXISTING C	stantaneous Capa 6 G 425 G 431 G 1.25 345 G 177 G 565 G 743 G 1.25 594 G 250,000 G 500,000 G 750,000 G 750,000 G	city allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allons allons allons		nnual Volume Cap 10 A 343 A A 353 A 105 A 353 A 353 A A	acity cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year	0 Gallons
300 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52	EXISTING PHYSICAL SOURCE CAPACITY In Water Canyon & Bishop's Springs New Well Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Water Canyon & Bishop's Springs Wells Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING STORAGE CAPACITY 3 Tanks New Tank Total Storage ADDITIONAL CONNECTIONS SERVICEABLE WITH EXISTING C.	stantaneous Capa 6 G 425 G 431 G 1.25 345 G 177 G 565 G 743 G 1.25 594 G 250,000 G 250,000 G 750,000 G APACITY 61 C	city allon/Minute allons allons onnections		nnual Volume Cap 10 A 343 A A 353 A 105 A 353 A 353 A A	acity cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year	0 Gallons
300 311 322 333 34 35 36 37 38 39 40 41 42 43 39 40 41 42 43 44 45 50 51 52 53	EXISTING PHYSICAL SOURCE CAPACITY In Water Canyon & Bishop's Springs New Well Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Water Canyon & Bishop's Springs Wells Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING STORAGE CAPACITY 3 Tanks New Tank Total Storage ADDITIONAL CONNECTIONS SERVICEABLE WITH EXISTING C. # based on Peak Day Physical Source Capacity # based on Annual Physical Source Capacity	stantaneous Capa 6 G 425 G 431 G 1.25 345 G 177 G 565 G 743 G 1.25 594 G 250,000 G 750,000 G 750,000 G APACITY 61 C 225 C	city allon/Minute allons allons onnections onnections		nnual Volume Cap 10 A 343 A A 353 A 105 A 353 A 353 A A	acity cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year	0 Gallons
300 311 322 333 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54	EXISTING PHYSICAL SOURCE CAPACITY in Water Canyon & Bishop's Springs New Well Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Water Canyon & Bishop's Springs Wells Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING STORAGE CAPACITY 3 Tanks New Tank Total Storage ADDITIONAL CONNECTIONS SERVICEABLE WITH EXISTING C. # based on Peak Day Physical Source Capacity # based on Peak Day Water Rights Capacity	stantaneous Capa 6 G 425 G 431 G 1.25 345 G 177 G 565 G 743 G 1.25 594 G 250,000 G 750,000 G 750,000 G 750,000 G 750,000 G 750,000 G 750,000 G 750,000 G	city allon/Minute allons allons allons allons onnections onnections onnections		nnual Volume Cap 10 A 343 A A 353 A 105 A 353 A 353 A A	acity cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year	0 Gallons
300 311 322 333 34 35 36 37 38 39 40 41 422 43 44 45 54 55 55 55 55	EXISTING PHYSICAL SOURCE CAPACITY       in         Water Canyon & Bishop's Springs       New Well         Total Peak Day Sources       Safety Factor         EXISTING WATER RIGHTS SOURCE CAPACITY       Water Canyon & Bishop's Springs         Wells       Total Peak Day Sources         Total Peak Day Sources with Safety Factor       EXISTING WATER RIGHTS SOURCE CAPACITY         Water Canyon & Bishop's Springs       Wells         Total Peak Day Sources       Safety Factor         EXISTING STORAGE CAPACITY       Stanks         New Tank       Total Storage         ADDITIONAL CONNECTIONS SERVICEABLE WITH EXISTING C       # based on Peak Day Physical Source Capacity         # based on Peak Day Water Rights Capacity       # based on Annual Physical Source Capacity         # based on Annual Water Rights Capacity       # based on Annual Water Rights Capacity	stantaneous Capa 6 G 425 G 431 G 1.25 345 G 177 G 565 G 743 G 1.25 594 G 250,000 G 750,000 G 750,000 G 750,000 G 750,000 G 0,000 G 750,000 G 750,000 G 225 C 227 C 343 C	city allon/Minute allons allons allons onnections onnections onnections onnections		nnual Volume Cap 10 A 343 A A 353 A 105 A 353 A 353 A A	acity cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year	0 Gallons
300 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 35 4 55	EXISTING PHYSICAL SOURCE CAPACITY in Water Canyon & Bishop's Springs New Well Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Water Canyon & Bishop's Springs Wells Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING STORAGE CAPACITY 3 Tanks New Tank Total Storage ADDITIONAL CONNECTIONS SERVICEABLE WITH EXISTING C. # based on Peak Day Physical Source Capacity # based on Peak Day Water Rights Capacity	stantaneous Capa 6 G 425 G 431 G 1.25 345 G 177 G 565 G 743 G 1.25 594 G 250,000 G 750,000 G 750,000 G 750,000 G 750,000 G 0,000 G 750,000 G 750,000 G 225 C 227 C 343 C	city allon/Minute allons allons allons allons onnections onnections onnections		nnual Volume Cap 10 A 343 A A 353 A 105 A 353 A 353 A A	acity cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year	0 Gallons

Notes:

 Line 3:
 Based on average water use in 2014-2015 with average lawn size calculated to match total water use per residential connection.

 Lines 5-18:
 Water Demands calculated based on Utah Division of Drinking Water Standards assuming Zone 4 for outside watering requirements.

 Lines 24-35:
 When data was not available for either the annual limit (ac-ft/yr) or the maximum flow rate (cfs or gpm), the other value was obtained by a straight units conversion.

Tech	nical data for Portage						
1	POPULATION AND IRRIGATED ACREAGE DATA:	2015	2020	2030	2040	2050	2060
	# Units in Service Area	108	118	139	163	191	248 CONNECTIONS
	# Acres of Outside Irrigation per Unit	0.24	0.24	0.24	0.24	0.24	0.24 ACRES/CONN.
4	Total # Acres of Outside Irrigation for the System	25.82	28.24	33.15	38.90	45.66	59.36 ACRES
5	SOURCE REQUIREMENTS						
6	Annual Indoor Usage = 146,000 Gal/Year/Connection	48	53	62	73	86	111 ACRE FEET
7	Annual Outdoor Usage = 1.87 Acre Feet/Irrigated Acre	48	53	62	73	85	111 ACRE FEET
8	Total Annual Usage	97	106	124	146	171	222 ACRE FEET
g	Peak Day Indoor Demand = 800 Gal./Day/Connection	86,400	94,501	110,909	130,167	152,767	198,598 GAL/DAY
10		147,252	161,059	189,023	221,843	260,362	338,471 GAL/DAY
11	Total Peak Day Demand	233,652	255,560	299,933	352,010	413,129	537,068 GAL/DAY
12	(Gallons per Minute)	162.26	177	208	244	287	373 GPM
13	STORAGE REQUIREMENTS						
14	Indoor Requirement = 400 Gal/Connection	43,200	47,251	55,455	65,083	76,384	99,299 GALLONS
15	Outside Irrigation Requirement = 2,848 Gal/Irrigated Acre	73,543	80,439	94,406	110,797	130,035	169,045 GALLONS
16	Fire Storage (500 gpm for 1/2 hour)	15,000	15,000	15,000	15,000	15,000	15,000 GALLONS
17	Emergency Storage, 10%	11,674	12,769	14,986	17,588	20,642	26,834 GALLONS
18		140,000	160,000	180,000	210,000	240,000	310,000 GALLONS
19	DISTRIBUTION SYSTEM REQUIREMENTS						
20	Peak Hour Indoor Demand = 10.8(N^.64); N = # Connections	216	229	254	281	311	368 GPM
21	Peak Hour Outside Demand = 7.92 Gpm/Irrigated Acre	205	224	263	308	362	470 GPM
22	Total Peak Hour Demand	421	453	516	589	673	838 GPM
23	ADDITIONAL SOURCE CAPACITY NEEDED	0.359175583	0.39285295	0.461064008	0.541118551	0.635072965	0.825594855
	Physical Source Capacity on Peak Day Basis	0	0	0	0	0	0 Gallon/Minute
	Physical Source Capacity on Annual Volume Basis	0	0	0	0	0	0 AcreFeet/Year
	Water Rights Source Capacity on Peak Day Basis	11	26	57	93	135	221 Gallon/Minute
	Water Rights Source Capacity on Annual Volume Basis	0	0	0	0	0	21 AcreFeet/Year
	ADDITIONAL STORAGE CAPACITY NEEDED						
		0				0	
20	Storage Capacity Needed	0	0	0	0	0	0 Gallons
						Ŷ	0 Gallons
30		Instantaneous Capac			nnual Volume Cap	Ŷ	0 Gallons
30 31	EXISTING PHYSICAL SOURCE CAPACITY	Instantaneous Capac 350 Ga	ity		nnual Volume Cap 282 A	acity	0 Gallons
30 31 32	EXISTING PHYSICAL SOURCE CAPACITY Upper Well	Instantaneous Capac 350 Ga 200 Ga	ity Illon/Minute		nnual Volume Cap 282 A 323 A	acity .cre Feet/Year	0 Gallons
30 31 32	EXISTING PHYSICAL SOURCE CAPACITY Upper Well Upper Springs Lower Springs (minimum year = 2003 & 2004)	Instantaneous Capac 350 Ga 200 Ga	ity Ilon/Minute Ilon/Minute		nnual Volume Cap 282 A 323 A	acity .cre Feet/Year .cre Feet/Year	0 Gallons
30 31 32 33 34	EXISTING PHYSICAL SOURCE CAPACITY Upper Well Upper Springs Lower Springs (minimum year = 2003 & 2004)	Instantaneous Capac 350 Ga 200 Ga 15 Ga	ity Ilon/Minute Ilon/Minute		nnual Volume Cap 282 A 323 A	acity .cre Feet/Year .cre Feet/Year	0 Gallons
30 31 32 33 34 35	EXISTING PHYSICAL SOURCE CAPACITY Upper Well Upper Springs Lower Springs (minimum year = 2003 & 2004)	Instantaneous Capac 350 Ga 200 Ga 15 Ga	ity Illon/Minute Illon/Minute Illon/Minute		nnual Volume Cap 282 A 323 A	acity .cre Feet/Year .cre Feet/Year	0 Gallons
30 31 32 33 34 35 36	EXISTING PHYSICAL SOURCE CAPACITY Upper Well Upper Springs Lower Springs (minimum year = 2003 & 2004) Total Peak Day Sources	Instantaneous Capac 350 Ga 200 Ga 15 Ga 565 Ga 1.25	ity Illon/Minute Illon/Minute Illon/Minute		nnual Volume Cap 282 A 323 A 24 A	acity .cre Feet/Year .cre Feet/Year	0 Gallons
30 31 32 33 34 35 36 37	EXISTING PHYSICAL SOURCE CAPACITY Upper Well Upper Springs Lower Springs (minimum year = 2003 & 2004) Total Peak Day Sources Safety Factor	Instantaneous Capad 350 Ga 200 Ga 15 Ga 565 Ga 1.25 452 Ga	ity Ilon/Minute Ilon/Minute Ilon/Minute Ilon/Minute		nnual Volume Cap 282 A 323 A 24 A	acity .cre Feet/Year .cre Feet/Year .cre Feet/Year	0 Gallons
30 31 32 33 34 35 36 37 38 39	EXISTING PHYSICAL SOURCE CAPACITY Upper Well Upper Springs Lower Springs (minimum year = 2003 & 2004) Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Well	Instantaneous Capad 350 Ga 200 Ga 15 Ga 565 Ga 1.25 452 Ga 130 Ga	ity Illon/Minute Illon/Minute Illon/Minute Illon/Minute Illon/Minute		nnual Volume Cap 282 A 323 A 24 A 629 A 105 A	acity cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year	0 Gallons
30 31 32 33 34 35 36 37 38 39 40	EXISTING PHYSICAL SOURCE CAPACITY Upper Well Upper Springs Lower Springs (minimum year = 2003 & 2004) Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Well Upper Springs	Instantaneous Capac 350 Ga 200 Ga 15 Ga 155 Ga 1.25 452 Ga 130 Ga 10 Ga	ity Illon/Minute Illon/Minute Illon/Minute Illon/Minute Illon/Minute Illon/Minute		nnual Volume Cap 282 A 323 A 24 A 629 A 105 A 16 A	acity cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year	0 Gallons
30 31 32 33 34 35 36 37 38 39 40 41	EXISTING PHYSICAL SOURCE CAPACITY Upper Well Upper Springs Lower Springs (minimum year = 2003 & 2004) Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Well	Instantaneous Capac 350 Ga 200 Ga 15 Ga 155 Ga 1.25 452 Ga 130 Ga 10 Ga	ity Illon/Minute Illon/Minute Illon/Minute Illon/Minute Illon/Minute		nnual Volume Cap 282 A 323 A 24 A 629 A 105 A 16 A	acity cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year	0 Gallons
30 31 32 33 34 35 36 37 38 39 40 41 42	EXISTING PHYSICAL SOURCE CAPACITY Upper Well Upper Springs Lower Springs (minimum year = 2003 & 2004) Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Well Upper Springs South Canyon Spring	Instantaneous Capac 350 Ge 200 Ge 15 Ge 1.25 452 Ge 130 Ge 10 Ge 49 Ge	ity Illon/Minute Illon/Minute Illon/Minute Illon/Minute Illon/Minute Illon/Minute Illon/Minute		nnual Volume Cap 282 A 323 A 24 A 629 A 105 A 16 A	acity cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year	0 Gallons
30 31 32 33 34 35 36 37 38 39 40 41 42 43	EXISTING PHYSICAL SOURCE CAPACITY Upper Well Upper Springs Lower Springs (minimum year = 2003 & 2004) Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Well Upper Springs South Canyon Spring Total Peak Day Sources	Instantaneous Capac 350 Ga 200 Ga 565 Ga 1.25 452 Ga 130 Ga 49 Ga 190 Ga	ity Illon/Minute Illon/Minute Illon/Minute Illon/Minute Illon/Minute Illon/Minute		nnual Volume Cap 282 A 323 A 24 A 629 A 105 A 16 A	acity cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year	0 Gallons
30 31 32 33 34 35 36 37 38 39 40 41 42 43 44	EXISTING PHYSICAL SOURCE CAPACITY Upper Vell Upper Springs Lower Springs (minimum year = 2003 & 2004) Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Well Upper Springs South Canyon Spring Total Peak Day Sources Safety Factor	Instantaneous Capac 350 Ge 200 Ge 15 Ge 1.25 452 Ge 130 Ge 49 Ge 190 Ge 1.25	ity Illon/Minute Illon/Minute Illon/Minute Illon/Minute Illon/Minute Illon/Minute Illon/Minute		nnual Volume Cap 282 A 323 A 24 A 629 A 105 A 16 A 80 A	acity cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year	0 Gallons
30 31 32 33 34 35 36 37 38 39 40 41 42 43 44	EXISTING PHYSICAL SOURCE CAPACITY Upper Well Upper Springs Lower Springs (minimum year = 2003 & 2004) Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Well Upper Springs South Canyon Spring Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor	Instantaneous Capac 350 Ge 200 Ge 15 Ge 1.25 452 Ge 130 Ge 49 Ge 190 Ge 1.25	ity Illon/Minute Illon/Minute Illon/Minute Illon/Minute Illon/Minute Illon/Minute Illon/Minute		nnual Volume Cap 282 A 323 A 24 A 629 A 105 A 16 A 80 A	acity cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year	0 Gallons
30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46	EXISTING PHYSICAL SOURCE CAPACITY Upper Well Upper Springs Lower Springs (minimum year = 2003 & 2004) Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Well Upper Springs South Canyon Spring Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING STORAGE CAPACITY	Instantaneous Capac 350 Ga 200 Ga 15 Ga 565 Ga 1.25 452 Ga 130 Ga 10 Ga 49 Ga 190 Ga 1,25 152 Ga	ity Illon/Minute Illon/Minute Illon/Minute Illon/Minute Illon/Minute Illon/Minute Illon/Minute Illon/Minute		nnual Volume Cap 282 A 323 A 24 A 629 A 105 A 16 A 80 A	acity cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year	0 Gallons
300 311 322 333 344 355 366 377 388 399 400 41 42 43 44 44 5 460 47	EXISTING PHYSICAL SOURCE CAPACITY Upper Vell Upper Springs Lower Springs (minimum year = 2003 & 2004) Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Well Upper Springs South Canyon Spring Total Peak Day Sources Safety Factor Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING STORAGE CAPACITY Tank 1	Instantaneous Capac 350 Ge 200 Ge 1.25 Ge 1.25 Ge 130 Ge 452 Ge 190 Ge 1.25 152 Ge 100 Ge 1.25	ity Illon/Minute Illon/Minute Illon/Minute Illon/Minute Illon/Minute Illon/Minute Illon/Minute Illon/Minute Illon/Minute		nnual Volume Cap 282 A 323 A 24 A 629 A 105 A 16 A 80 A	acity cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year	0 Gallons
30 31 32 33 34 35 36 37 38 39 30 40 41 42 44 44 44 45 46 47 7 48	EXISTING PHYSICAL SOURCE CAPACITY Upper Well Upper Springs Lower Springs (minimum year = 2003 & 2004) Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Well Upper Springs South Canyon Spring Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING STORAGE CAPACITY Tank 1 Tank 1 Tank 2	Instantaneous Capac 350 Ga 200 Ga 15 Ga 565 Ga 1.25 452 Ga 130 Ga 10 Ga 49 Ga 190 Ga 1,25 152 Ga	ity Illon/Minute Illon/Minute Illon/Minute Illon/Minute Illon/Minute Illon/Minute Illon/Minute Illon/Minute Illon/Minute		nnual Volume Cap 282 A 323 A 24 A 629 A 105 A 16 A 80 A	acity cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year	0 Gallons
300 313 323 334 355 366 377 388 399 400 411 422 433 444 455 406 477 488 499	EXISTING PHYSICAL SOURCE CAPACITY Upper Well Upper Springs Lower Springs (minimum year = 2003 & 2004) Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Well Upper Springs South Canyon Spring Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING STORAGE CAPACITY Tank 1 Tank 2	Instantaneous Capac 350 Ga 200 Ga 15 Ga 565 Ga 1.25 452 Ga 130 Ga 10 Ga 190 Ga 1.25 152 Ga 190 Ga 1.25 152 Ga	ity Illon/Minute Illon/Minute Illon/Minute Illon/Minute Illon/Minute Illon/Minute Illon/Minute Illon/Minute Illon/Minute Illons		nnual Volume Cap 282 A 323 A 24 A 629 A 105 A 16 A 80 A	acity cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year	0 Gallons
300 311 322 333 344 355 366 377 388 399 400 411 422 433 444 455 466 477 488 499 500	EXISTING PHYSICAL SOURCE CAPACITY Upper Vell Upper Springs Lower Springs (minimum year = 2003 & 2004) Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Well Upper Springs South Canyon Spring Total Peak Day Sources Safety Factor Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING STORAGE CAPACITY Tank 1 Tank 2 Total Storage	Instantaneous Capac 350 Ge 200 Ge 1.25 Ge 1.25 Ge 1.25 Ge 130 Ge 190 Ge 1.25 152 Ge 100 Ge 1.25 500,000 Ge 500,000 Ge	ity Illon/Minute Illon/Minute Illon/Minute Illon/Minute Illon/Minute Illon/Minute Illon/Minute Illon/Minute Illon/Minute Illons		nnual Volume Cap 282 A 323 A 24 A 629 A 105 A 16 A 80 A	acity cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year	0 Gallons
300 311 322 333 344 355 366 377 388 399 400 411 422 433 444 455 466 477 488 499 500 51	EXISTING PHYSICAL SOURCE CAPACITY Upper Vell Upper Springs Lower Springs (minimum year = 2003 & 2004) Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Well Upper Springs South Canyon Spring Total Peak Day Sources Safety Factor Total Peak Day Sources Total Peak Day Sources Total Storage ADDITIONAL CONNECTIONS SERVICEABLE WITH EXISTING CO	Instantaneous Capac 350 Ge 200 Ge 15 Ge 1.25 452 Ge 130 Ge 10 Ge 190 Ge 1.25 152 Ge 100,000 Ge 500,000 Ge 600,000 Ge	ity Illon/Minute Illon/Minute Illon/Minute Illon/Minute Illon/Minute Illon/Minute Illon/Minute Illon/Minute Illons Illons Illons		nnual Volume Cap 282 A 323 A 24 A 629 A 105 A 16 A 80 A	acity cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year	0 Gallons
300 311 322 333 34 355 366 377 386 395 395 400 411 422 433 444 455 466 477 486 5555 55255	EXISTING PHYSICAL SOURCE CAPACITY Upper Well Upper Springs Lower Springs (minimum year = 2003 & 2004) Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Well Upper Springs South Canyon Spring Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING STORAGE CAPACITY Tank 1 Tank 2 Total Storage ADDITIONAL CONNECTIONS SERVICEABLE WITH EXISTING C # based on Peak Day Physical Source Capacity	Instantaneous Capac 350 Ge 200 Ge 15 Ge 565 Ge 1.25 452 Ge 130 Ge 130 Ge 190 Ge 1.25 152 Ge 100,000 Ge 500,000 Ge 600,000 Ge 600,000 Ge	ity illon/Minute illons illons illons illons		nnual Volume Cap 282 A 323 A 24 A 629 A 105 A 16 A 80 A	acity cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year	0 Gallons
300 311 322 333 34 35 36 37 38 39 39 40 411 422 43 44 44 45 49 45 50 51 525 55 55	EXISTING PHYSICAL SOURCE CAPACITY Upper Vell Upper Springs Lower Springs (minimum year = 2003 & 2004) Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Well Upper Springs South Canyon Spring Total Peak Day Sources Safety Factor Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING STORAGE CAPACITY Tank 1 Tank 2 Total Storage ADDITIONAL CONNECTIONS SERVICEABLE WITH EXISTING G # based on Peak Day Physical Source Capacity	Instantaneous Capac 350 Ge 200 Ge 200 Ge 1.25 452 Ge 130 Ge 452 Ge 130 Ge 190 Ge 125 152 Ge 100,000 Ge 500,000 Ge 600,000 Ge 509,000 Ge 509,000 Ge 509,000 Ge 600,000 Ge 509,000 Ge 594 Cc	ity illon/Minute illons illons illons innections innections innections illons illon il		nnual Volume Cap 282 A 323 A 24 A 629 A 105 A 16 A 80 A	acity cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year	0 Gallons
$\begin{array}{c} 3 \\ 3 \\ 3 \\ 3 \\ 3 \\ 3 \\ 3 \\ 3 \\ 3 \\ 3 $	EXISTING PHYSICAL SOURCE CAPACITY Upper Well Upper Springs Lower Springs (minimum year = 2003 & 2004) Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Well Upper Springs South Canyon Spring Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING STORAGE CAPACITY Tank 1 Tank 2 Total Storage ADDITIONAL CONNECTIONS SERVICEABLE WITH EXISTING O # based on Peak Day Physical Source Capacity # based on Peak Day Water Rights Capacity	Instantaneous Capac 350 Ge 200 Ge 15 Ge 1.25 452 Ge 130 Ge 190 Ge 190 Ge 1.25 152 Ge 100,000 Ge 500,000 Ge 600,000 Ge CAPACITY 193 Cc 594 Cc 594 Cc -7 Cc	ity Illon/Minute Illons I		nnual Volume Cap 282 A 323 A 24 A 629 A 105 A 16 A 80 A	acity cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year	0 Gallons
$\begin{array}{c} 300 \\ 311 \\ 322 \\ 333 \\ 344 \\ 358 \\ 377 \\ 388 \\ 399 \\ 400 \\ 411 \\ 422 \\ 433 \\ 444 \\ 455 \\ 511 \\ 522 \\ 511 \\ 522 \\ 515 \\ 535 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 545 \\ 555 \\ 545 \\ 555 \\ 545 \\ 555 \\ 545 \\ 555 \\ 545 \\ 555 \\ 545 \\ 555 \\ 545 \\ 555 \\ 545 \\ 555 \\ 545 \\ 555 \\ 555 \\ 545 \\ 555 \\ 555 \\ 545 \\ 555 \\ 555 \\ 545 \\ 555 \\ 555 \\ 545 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\$	EXISTING PHYSICAL SOURCE CAPACITY Upper Well Upper Springs Lower Springs (minimum year = 2003 & 2004) Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Well Upper Springs South Canyon Spring Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING STORAGE CAPACITY Tank 1 Tank 2 Total Storage ADDITIONAL CONNECTIONS SERVICEABLE WITH EXISTING C # based on Peak Day Physical Source Capacity # based on Annual Physical Source Capacity # based on Annual Water Rights Capacity # based on Annual Water Rights Capacity	Instantaneous Capac 350 Gz 200 Gz 205 Gz 1,25 452 Gz 130 Gz 130 Gz 49 Gz 190 Gz 1,25 152 Gz 100,000 Gz 500,000 Gz 600,000 Gz 500,000 Gz 500,000 Gz 500,000 Gz 193 Cz 193 Cz 193 Cz 193 Cz 194 Cz 195 Cz	ity illon/Minute illons illons illons innections nnections nnections		nnual Volume Cap 282 A 323 A 24 A 629 A 105 A 16 A 80 A	acity cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year	0 Gallons
$\begin{array}{c} 300 \\ 311 \\ 322 \\ 333 \\ 344 \\ 386 \\ 377 \\ 388 \\ 399 \\ 400 \\ 414 \\ 425 \\ 444 \\ 455 \\ 511 \\ 522 \\ 511 \\ 522 \\ 535 \\ 544 \\ 555 \\ 535 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 544 \\ 555 \\ 555 \\ 544 \\ 555 \\ 555 \\ 544 \\ 555 \\ 555 \\ 544 \\ 555 \\ 555 \\ 544 \\ 555 \\ 555 \\ 544 \\ 555 \\ 555 \\ 544 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\ 555 \\$	EXISTING PHYSICAL SOURCE CAPACITY Upper Vell Upper Springs Lower Springs (minimum year = 2003 & 2004) Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Well Upper Springs South Canyon Spring Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING STORAGE CAPACITY Tank 1 Tank 2 Total Storage ADDITIONAL CONNECTIONS SERVICEABLE WITH EXISTING O # based on Peak Day Physical Source Capacity # based on Annual Physical Source Capacity # based on Annual Water Rights Capacity # based on Storage Capacity # based on Storage Capacity	Instantaneous Capac 350 Gz 200 Gz 205 Gz 1,25 452 Gz 130 Gz 130 Gz 49 Gz 190 Gz 1,25 152 Gz 100,000 Gz 500,000 Gz 600,000 Gz 500,000 Gz 500,000 Gz 500,000 Gz 193 Cz 193 Cz 193 Cz 193 Cz 194 Cz 195 Cz	ity Illon/Minute Illons I		nnual Volume Cap 282 A 323 A 24 A 629 A 105 A 16 A 80 A	acity cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year	0 Gallons

Line 3: Based on average water use in dry years where springs overflow was unlikely, with average lawn size calculated to match total water use per residential connection. Line 3: Based on average water use in dry years where springs overflow was unlikely, with average lawn size calculated to match total water use per residential connection. Lines 5-18: Water Demands calculated based on Utah Division of Drinking Water Standards assuming Zone 4 for outside watering requirements. Lines 24-35: When data was not available for either the annual limit (ac-ft/yr) or the maximum flow rate (cfs or gpm), the other value was obtained by a straight units conversion. Lines 24-41: Existing source and storage data has been gathered from the following sources of information: interviews with the water agency, sanitary surveys, water rights information and Division of Drinking Water records.

Tech	nical data for Riverside-North Garland						
	POPULATION AND IRRIGATED ACREAGE DATA:	2015	2020	2030	2040	2050	2060
2	# Units in Service Area	634	648	761	893	1160	1508 CONNECTIONS
3	# Acres of Outside Irrigation per Unit	0.01	0.01	0.01	0.01	0.01	0.01 ACRES/CONN.
4	Total # Acres of Outside Irrigation for the System	8.24	8.42	9.89	11.60	15.08	19.61 ACRES
5	SOURCE REQUIREMENTS						
6	Annual Indoor Usage = 146,000 Gal/Year/Connection	284	290	341	400	520	676 ACRE FEET
7	Annual Outdoor Usage = 1.87 Acre Feet/Irrigated Acre	15	16	18	22	28	37 ACRE FEET
8	Total Annual Usage	300	306	359	422	548	713 ACRE FEET
9	Peak Day Indoor Demand = 800 Gal./Day/Connection	507,200	518,400	608,410	714,048	928,262	1,206,741 GAL/DAY
10	Peak Day Outdoor Demand = 3.96 Gpm/Irrigated Acre	46,999	48,037	56,378	66,167	86,017	111,821 GAL/DAY
11	Total Peak Day Demand	554,199	566,437	664,787	780,215	1,014,279	1,318,563 GAL/DAY
12		385	393	462	542	704	916 GPM
13	STORAGE REQUIREMENTS						
14	Indoor Requirement = 400 Gal/Connection	253,600	259,200	304,205	357,024	464,131	603,371 GALLONS
15	Outside Irrigation Requirement = 2,848 Gal/Irrigated Acre	23,473	23,992	28,157	33,046	42,960	55,848 GALLONS
16	Fire Storage (1,000 gpm for 1 hour)	60,000	60,000	60,000	60,000	60,000	60,000 GALLONS
17	Emergency Storage, 10%	27,707	28,319	33,236	39,007	50,709	65,922 GALLONS
18	Total Storage (Rounded)	360,000	370,000	430,000	490,000	620,000	790,000 GALLONS
19	DISTRIBUTION SYSTEM REQUIREMENTS						
20	Peak Hour Indoor Demand = 10.8(N^.64); N = # Connections	671	681	754	835	988	1,169 GPM
21	Peak Hour Outside Demand = 7.92 Gpm/Irrigated Acre	65	67	78	92	119	155 GPM
22	Total Peak Hour Demand	736	747	832	927	1,107	1,324 GPM
23	ADDITIONAL SOURCE CAPACITY NEEDED	0.783510876	0.800812378	0.939857431	1.103044877	1.43395834	1.864145842
24	Physical Source Capacity on Peak Day Basis	0	0	0	51	213	424 Gallon/Minute
25	Physical Source Capacity on Annual Volume Basis	0	0	0	0	23	188 AcreFeet/Year
26	Water Rights Source Capacity on Peak Day Basis	0	0	0	0	79	290 Gallon/Minute
27	Water Rights Source Capacity on Annual Volume Basis	0	0	0	0	0	0 AcreFeet/Year
28	ADDITIONAL STORAGE CAPACITY NEEDED						
29	Storage Capacity Needed	0	0	0	0	0	135,000 Gallons
		Instantaneous Capa		A	nnual Volume Capa		
	Well #1	228 G	allon/Minute		184 Ac	re Feet/Year	
32	Well #2	336 G	allon/Minute		271 Ac	re Feet/Year	
33	BRWCD Connection on 14400 North	50 G	allon/Minute		70 Ac	re Feet/Year	
34							
	Total Peak Day Sources		allon/Minute				
	Safety Factor	1.25					
37	Total Peak Day Sources with Safety Factor	491 G	allon/Minute				
38			alleri/initiate		525 Ac	re Feet/Year	
1 30	EXISTING WATER RIGHTS SOURCE CAPACITY						
	Well #1		allon/Minute		228 Ac	re Feet/Year	
40	Well #1 Well #2	449 G	allon/Minute allon/Minute		228 Ac	re Feet/Year re Feet/Year	
40 41	Well #1	449 G	allon/Minute		228 Ac	re Feet/Year	
40 41 42	Well #1 Well #2 BRWCD Connection on 14400 North	449 G 50 G	allon/Minute allon/Minute allon/Minute		228 Ac	re Feet/Year re Feet/Year	
40 41 42 43	Well #1 Well #2 BRWCD Connection on 14400 North Total Peak Day Sources	449 G 50 G 782 G	allon/Minute allon/Minute		228 Ac	re Feet/Year re Feet/Year	
40 41 42 43 44	Well #1 Well #2 BRWCD Connection on 14400 North Total Peak Day Sources Safety Factor	449 G 50 G 782 G 1.25	allon/Minute allon/Minute allon/Minute allon/Minute		228 Ac 609 Ac 36 Ac	rre Feet/Year rre Feet/Year rre Feet/Year	
40 41 42 43 44 45	Well #1 Well #2 BRWCD Connection on 14400 North Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor	449 G 50 G 782 G 1.25	allon/Minute allon/Minute allon/Minute		228 Ac 609 Ac 36 Ac	re Feet/Year re Feet/Year	
40 41 42 43 44 45 46	Well #1 Well #2 BRWCD Connection on 14400 North Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor <b>EXISTING STORAGE CAPACITY</b>	449 G 50 G 782 G 1.25 625 G	allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute		228 Ac 609 Ac 36 Ac	rre Feet/Year rre Feet/Year rre Feet/Year	
40 41 42 43 44 45 46 47	Well #1 Well #2 BRWCD Connection on 14400 North Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING STORAGE CAPACITY North Tank	449 G 50 G 782 G 1.25 625 G 200,000 G	allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allons		228 Ac 609 Ac 36 Ac	rre Feet/Year rre Feet/Year rre Feet/Year	
40 41 42 43 44 45 46 47 48	Well #1 Well #2 BRWCD Connection on 14400 North Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor <b>EXISTING STORAGE CAPACITY</b> North Tank Old South Tank	449 G 50 G 1.25 625 G 200,000 G 125,000 G	allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allons allons		228 Ac 609 Ac 36 Ac	rre Feet/Year rre Feet/Year rre Feet/Year	
40 41 42 43 44 45 46 47 48 49	Well #1 Well #2 BRWCD Connection on 14400 North Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING STORAGE CAPACITY North Tank	449 G 50 G 782 G 1.25 625 G 200,000 G	allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allons allons		228 Ac 609 Ac 36 Ac	rre Feet/Year rre Feet/Year rre Feet/Year	
40 41 42 43 44 45 46 47 48 49 50	Well #1 Well #2 BRWCD Connection on 14400 North Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING STORAGE CAPACITY North Tank Old South Tank New South Tank	449 G 50 G 1.25 625 G 200,000 G 125,000 G 330,000 G	allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allons allons allons		228 Ac 609 Ac 36 Ac	rre Feet/Year rre Feet/Year rre Feet/Year	
40 41 42 43 44 45 46 47 48 49 50 51	Well #1 Well #2 BRWCD Connection on 14400 North Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING STORAGE CAPACITY North Tank Old South Tank New South Tank New South Tank	449 G 50 G 1.25 G 200,000 G 125,000 G 330,000 G 655,000 G	allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allons allons allons		228 Ac 609 Ac 36 Ac	rre Feet/Year rre Feet/Year rre Feet/Year	
40 41 42 43 44 45 46 47 48 49 50 51 52	Well #1 Well #2 BRWCD Connection on 14400 North Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor ExISTING STORAGE CAPACITY North Tank Old South Tank New South Tank Total Storage ADDITIONAL CONNECTIONS SERVICEABLE WITH EXISTING 6	449 G 50 G 782 G 1.25 6 200,000 G 125,000 G 330,000 G 655,000 G CAPACITY	allon/Minute allon/Minute allon/Minute allon/Minute allons allons allons allons		228 Ac 609 Ac 36 Ac	rre Feet/Year rre Feet/Year rre Feet/Year	
40 41 42 43 44 45 46 47 48 49 50 51 52 53	Well #1 Well #2 Well #2 BRWCD Connection on 14400 North Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING STORAGE CAPACITY North Tank Old South Tank Old South Tank New South Tank Total Storage ADDITIONAL CONNECTIONS SERVICEABLE WITH EXISTING F # based on Peak Day Physical Source Capacity	449 G 50 G 1.25 6 200,000 G 125,000 G 330,000 G 655,000 G CAPACITY 175 C	allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allons allons allons allons onnections		228 Ac 609 Ac 36 Ac	rre Feet/Year rre Feet/Year rre Feet/Year	
40 41 42 43 44 45 46 47 48 49 50 51 52 53 54	Well #1 Well #2 Well #2 BRWCD Connection on 14400 North Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING STORAGE CAPACITY North Tank Old South Tank New South Tank Total Storage ADDITIONAL CONNECTIONS SERVICEABLE WITH EXISTING # based on Peak Day Physical Source Capacity # based on Annual Physical Source Capacity # based on Annual Physical Source Capacity	449 G 50 G 1.25 G 200,000 G 125,000 G 330,000 G 655,000 G CAPACITY 175 C 477 C	allon/Minute allon/Minute allon/Minute allon/Minute allons allons allons allons allons		228 Ac 609 Ac 36 Ac	rre Feet/Year rre Feet/Year rre Feet/Year	
40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55	Well #1 Well #2 Well #2 BRWCD Connection on 14400 North Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING STORAGE CAPACITY North Tank Old South Tank New South Tank Construct Connections ServiceAble with EXISTING # based on Peak Day Physical Source Capacity # based on Annual Physical Source Capacity # based on Peak Day Water Rights Capacity # based on Peak Day Water Rights Capacity	449 G 50 G 1.25 625 G 200,000 G 125,000 G 330,000 G 655,000 G CAPACITY 175 C 477 C 396 C	allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allons allons allons allons onnections onnections onnections		228 Ac 609 Ac 36 Ac	rre Feet/Year rre Feet/Year rre Feet/Year	
40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56	Well #1 Well #2 Well #2 BRWCD Connection on 14400 North Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING STORAGE CAPACITY North Tank Old South Tank Old South Tank New South Tank Context Construction Context Construction Context Con	449 G 50 G 1.25 625 G 200,000 G 125,000 G 330,000 G 655,000 G CAPACITY 175 C 477 C 396 C 1,214 C	allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allons allons allons allons onnections onnections onnections		228 Ac 609 Ac 36 Ac	rre Feet/Year rre Feet/Year rre Feet/Year	
40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56	Well #1 Well #2 Well #2 BRWCD Connection on 14400 North Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING STORAGE CAPACITY North Tank Old South Tank Old South Tank New South Tank Total Storage ADDITIONAL CONNECTIONS SERVICEABLE WITH EXISTING # based on Peak Day Physical Source Capacity # based on Annual Physical Source Capacity # based on Annual Water Rights Capacity # based on Storage Capacity # based on Sto	449 G 50 G 1.25 625 G 200,000 G 125,000 G 330,000 G 655,000 G CAPACITY 175 C 477 C 396 C 1,214 C	allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allons allons allons allons onnections onnections onnections		228 Ac 609 Ac 36 Ac	rre Feet/Year rre Feet/Year rre Feet/Year	

Line 2 & 3: # of Units in 2015 is based on average water use in 2014, 390 active connections and estimated 244 ERCs for large users. Average lawn size calculated to be about 0.013 ac/connection based on actual water usage in 2014.

Lines 5-18: Water Demands calculated based on Utah Division of Drinking Water Standards assuming Zone 4 for outside watering requirements.

Lines 24-35: When data was not available for either the annual limit (ac-ft/yr) or the maximum flow rate (cfs or gpm), the other value was obtained by a straight units conversion.

Tec	nnical data for Snowville						
	POPULATION AND IRRIGATED ACREAGE DATA:	2015	2020	2030	2040	2050	2060
	# Units in Service Area	130	129	151	177	208	270 CONNECTIONS
	# Acres of Outside Irrigation per Unit	0.05	0.05	0.05	0.05	0.05	0.05 ACRES/CONN.
4	Total # Acres of Outside Irrigation for the System	6.50	6.43	7.55	8.86	10.40	13.52 ACRES
5	SOURCE REQUIREMENTS						
6	Annual Indoor Usage = 146,000 Gal/Year/Connection	58	58	68	79	93	121 ACRE FEET
7	Annual Outdoor Usage = 1.87 Acre Feet/Irrigated Acre	12	12	14	17	19	25 ACRE FEET
8	Total Annual Usage	70	70	82	96	113	146 ACRE FEET
9		103,975	102,944	120,818	141,795	166,415	216,340 GAL/DAY
10		37,057	36,689	43,059	50,536	59,310	77,103 GAL/DAY
1		141,032	139,633	163,877	192,331	225,725	293,443 GAL/DAY
12		97.94	97	114	134	157	204 GPM
	STORAGE REQUIREMENTS	54.007	54 470	00,400	70.000	~~~~~	100 170 0411 0110
	Indoor Requirement = 400 Gal/Connection	51,987	51,472	60,409	70,898	83,208	108,170 GALLONS
	Outside Irrigation Requirement = 2,848 Gal/Irrigated Acre	18,508	18,324	21,506	25,240	29,622	38,508 GALLONS
	Fire Storage (500 gpm for 1/2 hour)	15,000	15,000	15,000	15,000	15,000	15,000 GALLONS
17		7,049	6,980	8,191	9,614	11,283	14,668 GALLONS
18		90,000	90,000	110,000	120,000	140,000	180,000 GALLONS
		0.15	0.15				000 001
	Peak Hour Indoor Demand = 10.8(N^.64); N = # Connections	243	242	268	297	329	389 GPM
	Peak Hour Outside Demand = 7.92 Gpm/Irrigated Acre	51	51	60	70	82	107 GPM
22		295	293	328	367	411	496 GPM
	ADDITIONAL SOURCE CAPACITY NEEDED	0.54410324	0.538706055	0.632241587	0.742017694	0.870854226	1.132110494
	Physical Source Capacity on Peak Day Basis	0	0	0	0	0	24 Gallon/Minute
	Physical Source Capacity on Annual Volume Basis	0	0	0	0	0	0 AcreFeet/Year
	Water Rights Source Capacity on Peak Day Basis	0			0		0 Gallon/Minute
	Water Rights Source Capacity on Annual Volume Basis	0	0	0	0	0	0 AcreFeet/Year
		0	0	0	0	0	0 Callana
29	Storage Capacity Needed	0	0	0	0	0	0 Gallons
29 30	Storage Capacity Needed EXISTING PHYSICAL SOURCE CAPACITY	nstantaneous Capa	city		nnual Volume Cap	pacity	0 Gallons
29 30 31	Storage Capacity Needed EXISTING PHYSICAL SOURCE CAPACITY Spring	nstantaneous Capa G	city allon/Minute		nnual Volume Cap	oacity Acre Feet/Year	0 Gallons
29 30 3 ² 32	Storage Capacity Needed EXISTING PHYSICAL SOURCE CAPACITY Spring Well #1, 2006 data	nstantaneous Capa G 225 G	city allon/Minute allon/Minute		nnual Volume Cap A 181 A	bacity Acre Feet/Year Acre Feet/Year	0 Gallons
29 30 3 ² 32 33	Storage Capacity Needed EXISTING PHYSICAL SOURCE CAPACITY Spring Well #1, 2006 data	nstantaneous Capa G 225 G	city allon/Minute		nnual Volume Cap A 181 A	oacity Acre Feet/Year	0 Gallons
29 30 31 32 32 34	Storage Capacity Needed EXISTING PHYSICAL SOURCE CAPACITY Spring Well #1, 2006 data	nstantaneous Capa G 225 G G	city allon/Minute allon/Minute allon/Minute		nnual Volume Cap A 181 A	bacity Acre Feet/Year Acre Feet/Year	0 Gallons
29 30 31 32 32 34 34	Storage Capacity Needed EXISTING PHYSICAL SOURCE CAPACITY Spring Well #1, 2006 data Total Peak Day Sources	nstantaneous Capa G 225 G G 225 G	city allon/Minute allon/Minute		nnual Volume Cap A 181 A	bacity Acre Feet/Year Acre Feet/Year	0 Gallons
29 30 31 32 32 34 34 34 34 34	Storage Capacity Needed EXISTING PHYSICAL SOURCE CAPACITY Spring Well #1, 2006 data Total Peak Day Sources Safety Factor	nstantaneous Capa G 225 G G 225 G 1.25	city allon/Minute allon/Minute allon/Minute allon/Minute		nnual Volume Cap / 181 <i>/</i> /	oacity Acre Feet/Year Acre Feet/Year Acre Feet/Year	0 Gallons
29 30 31 32 33 34 34 36 36 31	Storage Capacity Needed EXISTING PHYSICAL SOURCE CAPACITY Spring Well #1, 2006 data Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor	nstantaneous Capa G 225 G G 225 G 1.25	city allon/Minute allon/Minute allon/Minute		nnual Volume Cap / 181 <i>/</i> /	bacity Acre Feet/Year Acre Feet/Year	0 Gallons
29 30 31 32 32 34 34 35 36 37 35	Storage Capacity Needed EXISTING PHYSICAL SOURCE CAPACITY Spring Well #1, 2006 data Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY	nstantaneous Capa G 225 G 225 G 225 G 1.25 180 G	city allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute		nnual Volume Cap 4 181 / 7 181 / 181 /	acity Acre Feet/Year Acre Feet/Year Acre Feet/Year	0 Gallons
29 30 32 32 32 32 32 32 32 32 32 32 32 32 32	Storage Capacity Needed EXISTING PHYSICAL SOURCE CAPACITY Spring Well #1, 2006 data Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Spring	nstantaneous Capa G 225 G 225 G 225 G 1.25 180 G 20 G	city allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute		xnnual Volume Cap 4 181 / 7 181 / 181 / 33 /	acity Acre Feet/Year Acre Feet/Year Acre Feet/Year Acre Feet/Year	0 Gallons
29 30 31 32 34 35 36 35 36 36 36 36 36 36 36 36 36 36 36 36 36	Storage Capacity Needed EXISTING PHYSICAL SOURCE CAPACITY Spring Well #1, 2006 data Total Peak Day Sources Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Spring Well #1	nstantaneous Capa G 225 G 225 C 1.25 180 G 20 G 898 G	city allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute		unnual Volume Cap 181 / 181 / 181 / 181 / 181 / 33 / 474 /	bacity kore Feet/Year kore Feet/Year kore Feet/Year kore Feet/Year kore Feet/Year kore Feet/Year	0 Gallons
20 30 32 32 33 34 35 36 35 36 36 40 40	Storage Capacity Needed EXISTING PHYSICAL SOURCE CAPACITY Spring Well #1, 2006 data Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Spring Well #1	nstantaneous Capa G 225 G 225 C 1.25 180 G 20 G 898 G	city allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute		unnual Volume Cap 181 / 181 / 181 / 181 / 181 / 33 / 474 /	acity Acre Feet/Year Acre Feet/Year Acre Feet/Year Acre Feet/Year	0 Gallons
20 30 32 32 33 34 35 36 36 37 38 36 40 42	Storage Capacity Needed EXISTING PHYSICAL SOURCE CAPACITY Spring Well #1, 2006 data Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Spring Well #1	nstantaneous Capa G 225 G 225 G 1.25 180 G 20 G 898 G G	city allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute		unnual Volume Cap 181 / 181 / 181 / 181 / 181 / 33 / 474 /	bacity kore Feet/Year kore Feet/Year kore Feet/Year kore Feet/Year kore Feet/Year kore Feet/Year	0 Gallons
29 30 31 32 34 34 35 36 35 36 36 40 41 42 42	Storage Capacity Needed EXISTING PHYSICAL SOURCE CAPACITY Spring Well #1, 2006 data Total Peak Day Sources Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Spring Well #1 Total Peak Day Sources	nstantaneous Capa G 225 G 225 G 1.25 180 G 20 G 898 G G	city allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute		unnual Volume Cap 181 / 181 / 181 / 181 / 181 / 33 / 474 /	bacity kore Feet/Year kore Feet/Year kore Feet/Year kore Feet/Year kore Feet/Year kore Feet/Year	0 Gallons
29 30 31 32 34 36 36 36 36 40 41 42 42 44	Storage Capacity Needed EXISTING PHYSICAL SOURCE CAPACITY Spring Well #1, 2006 data Total Peak Day Sources Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Spring Well #1 Total Peak Day Sources Safety Factor	nstantaneous Capa G 225 G 1.25 180 G 20 G 898 G 918 G 1.25	city allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute		nnual Volume Cap 181 / 181 / 181 4 474 / 474 /	bacity kore Feet/Year kore Feet/Year kore Feet/Year kore Feet/Year kore Feet/Year kore Feet/Year kore Feet/Year	0 Gallons
29 30 31 32 33 34 36 35 36 36 36 36 36 40 41 42 42 44 44	Storage Capacity Needed EXISTING PHYSICAL SOURCE CAPACITY Spring Well #1, 2006 data Total Peak Day Sources Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Spring Well #1 Total Peak Day Sources	nstantaneous Capa G 225 G 1.25 180 G 20 G 898 G 918 G 1.25	city allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute		unnual Volume Cap 181 / 181 / 181 4 474 / 474 /	bacity kore Feet/Year kore Feet/Year kore Feet/Year kore Feet/Year kore Feet/Year kore Feet/Year	0 Gallons
29 30 31 32 33 34 36 35 36 36 36 36 36 40 41 42 42 44 44	Storage Capacity Needed EXISTING PHYSICAL SOURCE CAPACITY Spring Well #1, 2006 data Total Peak Day Sources Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Spring Well #1 Total Peak Day Sources Safety Factor Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING STORAGE CAPACITY	nstantaneous Capa G 225 G 1.25 180 G 20 G 898 G 918 G 1.25	city allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute		unnual Volume Cap 181 / 181 / 181 4 474 / 474 /	bacity kore Feet/Year kore Feet/Year kore Feet/Year kore Feet/Year kore Feet/Year kore Feet/Year kore Feet/Year	0 Gallons
29 30 32 33 34 35 36 37 38 39 40 41 42 42 44 44 44 44 44 44 44 44 44 44 44	Storage Capacity Needed EXISTING PHYSICAL SOURCE CAPACITY Spring Well #1, 2006 data Total Peak Day Sources Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Spring Well #1 Total Peak Day Sources Safety Factor Total Peak Day Sources Safety Factor EXISTING STORAGE CAPACITY Total Peak Day Sources Safety Factor EXISTING STORAGE CAPACITY Tank 1	nstantaneous Capa G 225 G 1.25 G 1.25 180 G 20 G 898 G 918 G 1.25 734 G 200,000 G	city allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute		unnual Volume Cap 181 / 181 / 181 4 474 / 474 /	bacity kore Feet/Year kore Feet/Year kore Feet/Year kore Feet/Year kore Feet/Year kore Feet/Year kore Feet/Year	0 Gallons
29 30 33 32 33 34 35 36 35 36 37 38 39 40 44 44 44 44 44 44 44 44 44	Storage Capacity Needed EXISTING PHYSICAL SOURCE CAPACITY Spring Well #1, 2006 data Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Spring Well #1 Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING STORAGE CAPACITY Tank 1 Tank 1 Tank 2	nstantaneous Capa G 225 G 225 G 1.25 180 G 20 G 898 G 898 G 918 G 1.25 734 G	city allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute		unnual Volume Cap 181 / 181 / 181 4 474 / 474 /	bacity kore Feet/Year kore Feet/Year kore Feet/Year kore Feet/Year kore Feet/Year kore Feet/Year kore Feet/Year	0 Gallons
29 33 33 33 33 34 35 36 35 36 35 36 36 36 37 38 39 40 41 42 44 44 44 44 44 44 44 44 44 44 44 44	Storage Capacity Needed EXISTING PHYSICAL SOURCE CAPACITY Spring Well #1, 2006 data Total Peak Day Sources Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Spring Well #1 Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING STORAGE CAPACITY Tank 1 Tank 2	nstantaneous Capa G 225 G 1.25 G 1.25 180 G 20 G 898 G 918 G 1.25 734 G 200,000 G	city allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute		unnual Volume Cap 181 / 181 / 181 4 474 / 474 /	bacity kore Feet/Year kore Feet/Year kore Feet/Year kore Feet/Year kore Feet/Year kore Feet/Year kore Feet/Year	0 Gallons
299 30 33 32 33 33 33 33 33 33 33 33 33 33 33	Storage Capacity Needed EXISTING PHYSICAL SOURCE CAPACITY Spring Well #1, 2006 data Total Peak Day Sources Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Spring Well #1 Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING STORAGE CAPACITY Tank 1 Tank 2	nstantaneous Capa G 225 G 1.25 G 1.25 180 G 200 G 898 G 918 G 1.25 734 G 200,000 G 220,000 G 420,000 G	city allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute		unnual Volume Cap 181 / 181 / 181 4 474 / 474 /	bacity kore Feet/Year kore Feet/Year kore Feet/Year kore Feet/Year kore Feet/Year kore Feet/Year kore Feet/Year	0 Gallons
29 30 31 32 33 34 35 36 35 36 35 36 35 36 40 44 42 42 42 44 44 45 55	Storage Capacity Needed EXISTING PHYSICAL SOURCE CAPACITY Spring Well #1, 2006 data Total Peak Day Sources Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Spring Well #1 Total Peak Day Sources Safety Factor Total Peak Day Sources safety Factor EXISTING STORAGE CAPACITY Tank 1 Tank 2 Total Storage	nstantaneous Capa G 225 G 1.25 180 G 20 G 898 G 1.25 734 G 200,000 G 220,000 420,000 G 73PACITY	city allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute		unnual Volume Cap 181 / 181 / 181 4 474 / 474 /	bacity kore Feet/Year kore Feet/Year kore Feet/Year kore Feet/Year kore Feet/Year kore Feet/Year kore Feet/Year	0 Gallons
29 30 31 32 33 33 34 35 38 36 33 33 35 38 36 40 44 42 43 44 44 44 45 55 55 25	Storage Capacity Needed EXISTING PHYSICAL SOURCE CAPACITY Spring Well #1, 2006 data Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Spring Well #1 Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING STORAGE CAPACITY Tank 1 Tank 2 Total Storage ADDITIONAL CONNECTIONS SERVICEABLE WITH EXISTING CO	nstantaneous Capa G 225 G 1.25 G 1.25 180 G 20 G 898 G 918 G 1.25 734 G 200,000 G 220,000 G 220,000 G 420,000 G	city allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allons		unnual Volume Cap 181 / 181 / 181 4 474 / 474 /	bacity kore Feet/Year kore Feet/Year kore Feet/Year kore Feet/Year kore Feet/Year kore Feet/Year kore Feet/Year	0 Gallons
29 30 33 33 33 33 33 33 33 33 33 33 33 33	Storage Capacity Needed EXISTING PHYSICAL SOURCE CAPACITY Spring Well #1, 2006 data Total Peak Day Sources Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Spring Well #1 Total Peak Day Sources Safety Factor Total Peak Day Sources Safety Factor EXISTING STORAGE CAPACITY Tank 1 Tank 2 Total Storage ADDITIONAL CONNECTIONS SERVICEABLE WITH EXISTING C # based on Peak Day Physical Source Capacity	nstantaneous Capa G 225 G 1.25 G 1.25 180 G 20 G 898 G 1.25 734 G 200,000 G 220,000 420,000 G 420,000 G 420,000 G 220,000 G 220,000 G 220,000 G 220,000 G 220,000 G 220,000 G 220,000 G 220,000 G	city allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allons allons allons		unnual Volume Cap 181 / 181 / 181 4 474 / 474 /	bacity kore Feet/Year kore Feet/Year kore Feet/Year kore Feet/Year kore Feet/Year kore Feet/Year kore Feet/Year	0 Gallons
$\begin{array}{c} 29\\ 30\\ 3\\ 3\\ 3\\ 3\\ 3\\ 3\\ 3\\ 3\\ 3\\ 3\\ 3\\ 3\\ 3\\$	Storage Capacity Needed EXISTING PHYSICAL SOURCE CAPACITY Spring Well #1, 2006 data Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Spring Well #1 Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING STORAGE CAPACITY Tank 1 Tank 2 Total Storage ADDITIONAL CONNECTIONS SERVICEABLE WITH EXISTING C # based on Peak Day Physical Source Capacity	nstantaneous Capa G 225 G 1.25 180 G 20 G 898 G 1.25 734 G 200,000 G 220,000 420,000 G 220,000 G 220,000 G 220,000 G 220,000 G 220,000 G 220,000 G 220,000 G 220,000 G 220,000 G 200 C 200 C 200 C	city allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allons allons allons		unnual Volume Cap 181 / 181 / 181 4 474 / 474 /	bacity kore Feet/Year kore Feet/Year kore Feet/Year kore Feet/Year kore Feet/Year kore Feet/Year kore Feet/Year	0 Gallons
$\begin{array}{c} 29\\ 30\\ 33\\ 33\\ 33\\ 34\\ 35\\ 36\\ 35\\ 36\\ 40\\ 41\\ 42\\ 45\\ 44\\ 45\\ 55\\ 55\\ 55\\ 55\\ 55\\ 55\\ 55$	Storage Capacity Needed EXISTING PHYSICAL SOURCE CAPACITY Spring Well #1, 2006 data Total Peak Day Sources Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Spring Well #1 Total Peak Day Sources Safety Factor Total Peak Day Sources Safety Factor EXISTING STORAGE CAPACITY Tank 1 Tank 2 Total Storage ADDITIONAL CONNECTIONS SERVICEABLE WITH EXISTING C # based on Annual Physical Source Capacity # based on Annual Physical Source Capacity # based on Peak Day Water Rights Capacity	nstantaneous Capa G 225 G 1.25 G 1.25 180 G 206 6 898 G 918 G 1.25 734 G 200,000 G 220,000 G 220,000 G 420,000 G 420,000 G 6APACITY 109 C 205 C 844 C	city allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allons allons allons		unnual Volume Cap 181 / 181 / 181 4 474 / 474 /	bacity kore Feet/Year kore Feet/Year kore Feet/Year kore Feet/Year kore Feet/Year kore Feet/Year kore Feet/Year	0 Gallons

Notes: Lines 5-18: Water Demands calculated based on Utah Division of Drinking Water Standards assuming Zone 4 for outside watering requirements. Lines 24-35: When data was not available for either the annual limit (ac-ft/yr) or the maximum flow rate (cfs or gpm), the other value was obtained by a straight units conversion. Lines 24-41: Existing source and storage data has been gathered from the following sources of information: interviews with the water agency, sanitary surveys, water rights information and Division of Drinking Water records.

POPULATION AND IRRIGATED ACREAGE DATA:	2015	2020	2030	2040	2050	2060
2 # Units in Service Area	450	472	614	798	1037	1348 CONNECTIO
3 # Acres of Outside Irrigation per Unit	0.00	0.00	0.00	0.00	0.00	0.00 ACRES/CON
Total # Acres of Outside Irrigation for the System	0.00	0.00	0.00	0.00	0.00	0.00 ACRES
SOURCE REQUIREMENTS						
Annual Indoor Usage = 146,000 Gal/Year/Connection	202	211	275	357	465	604 ACRE FEET
Annual Outdoor Usage = 1.87 Acre Feet/Irrigated Acre	0	0	0	0	0	0 ACRE FEET
B Total Annual Usage	202	211	275	357	465	604 ACRE FEET
9 Peak Day Indoor Demand = 800 Gal./Day/Connection	360,000	377,573	490,845	638,099	829,529	1,078,387 GAL/DAY
0 Peak Day Outdoor Demand = 3.96 Gpm/Irrigated Acre	0	0	0	0	0	0 GAL/DAY
1 Total Peak Day Demand	360,000	377,573	490,845	638,099	829,529	1,078,387 GAL/DAY
2 (Gallons per Minute)	250	262	341	443	576	749 GPM
	400.000	400 707	045 400	240.040	444 704	520 404 OALLONG
4 Indoor Requirement = 400 Gal/Connection	180,000 0	188,787	245,423 0	319,049 0	414,764	539,194 GALLONS
5 Outside Irrigation Requirement = 2,848 Gal/Irrigated Acre 6 Fire Storage (1,000 gpm for 1 hour)	60,000	60,000	60,000	60,000	60,000	0 GALLONS 60,000 GALLONS
7 Emergency Storage, 10%	18,000	18,879	24,542	31,905	41,476	53,919 GALLONS
8 Total Storage (Rounded)	260,000	270,000	330,000	410,000	520,000	650,000 GALLONS
DISTRIBUTION SYSTEM REQUIREMENTS	200,000	270,000	330,000	410,000	520,000	050,000 GALLONS
0 Peak Hour Indoor Demand = 10.8(N^.64); N = # Connections	539	556	657	777	919	1.087 GPM
1 Peak Hour Outside Demand = 7.92 Gpm/Irrigated Acre	0	0	007	0	0	0 GPM
2 Total Peak Hour Demand – 7.92 Ophi/ingated Acre	539	556	657	777	919	1,087 GPM
ADDITIONAL SOURCE CAPACITY NEEDED	0.673491379	0.706367793	0.91827813	1.193761569	1.55189004	2.017457052
4 Physical Source Capacity on Peak Day Basis	0.075451575	0.700307735	0.31027013	72	205	378 Gallon/Minut
5 Physical Source Capacity on Annual Volume Basis	0	Ő	Ő	34	141	281 AcreFeet/Yes
6	Ő	õ	Ő	0	0	0 Gallon/Minut
7 Water Rights Source Capacity on Annual Volume Basis	0	Ő	46	129	236	375 AcreFeet/Ye
ADDITIONAL STORAGE CAPACITY NEEDED						
9 Storage Capacity Needed	0	0	0	0	0	0 Gallons
EXISTING PHYSICAL SOURCE CAPACITY	nstantaneous Capa	acity	A	nnual Volume Capa	city	
1 Maple Grove Springs (min flow in 1996)	14 C	Gallon/Minute		16 Ac	re Feet/Year	
2 Well Next to 700,000 Gallon Tank		Gallon/Minute		282 Ac	re Feet/Year	
3 Undeveloped Well		Gallon/Minute			re Feet/Year	
4 Old Well on HWY 89		Gallon/Minute			re Feet/Year	
5 BRWCD Backup Connection on HWY 38	100 0	Sallon/Minute		25 Ac	re Feet/Year	
6						
7 Total Peak Day Sources		Sallon/Minute				
8 Safety Factor	1.25				E 10/	
9 Total Peak Day Sources with Safety Factor	371 0	Sallon/Minute		323 Ac	re Feet/Year	
	000 0	Gallon/Minute		206 4-	re Feet/Year	
1 Maple Grove Springs 2 Well Next to 700,000 Gallon Tank		Gallon/Minute			re Feet/Year re Feet/Year	
3 Undeveloped Well		Gallon/Minute			re Feet/Year re Feet/Year	
Old Well on HWY 89		Sallon/Minute			re Feet/Year re Feet/Year	
BRWCD Backup Connection on HWY 38		Sallon/Minute			re Feet/Year	
6	100 0	Danion/IVIIIIule		25 AC		
7 Total Peak Day Sources	1.090 0	Gallon/Minute				
Safety Factor	1,030 0	sano. ( minuto				
Total Peak Day Sources with Safety Factor		Gallon/Minute		229 Ac	re Feet/Year	
				220 / 10		
1 Tank 1	700,000 0	Gallons				
2 Tank 2	550,000 0	Gallons				
3						
4 Total Storage	1,250,000	Gallons				
5 ADDITIONAL CONNECTIONS SERVICEABLE WITH EXISTING C	APACITY					
6 # based on Peak Day Physical Source Capacity		Connections				
7 # hand an Annual Dhusiaal Causes Canasity	272 (	Connections				
7 # based on Annual Physical Source Capacity						
8 # based on Peak Day Water Rights Capacity	976 C	Connections				
	976 C 60 C	Connections Connections Connections				

Notes: Lines 2-18: South Willard has a secondary water system, so no public water supply is used for outside watering requirements. Lines 24-35: When data was not available for either the annual limit (ac-ft/yr) or the maximum flow rate (cfs or gpm), the other value was obtained by a straight units conversion. Lines 24-41: Existing source and storage data has been gathered from the following sources of information: interviews with the water agency, sanitary surveys, water rights information and Division of Drinking Water records.

Tech	inical data for Sunset Park						
1	POPULATION AND IRRIGATED ACREAGE DATA:	2015	2020	2030	2040	2050	2060
2	# Units in Service Area	15	16	19	22	26	34 CONNECTIONS
	# Acres of Outside Irrigation per Unit	0.20	0.20	0.20	0.20	0.20	0.20 ACRES/CONN.
4	Total # Acres of Outside Irrigation for the System	3.00	3.26	3.83	4.49	5.27	6.85 ACRES
5	SOURCE REQUIREMENTS						
6	Annual Indoor Usage = 146,000 Gal/Year/Connection	7	7	9	10	12	15 ACRE FEET
7	Annual Outdoor Usage = 1.87 Acre Feet/Irrigated Acre	6	6	7	8	10	13 ACRE FEET
8		12	13	16	18	22	28 ACRE FEET
	Peak Day Indoor Demand = 800 Gal./Day/Connection	12,000	13,042	15,306	17,964	21,083	27,408 GAL/DAY
10		17,107	18,592	21,821	25,609	30,056	39,073 GAL/DAY
11	Total Peak Day Demand	29,107	31,634	37,127	43,573	51,139	66,480 GAL/DAY
12		20.21	22	26	30	36	46 GPM
	STORAGE REQUIREMENTS						
	Indoor Requirement = 400 Gal/Connection	6,000	6,521	7,653	8,982	10,541	13,704 GALLONS
	Outside Irrigation Requirement = 2,848 Gal/Irrigated Acre	8,544	9,286	10,898	12,790	15,011	19,514 GALLONS
	Fire Storage (500 gpm for 1/2 hour)	15,000	15,000	15,000	15,000	15,000	15,000 GALLONS
	Emergency Storage, 10%	1,454	1,581	1,855	2,177	2,555	3,322 GALLONS
18		30,000	30,000	40,000	40,000	40,000	50,000 GALLONS
	DISTRIBUTION SYSTEM REQUIREMENTS						
	Peak Hour Indoor Demand = 10.8(N^.64); N = # Connections	61	64	71	79	88	104 GPM
	Peak Hour Outside Demand = 7.92 Gpm/Irrigated Acre	24	26	30	36	42	54 GPM
22		85	90	102	115	129	158 GPM
	ADDITIONAL SOURCE CAPACITY NEEDED	0.505333333	0.549203847	0.644562111	0.75647743	0.887824606	1.154171988
	Physical Source Capacity on Peak Day Basis	0	0	0	0	0	6 Gallon/Minute
25	Physical Source Capacity on Annual Volume Basis	0	0	0	0	0	0 AcreFeet/Year
	Water Rights Source Capacity on Peak Day Basis	0	0	0	0	0	10 Gallon/Minute
	Water Rights Source Capacity on Annual Volume Basis	0	0	0	0	0	6 AcreFeet/Year
	ADDITIONAL STORAGE CAPACITY NEEDEL	0	0	0	0	0	
	Storage Capacity Needed		-				0 Gallons
30		stantaneous Capa		A	nnual Volume Cap		
	Well	50 G	allon/Minute		40 A	cre Feet/Year	
32		50.0					
33		50 G 1.25	allon/Minute				
	Safety Factor		allon/Minute		10.4	cre Feet/Year	
30	Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY	40 6	alion/iviinute		40 A	cre Feet/Year	
	Well	45 C	allon/Minute		22 A	cre Feet/Year	
38		45 G	anon//wintute		23 A	CIG I CEL I CAI	
39		15 G	allon/Minute				
	Safety Factor	1.25	anon/wintate				
	Total Peak Day Sources with Safety Factor		allon/Minute		23 A	cre Feet/Year	
42	EXISTING STORAGE CAPACITY	00 0	anonyminato		2071	0.010001000	
43		100,000 G	allons				
44		100,000 0	dilotto				
45		100,000 G	allons				
46	ADDITIONAL CONNECTIONS SERVICEABLE WITH EXISTING C						
	# based on Peak Day Physical Source Capacity		onnections				
	# based on Annual Physical Source Capacity		onnections				
	# based on Peak Day Water Rights Capacity		onnections				
	# based on Annual Water Rights Capacity		onnections				
	# based on Storage Capacity		onnections				
Note	S:						

Lines 5-18: No data available for outside watering acreage. Estimated 0.20 acres of irrigated area average per home based on aerial photos. Lines 24-35: When data was not available for either the annual limit (ac-ft/yr) or the maximum flow rate (cfs or gpm), the other value was obtained by a straight units conversion. Lines 24-41: Existing source and storage data has been gathered from the following sources of information: interviews with the water agency, sanitary surveys, water rights information and Division of Drinking Water records.

	2015	2020	2030	2040	2050	2060
# Units in Service Area	259	277	325	381	448	582 CONNECTIO
# Acres of Outside Irrigation per Unit	0.17	0.17	0.17	0.17	0.17	0.17 ACRES/CON
Total # Acres of Outside Irrigation for the System	43.96	47.08	55.26	64.85	76.11	98.94 ACRES
SOURCE REQUIREMENTS						
Annual Indoor Usage = 146,000 Gal/Year/Connection	116	124	146	171	201	261 ACRE FEET
Annual Outdoor Usage = 1.87 Acre Feet/Irrigated Acre	82	88	103	121	142	185 ACRE FEET
Total Annual Usage		212	249	292	343	446 ACRE FEET
Peak Day Indoor Demand = 800 Gal./Day/Connection	206,892	221,556	260,024	305,173	358,160	465,608 GAL/DAY
Peak Day Outdoor Demand = 3.96 Gpm/Irrigated Acre	250,703	268,472	315,087	369,796	434,004	564,205 GAL/DAY
Total Peak Day Deman		490,028	575,112	674,968	792,163	1,029,812 GAL/DAY
(Gallons per Minute	) 317.77	340	399	469	550	715 GPM
STORAGE REQUIREMENTS						
Indoor Requirement = 400 Gal/Connection	103,446	110,778	130,012	152,586	179,080	232,804 GALLONS
Outside Irrigation Requirement = 2,848 Gal/Irrigated Acre	125,211	134,086	157,367	184,690	216,758	281,786 GALLONS
Fire Storage (500 gpm for 1/2 hour)	15,000	15,000	15,000	15,000	15,000	15,000 GALLONS
Emergency Storage, 10%	22,866	24,486	28,738	33,728	39,584	51,459 GALLONS
Total Storage (Rounded	) 270,000	280,000	330,000	390,000	450,000	580,000 GALLONS
DISTRIBUTION SYSTEM REQUIREMENTS	070	005	400	105	507	005 0014
Peak Hour Indoor Demand = 10.8(N^.64); N = # Connections	378	395	438	485	537	635 GPM
Peak Hour Outside Demand = 7.92 Gpm/Irrigated Acre Total Peak Hour Demand	348 1 726	373	438 875	514 998	603	784 GPM 1,419 GPM
		768			1,140	
ADDITIONAL SOURCE CAPACITY NEEDED Physical Source Capacity on Peak Day Basis	0.453963303 0	0.486139072 0	0.570547399 0	0.669611544 0	0.785876197 0	1.021639056 15 Gallon/Minute
	0	0	0	0	0	0 AcreFeet/Yea
Physical Source Capacity on Annual Volume Basis Water Rights Source Capacity on Peak Day Basis	0	0	0	0	0	0 Gallon/Minute
Water Rights Source Capacity on Annual Volume Basis	0	0	0	0	0	99 AcreFeet/Yea
ADDITIONAL STORAGE CAPACITY NEEDED	0	0	0	0	0	99 ACIEFEEL/TEA
Storage Capacity Needed	0	0	0	0	0	0 Gallons
EXISTING PHYSICAL SOURCE CAPACITY	Instantaneous Capad	-	-	nnual Volume Capa	-	0 Galions
North Well (new well)		allon/Minute	P		cre Feet/Year	
South Well		allon/Minute			cre Feet/Year	
BRWCD Backup Connection		allon/Minute			cre Feet/Year	
	10 0	anon/minute		1074	bie i cet i cai	
Total Peak Day Sources	875 G	allon/Minute				
Safety Factor	1.25					
Total Peak Day Sources with Safety Factor		allon/Minute		655 A	cre Feet/Year	
EXISTING WATER RIGHTS SOURCE CAPACITY						
North Well	898 G	allon/Minute		315 A	cre Feet/Year	
South Well	250 G	allon/Minute		22 Ao	cre Feet/Year	
BRWCD Backup Connection	75 G	allon/Minute		10 A	cre Feet/Year	
Total Peak Day Sources		allon/Minute				
Safety Factor	1.25					
Total Peak Day Sources with Safety Factor	978 G	allon/Minute		346 A	cre Feet/Year	
EXISTING STORAGE CAPACITY						
Tank - Upper	500,000 G					
Tank - Lower	250,000 G	allons				
	750 000 0					
		alions				
Total Storage						
ADDITIONAL CONNECTIONS SERVICEABLE WITH EXISTING		onnections				
ADDITIONAL CONNECTIONS SERVICEABLE WITH EXISTING # based on Peak Day Physical Source Capacity						
ADDITIONAL CONNECTIONS SERVICEABLE WITH EXISTING # based on Peak Day Physical Source Capacity # based on Annual Physical Source Capacity	597 Co	onnections			l l	
ADDITIONAL CONNECTIONS SERVICEABLE WITH EXISTING # based on Peak Day Physical Source Capacity # based on Annual Physical Source Capacity # based on Peak Day Water Rights Capacity	597 Co 537 Co	onnections				
ADDITIONAL CONNECTIONS SERVICEABLE WITH EXISTING # based on Peak Day Physical Source Capacity # based on Annual Physical Source Capacity	597 Cc 537 Cc 194 Cc					

hnical data for Tremonton City				aa / - 1			
POPULATION AND IRRIGATED ACREAGE DATA:	2015	2020	2030	2040	2050	2060	
2 # Residential Units in Service Area	2506	2684	3150	4094	5323		CONNECTION
3 # Acres of Outside Irrigation per Unit	0.15	0.15	0.15	0.15	0.15		ACRES/CONN
4 Total # Acres of Outside Irrigation for the System	375.90	402.54	472.44	614.17	798.42	1037.94	ACRES
5 SOURCE REQUIREMENTS							
6 Annual Indoor Usage = 146,000 Gal/Year/Connection	1,123	1,202	1,411	1,835	2,385		ACRE FEET
Annual Outdoor Usage = 1.87 Acre Feet/Irrigated Acre	703	753	883	1,148	1,493		ACRE FEET
B Total Annual Usage	1,826	1,955	2,295	2,983	3,878		ACRE FEET
Peak Day Indoor Demand = 800 Gal./Day/Connection	2,004,800	2,146,895	2,519,661	3,275,559	4,258,226		GAL/DAY
Peak Day Outdoor Demand = 3.96 Gpm/Irrigated Acre	2,143,532	2,295,460	2,694,021	3,502,227	4,552,896		GAL/DAY
Total Peak Day Demand	4,148,332	4,442,355	5,213,682	6,777,786	8,811,122	11,454,459	
2 (Gallons per Minute)	2880.79	3,085	3,621	4,707	6,119	7,954	GPM
STORAGE REQUIREMENTS							
Indoor Requirement = 400 Gal/Connection	1,002,400	1,073,448	1,259,830	1,637,779	2,129,113		GALLONS
5 Outside Irrigation Requirement = 2,848 Gal/Irrigated Acre	1,070,563	1,146,442	1,345,499	1,749,148	2,273,893		GALLONS
Fire Storage (500 gpm for 1/2 hour)	15,000	15,000	15,000	15,000	15,000		GALLONS
7 Emergency Storage, 10%	207,296	221,989	260,533	338,693	440,301		GALLONS
Total Storage (Rounded)	2,300,000	2,460,000	2,880,000	3,740,000	4,860,000	6,310,000	GALLONS
DISTRIBUTION SYSTEM REQUIREMENTS							
Peak Hour Indoor Demand = 10.8(N^.64); N = # Connections	1,617	1,690	1,872	2,214	2,619		GPM
Peak Hour Outside Demand = 7.92 Gpm/Irrigated Acre	2,977	3,188	3,742	4,864	6,323	8,221	
2 Total Peak Hour Demand	4,594	4,878	5,614	7,078	8,943	11,318	
ADDITIONAL SOURCE CAPACITY NEEDED	1.051715605	1.126258544	1.321810815	1.71835406	2.233860278	2.904018362	
Physical Source Capacity on Peak Day Basis	2.881	3.085	3,621	4,707	6,119	7.954	Gallon/Minute
Physical Source Capacity on Annual Volume Basis	1,676	1,805	2,145	2,833	3,728	4.892	AcreFeet/Year
Water Rights Source Capacity on Peak Day Basis	0	0	0	_,0	845		Gallon/Minute
Water Rights Source Capacity on Annual Volume Basis	0	0	0	0	0		AcreFeet/Year
ADDITIONAL STORAGE CAPACITY NEEDED	0	•					/10/01/000//000
9 Storage Capacity Needed	2,300,000	2,460,000	2,880,000	3.740.000	4.860.000	6,310,000	Gallons
3 - 1 - 2	Instantaneous Capa	1		nual Volume Cap	10 0 0 1 0 0 0	0,010,000	Gallonio
1 West Spring		allon/Minute	74		cre Feet/Year		
2 East Spring		allon/Minute			cre Feet/Year		
3 Fish Spring		allon/Minute			cre Feet/Year		
4 Garland Overflow		allon/Minute			cre Feet/Year		
5 North Spring		allon/Minute			cre Feet/Year		
6 North Flowing Wells		allon/Minute			cre Feet/Year		
7 Gardner Spring		allon/Minute			cre Feet/Year		
BRWCD UDOT Connection		allon/Minute			cre Feet/Year		
9 BRWCD Bypass #2 Connection		allon/Minute			cre Feet/Year		
)	0 G	allon/minute		U A	cie reel/real		
	2 150 0	allon/Minute					
		allon/iviiriute					
2 Safety Factor	1.15	- II /h /l· · · h		4 570 4	<b>F</b> +0/		
3 Total Peak Day Sources with Safety Factor 4 EXISTING WATER RIGHTS SOURCE CAPACITY	2,739 G	allon/Minute		1,576 A	cre Feet/Year		
	5 074 0	- II /h film h		0.500.4	<b>F</b> +0/		
5 Fish & Gardner Spgs - 29-1107, 2956 6 Garland Overflow - 29-1370		allon/Minute allon/Minute			cre Feet/Year cre Feet/Year		
7 North Springs - 29-1141, 2520		allon/Minute			cre Feet/Year		
B East, South, & West Spgs - 29-1022, 1104, 1289		allon/Minute			cre Feet/Year		
9 BRWCD UDOT Connection		allon/Minute			cre Feet/Year		
D BRWCD Bypass #2 Connection	0 G	allon/Minute		0 A	cre Feet/Year		
1							
2							
3 Total Peak Day Sources		allon/Minute					
4 Safety Factor	1.15						
5 Total Peak Day Sources with Safety Factor	5,108 G	allon/Minute		8,658 A	cre Feet/Year		
EXISTING STORAGE CAPACITY							
7 7 Tanks	5,190,000 G	allons					
3							
	5,190,000 G	allons					
9 Total Storage							
Total Storage     ADDITIONAL CONNECTIONS SERVICEABLE WITH EXISTING	CAPACITY						
		onnections					
ADDITIONAL CONNECTIONS SERVICEABLE WITH EXISTING	-123 C	onnections onnections					
ADDITIONAL CONNECTIONS SERVICEABLE WITH EXISTING	-123 C -343 C						
ADDITIONAL CONNECTIONS SERVICEABLE WITH EXISTING 1 # based on Peak Day Physical Source Capacity 2 # based on Annual Physical Source Capacity	-123 C -343 C 1,938 C	onnections					

Notes:

Line 3: Adjusted to match annual average water use in 2005 Lines 6-21: Water Demands calculated based on Utah Division of Drinking Water Standards assuming Zone 4 for outside watering requirements. Lines 33-46: When data was not available for either the annual limit (ac-ft/yr) or the maximum flow rate (cfs or gpm), the other value was obtained by a straight units conversion.

nical data for Ukon POPULATION AND IRRIGATED ACREAGE DATA:	2015	2020	2030	2040	2050	2060
# Units in Service Area	384	2020	455	534	2050	902 CONNECTIO
# Acres of Outside Irrigation per Unit	0.00	0.00	455	0.00	0.00	0.00 ACRES/CON
Total # Acres of Outside Irrigation per Unit	0.00	0.00	0.00	0.00	0.00	0.00 ACRES/COM
	0.00	0.00	0.00	0.00	0.00	0.00 ACRES
SOURCE REQUIREMENTS						
Annual Indoor Usage = 146,000 Gal/Year/Connection	172	174	204	239	311	404 ACRE FEET
Annual Outdoor Usage = 1.87 Acre Feet/Irrigated Acre	0	0	0	0	0	0 ACRE FEET
Total Annual Usage	172	174	204	239	311	404 ACRE FEET
Peak Day Indoor Demand = 800 Gal./Day/Connection	307,200	310,080	363,919	427,106 0	555,238	721,810 GAL/DAY
Peak Day Outdoor Demand = 3.96 Gpm/Irrigated Acre	0	0	0	0	0	0 GAL/DAY
Total Peak Day Demand (Gallons per Minute)	307,200	310,080	363,919	427,106 297	555,238	721,810 GAL/DAY
	213	215	253	297	386	501 GPM
STORAGE REQUIREMENTS	452.000	455.040	404.000	040 550	077.040	200 005 0411 010
Indoor Requirement = 400 Gal/Connection	153,600	155,040	181,960	213,553	277,619	360,905 GALLONS
Outside Irrigation Requirement = 2,848 Gal/Irrigated Acre	0	0	0	0	0	0 GALLONS
Fire Storage (500 gpm for 1/2 hour) Emergency Storage, 10%	15,000	15,000 15,504	15,000	15,000 21,355	15,000 27,762	15,000 GALLONS
	15,360		18,196			36,090 GALLONS
Total Storage (Rounded)	180,000	190,000	220,000	250,000	320,000	410,000 GALLONS
DISTRIBUTION SYSTEM REQUIREMENTS		100	<b></b>			044.000
Peak Hour Indoor Demand = 10.8(N^.64); N = # Connections	487	490	543	601	711	841 GPM
Peak Hour Outside Demand = 7.92 Gpm/Irrigated Acre	0	0	0	0	0	0 GPM
Total Peak Hour Demand	487	490	543	601	711	841 GPM
ADDITIONAL SOURCE CAPACITY NEEDED	0.818221799	0.825892629	0.969292366	1.137590599	1.478867779	1.922528113
Physical Source Capacity on Peak Day Basis	0	0	0	36	125	241 Gallon/Minu
Physical Source Capacity on Annual Volume Basis	0	0	0	0	0	61 AcreFeet/Ye
Water Rights Source Capacity on Peak Day Basis	0	0	0	0	0	0 Gallon/Minu
Water Rights Source Capacity on Annual Volume Basis	0	0	0	0	0	55 AcreFeet/Ye
ADDITIONAL STORAGE CAPACITY NEEDED						
Storage Capacity Needed	0	0	0	0	40,000	130,000 Gallons
	Instantaneous Capa		A	nnual Volume Capa		
Upper Springs (min July flow, 2015)		allon/Minute			re Feet/Year	
Old Ukon Springs (min flow, 2015 & 2016)		allon/Minute			re Feet/Year	
Ukon Well (combined discharge pipeline w/ Ukon Springs)		allon/Minute			re Feet/Year	
BRWCD Collinston Wholesale Connection		allon/Minute			re Feet/Year	
BRWCD M&I Wholesale Connection from Booster Station	50 G	allon/Minute		40 Ac	re Feet/Year	
Total Peak Day Sources		allon/Minute				
Safety Factor	1.25					
Total Peak Day Sources with Safety Factor	261 G	allon/Minute		343 Ac	re Feet/Year	
EXISTING WATER RIGHTS SOURCE CAPACITY						
	_			. –		
Upper Springs (min flow, 2015)		allon/Minute			re Feet/Year	
Old Ukon Springs (min flow, 2015 & 2016)	(incl.) G	allon/Minute		(incl.) Ac	re Feet/Year	
Old Ukon Springs (min flow, 2015 & 2016) Ukon Well (combined discharge pipeline w/ Ukon Springs)	(incl.) G 63 G	allon/Minute Sallon/Minute		(incl.) Ac 94 Ac	re Feet/Year re Feet/Year	
Old Ukon Springs (min flow, 2015 & 2016) Ukon Well (combined discharge pipeline w/ Ukon Springs) BRWCD Collinston Wholesale Connection	(incl.) G 63 G 150 G	Sallon/Minute Sallon/Minute Sallon/Minute		(incl.) Ac 94 Ac 85 Ac	re Feet/Year re Feet/Year re Feet/Year	
Old Ukon Springs (min flow, 2015 & 2016) Ukon Well (combined discharge pipeline w/ Ukon Springs) BRWCD Collinston Wholesale Connection BRWCD M&I Wholesale Connection from Booster Station	(incl.) G 63 G 150 G	allon/Minute Sallon/Minute		(incl.) Ac 94 Ac 85 Ac	re Feet/Year re Feet/Year	
Old Ukon Springs (min flow, 2015 & 2016) Ukon Well (combined discharge pipeline w/ Ukon Springs) BRWCD Collinston Wholesale Connection BRWCD M&I Wholesale Connection from Booster Station	(incl.) G 63 G 150 G 50 G	Sallon/Minute Sallon/Minute Sallon/Minute Sallon/Minute		(incl.) Ac 94 Ac 85 Ac	re Feet/Year re Feet/Year re Feet/Year	
Old Ukon Springs (min flow, 2015 & 2016) Ukon Well (combined discharge pipeline w/ Ukon Springs) BRWCD Collinston Wholesale Connection BRWCD M&I Wholesale Connection from Booster Station Total Peak Day Sources	(incl.) G 63 G 150 G 50 G 778 G	Sallon/Minute Sallon/Minute Sallon/Minute		(incl.) Ac 94 Ac 85 Ac	re Feet/Year re Feet/Year re Feet/Year	
Old Ukon Springs (min flow, 2015 & 2016) Ukon Well (combined discharge pipeline w/ Ukon Springs) BRWCD Collinston Wholesale Connection BRWCD M&I Wholesale Connection from Booster Station Total Peak Day Sources Safety Factor	(incl.) G 63 G 150 G 50 G 778 G 1.25	Sallon/Minute Sallon/Minute Sallon/Minute Sallon/Minute Sallon/Minute		(incl.) Ac 94 Ac 85 Ac 0 Ac	re Feet/Year re Feet/Year re Feet/Year re Feet/Year	
Old Ukon Springs (min flow, 2015 & 2016) Ukon Well (combined discharge pipeline w/ Ukon Springs) BRWCD Collinston Wholesale Connection BRWCD M&I Wholesale Connection from Booster Station Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor	(incl.) G 63 G 150 G 50 G 778 G 1.25	Sallon/Minute Sallon/Minute Sallon/Minute Sallon/Minute		(incl.) Ac 94 Ac 85 Ac 0 Ac	re Feet/Year re Feet/Year re Feet/Year	
Old Ukon Springs (min flow, 2015 & 2016) Ukon Well (combined discharge pipeline w/ Ukon Springs) BRWCD Collinston Wholesale Connection BRWCD M&I Wholesale Connection from Booster Station Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING STORAGE CAPACITY	(incl.) G 63 G 150 G 50 G 778 G 1.25 622 G	Sallon/Minute Sallon/Minute Sallon/Minute Sallon/Minute Sallon/Minute		(incl.) Ac 94 Ac 85 Ac 0 Ac	re Feet/Year re Feet/Year re Feet/Year re Feet/Year	
Old Ukon Springs (min flow, 2015 & 2016) Ukon Well (combined discharge pipeline w/ Ukon Springs) BRWCD Collinston Wholesale Connection BRWCD M&I Wholesale Connection from Booster Station Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING STORAGE CAPACITY New Storage Tank	(incl.) G 63 G 150 G 750 G 778 G 1.25 622 G 200,000 G	Sallon/Minute Sallon/Minute Sallon/Minute Sallon/Minute Sallon/Minute Sallon/Minute		(incl.) Ac 94 Ac 85 Ac 0 Ac	re Feet/Year re Feet/Year re Feet/Year re Feet/Year	
Old Ukon Springs (min flow, 2015 & 2016) Ukon Well (combined discharge pipeline w/ Ukon Springs) BRWCD Collinston Wholesale Connection BRWCD M&I Wholesale Connection from Booster Station Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor <b>EXISTING STORAGE CAPACITY</b> New Storage Tank Old Storage Tank	(incl.) G 63 G 150 G 50 G 778 G 1.25 622 G	Sallon/Minute Sallon/Minute Sallon/Minute Sallon/Minute Sallon/Minute Sallon/Minute		(incl.) Ac 94 Ac 85 Ac 0 Ac	re Feet/Year re Feet/Year re Feet/Year re Feet/Year	
Old Ukon Springs (min flow, 2015 & 2016) Ukon Well (combined discharge pipeline w/ Ukon Springs) BRWCD Collinston Wholesale Connection BRWCD M&I Wholesale Connection from Booster Station Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor <b>Existing STORAGE CAPACITY</b> New Storage Tank Old Storage Tank	(incl.) G G3 G 50 G 50 G 1.25 622 G 200,000 G 80,000 G	sallon/Minute sallon/Minute sallon/Minute sallon/Minute sallon/Minute sallon/Minute sallons sallons	_	(incl.) Ac 94 Ac 85 Ac 0 Ac	re Feet/Year re Feet/Year re Feet/Year re Feet/Year	
Old Ukon Springs (min flow, 2015 & 2016) Ukon Well (combined discharge pipeline w/ Ukon Springs) BRWCD Collinston Wholesale Connection BRWCD M&I Wholesale Connection from Booster Station Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING STORAGE CAPACITY New Storage Tank Old Storage Tank Total Storage	(incl.) G 63 C 150 C 778 C 1.25 622 C 200,000 C 80,000 C 280,000 C	sallon/Minute sallon/Minute sallon/Minute sallon/Minute sallon/Minute sallon/Minute sallons sallons		(incl.) Ac 94 Ac 85 Ac 0 Ac	re Feet/Year re Feet/Year re Feet/Year re Feet/Year	
Old Ukon Springs (min flow, 2015 & 2016) Ukon Well (combined discharge pipeline w/ Ukon Springs) BRWCD Ollinston Wholesale Connection BRWCD M&I Wholesale Connection from Booster Station Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING STORAGE CAPACITY New Storage Tank Old Storage Tank Total Storage ADDITIONAL CONNECTIONS SERVICEABLE WITH EXISTING of	(incl.) G 63 G 50 G 778 G 1.25 622 G 200,000 G 280,000 G 280,000 G 280,000 G	allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allons allons allons		(incl.) Ac 94 Ac 85 Ac 0 Ac	re Feet/Year re Feet/Year re Feet/Year re Feet/Year	
Old Ukon Springs (min flow, 2015 & 2016) Ukon Well (combined discharge pipeline w/ Ukon Springs) BRWCD Collinston Wholesale Connection BRWCD M&I Wholesale Connection from Booster Station Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor <b>EXISTING STORAGE CAPACITY</b> New Storage Tank Old Storage Tank Total Storage ADDITIONAL CONNECTIONS SERVICEABLE WITH EXISTING ( # based on Peak Day Physical Source Capacity	(incl.) G G3 G 50 G 50 G 1.25 622 G 200,000 G 80,000 G 280,000 G 280,000 G 280,000 G	allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allons allons allons allons allons		(incl.) Ac 94 Ac 85 Ac 0 Ac	re Feet/Year re Feet/Year re Feet/Year re Feet/Year	
Old Ukon Springs (min flow, 2015 & 2016) Ukon Well (combined discharge pipeline w/ Ukon Springs) BRWCD Collinston Wholesale Connection BRWCD M&I Wholesale Connection from Booster Station Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor <b>Existing STORAGE CAPACITY</b> New Storage Tank Old Storage Tank Old Storage Tank Total Storage <b>ADDITIONAL CONNECTIONS SERVICEABLE WITH EXISTING (</b> # based on Annual Physical Source Capacity	(incl.) G G3 G 50 G 50 G 1.25 622 G 200,000 G 80,000 G 280,000 G 280,000 G 280,000 G	allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allons allons allons		(incl.) Ac 94 Ac 85 Ac 0 Ac	re Feet/Year re Feet/Year re Feet/Year re Feet/Year	
Old Ukon Springs (min flow, 2015 & 2016) Ukon Well (combined discharge pipeline w/ Ukon Springs) BRWCD Collinston Wholesale Connection BRWCD M&I Wholesale Connection from Booster Station Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor <b>EXISTING STORAGE CAPACITY</b> New Storage Tank Old Storage Tank Old Storage Tank <b>Total Storage</b> <b>ADDITIONAL CONNECTIONS SERVICEABLE WITH EXISTING G</b> # based on Peak Day Physical Source Capacity # based on Peak Day Water Rights Capacity	(incl.) G 63 G 50 G 1.25 622 G 200,000 G 280,000 G 280,0000 G 280,0000 G 280,000 G 280,000 G 280,000 G 280	allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allons allons allons allons allons connections connections connections		(incl.) Ac 94 Ac 85 Ac 0 Ac	re Feet/Year re Feet/Year re Feet/Year re Feet/Year	
Old Ukon Springs (min flow, 2015 & 2016) Ukon Well (combined discharge pipeline w/ Ukon Springs) BRWCD Collinston Wholesale Connection BRWCD M&I Wholesale Connection from Booster Station Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor <b>Existing STORAGE CAPACITY</b> New Storage Tank Old Storage Tank Old Storage Tank Total Storage <b>ADDITIONAL CONNECTIONS SERVICEABLE WITH EXISTING (</b> # based on Annual Physical Source Capacity	(incl.) G G3 C 150 C 1.25 622 C 200,000 C 80,000 C 280,000 C 280,000 C 280,000 C 280,000 C 382 C 382 C 382 C 385 C	aallon/Minute aallon/Minute aallon/Minute aallon/Minute aallon/Minute aallon/Minute aallons aallons aallons aallons connections connections		(incl.) Ac 94 Ac 85 Ac 0 Ac	re Feet/Year re Feet/Year re Feet/Year re Feet/Year	

Line 2: Data available from 1980-2015.

Line 34: Watered water sales from 2012 to 2014 indicate average water use per connection is about 0.34 af/yr. Most homes have access to secondary water sources. Since this value is below Utah DDW standards, it is assumed that essentially zero outside irrigation is occuring. Estimated annual use per connection is assumed to be DDW standard. Line 35: 18: Water Demands calculated based on Utah Division of Diriking Water Standards assuming Zone 4 for outside watering requirements. Line 33: The UKON Well flow capacity is 60 gpm, however, when combined with the springs flowing the 2016 flow limit for the well is only 35 gpm due to restriction in the flow pipeline. Line 34: UKON took a peak flow of about 77 gpm in July 2016 through the blending station meter. For 2016 through 2020 a total of 100 gpm will be available. Line 24:35: When data was not available for either the annual limit (ac-ft/yr) or the maximum flow rate (cfs or gpm), the other value was obtained by a straight units conversion.

Tecl	inical data for West Corinne Water Company						
	POPULATION AND IRRIGATED ACREAGE DATA:	2015	2020	2030	2040	2050	2060
2	# Units in Service Area	619	662	777	912	1186	1542 CONNECTIONS
3	# Acres of Outside Irrigation per Unit	0.14	0.14	0.14	0.14	0.14	0.14 ACRES/CONN.
4	Total # Acres of Outside Irrigation for the System	86.66	92.71	108.81	127.70	166.01	215.81 ACRES
5	SOURCE REQUIREMENTS						
e		277	297	348	409	531	691 ACRE FEET
7	Annual Outdoor Usage = 1.87 Acre Feet/Irrigated Acre	162	173	203	239	310	404 ACRE FEET
8	Total Annual Usage	439	470	552	648	842	1,094 ACRE FEET
	Peak Day Indoor Demand = 800 Gal./Day/Connection	495,200	529,771	621,755	729,711	948,624	1,233,211 GAL/DAY
	Peak Day Outdoor Demand = 3.96 Gpm/Irrigated Acre	494,170	528,669	620,462	728,193	946,651	1,230,646 GAL/DAY
11	Total Peak Day Demand	989,370	1,058,440	1,242,217	1,457,903	1,895,274	2,463,857 GAL/DAY
12		687.06	735	863	1,012	1,316	1,711 GPM
	STORAGE REQUIREMENTS						
	Indoor Requirement = 400 Gal/Connection	247,600	264,886	310,878	364,855	474,312	616,605 GALLONS
	Outside Irrigation Requirement = 2,848 Gal/Irrigated Acre	246,808	264,038	309,883	363,688	472,794	614,632 GALLONS
	Fire Storage (500 gpm for 1 hour)	15,000	15,000	15,000	15,000	15,000	15,000 GALLONS
17		49,441	52,892	62,076	72,854	94,711	123,124 GALLONS
18		560,000	600,000	700,000	820,000	1,060,000	1,370,000 GALLONS
19		001	000	70.1	0.17	4.000	1 405 ODM
	Peak Hour Indoor Demand = 10.8(N^.64); N = # Connections	661 686	690 734	764 862	847	1,002	1,185 GPM
21 22		686 1.347	734 1.424	862 1.626	1,011	1,315	1,709 GPM
		1.		1	1,858	2,317	2,894 GPM
23		0.792137135	0.847438138 0	0.994578821 0	1.167267542	1.517447805 449	1.972682146 844 Gallon/Minute
	Physical Source Capacity on Peak Day Basis	0	0	0	145 0	449	112 AcreFeet/Year
	Physical Source Capacity on Annual Volume Basis Water Rights Source Capacity on Peak Day Basis	0	0	0	0	0	0 Gallon/Minute
	Water Rights Source Capacity on Annual Volume Basis	0	0	0	0	0	0 AcreFeet/Year
	ADDITIONAL STORAGE CAPACITY NEEDEL	0	0	0	0	0	0 AcreFeet/Tear
29		0	0	0	0	0	0 Gallons
		stantaneous Capa		-	nnual Volume Cap		0 Galions
	Baker Springs (min flow in 1992)		allon/Minute			cre Feet/Year	
	Anderson Well		allon/Minute			cre Feet/Year	
	BRWCD Backup Connection		allon/Minute			cre Feet/Year	
34	Branob Bashap Connocation	00 0	anonyminato		1071		
35	Total Peak Day Sources	1.084 G	allon/Minute				
	Safety Factor	1.25					
37	Total Peak Day Sources with Safety Factor	867 G	allon/Minute		982 A	cre Feet/Year	
38							
39	Baker Springs	583 G	allon/Minute		463 A	cre Feet/Year	
	Anderson Well		allon/Minute			cre Feet/Year	
41	BRWCD Backup Connection	0 G	allon/Minute		0 A	cre Feet/Year	
42							
43			allon/Minute				
44		1.25					
45		1,723 G	allon/Minute		2,997 A	cre Feet/Year	
		405 000 0					
47		125,000 G					
48		200,000 G					
49		500,000 G 1,000,000 G					
51		1,000,000 G	alions				
52	Total Storage	1,825,000 G	allons				
	ADDITIONAL CONNECTIONS SERVICEABLE WITH EXISTING C		unorio				
	# based on Peak Day Physical Source Capacity		onnections				
	# based on Peak Day Physical Source Capacity # based on Annual Physical Source Capacity		onnections				
	# based on Peak Day Water Rights Capacity		onnections				
	# based on Annual Water Rights Capacity		onnections				
	# based on Storage Capacity		onnections				
50							

Lines 3 - 22: Outdoor irrigation was estimated to match total water use in 2015 by 619 connections. Lines 5-18: Water Demands calculated based on Utah Division of Drinking Water Standards assuming Zone 4 for outside watering requirements. Lines 24-35: When data was not available for either the annual limit (ac-ft/yr) or the maximum flow rate (cfs or gpm), the other value was obtained by a straight units conversion. Lines 24-41: Existing source and storage data has been gathered from the following sources of information: interviews with the water agency, sanitary surveys, water rights information and Division

lecr	inical data for Willard City						
1	POPULATION AND IRRIGATED ACREAGE DATA:	2015	2020	2030	2040	2050	2060
	# Units in Service Area	652	684	889	1156	1502	1953 CONNECTIONS
3	# Acres of Outside Irrigation per Unit	0.13	0.13	0.13	0.13	0.13	0.13 ACRES/CONN.
4	·	86.72	90.94	118.22	153.69	199.80	259.74 ACRES
	SOURCE REQUIREMENTS						
	Annual Indoor Usage = 146,000 Gal/Year/Connection	292	306	398	518	673	875 ACRE FEET
7	Annual Outdoor Usage = 1.87 Acre Feet/Irrigated Acre	162	170	221	287	374	486 ACRE FEET
8	Total Annual Usage	454	476	619	805	1,047	1,361 ACRE FEET
9	Peak Day Indoor Demand = 800 Gal./Day/Connection	521,600	547,019	711,125	924,462	1,201,800	1,562,341 GAL/DAY
10	Peak Day Outdoor Demand = 3.96 Gpm/Irrigated Acre	494,489	518,587	674,163	876,412	1,139,336	1,481,136 GAL/DAY
11	Total Peak Day Demand	1,016,089	1,065,606	1,385,288	1,800,874	2,341,136	3,043,477 GAL/DAY
12		705.62	740	962	1,251	1,626	2,114 GPM
13	STORAGE REQUIREMENTS	000.000	070 500	055 500	400.004	000.000	701 170 0011 0010
14	Indoor Requirement = 400 Gal/Connection	260,800	273,509	355,562	462,231	600,900	781,170 GALLONS
	Outside Irrigation Requirement = 2,848 Gal/Irrigated Acre	246,967	259,002	336,703	437,714	569,028	739,737 GALLONS
	Fire Storage (1,000 gpm for 1 hour)	60,000	60,000	60,000	60,000	60,000	60,000 GALLONS
17		50,777	53,251	69,227	89,995	116,993	152,091 GALLONS
18	Total Storage (Rounded) DISTRIBUTION SYSTEM REQUIREMENTS	620,000	650,000	820,000	1,050,000	1,350,000	1,730,000 GALLONS
19		683	704	833	005	1 100	1 370 CDM
20	Peak Hour Indoor Demand = 10.8(N [^] .64); N = # Connections Peak Hour Outside Demand = 7.92 Gpm/Irrigated Acre	683	704 720	833 936	985 1,217	1,166 1,582	1,379 GPM 2,057 GPM
21		1,370	1,425	1,769	2,203	2,748	3,436 GPM
23		0.488925708	0.512752282	0.666577966	0.866551356	1.126516763	1.464471792
	Physical Source Capacity on Peak Day Basis	0.488925708	0.512752282	0.000577900	0.800001300	1.120510703	1.464471792 670 Gallon/Minute
	Physical Source Capacity on Annual Volume Basis	0	0	0	0	183	0 AcreFeet/Year
	Water Rights Source Capacity on Peak Day Basis	0	0	0	0	0	0 Gallon/Minute
27	Water Rights Source Capacity on Annual Volume Basis	Ő	0 0	ő	0	0	0 AcreFeet/Year
28		0	0	0	0	0	0 / 0/01 000 1001
	Storage Capacity Needed	0	0	0	0	250.000	630,000 Gallons
30	EXISTING PHYSICAL SOURCE CAPACITY	nstantaneous Capa	citv	A	nnual Volume Cap	acity	
30		nstantaneous Capa 4 G	city iallon/Minute	A	nnual Volume Cap 7 A	acity cre Feet/Year	
31	Springs (low flow in 2014)	4 G		A	7 A		
31 32		4 G 0 G	allon/Minute	Ą	7 Å 0 A	cre Feet/Year	
31 32	Springs (low flow in 2014) Well - 10" (1936) (used for secondary supply in parks)	4 G 0 G 0 G	allon/Minute allon/Minute	Ą	7 A 0 A 0 A	cre Feet/Year cre Feet/Year	
31 32 33	Springs (low flow in 2014) Well - 10" (1936) (used for secondary supply in parks) Well - 16" (1962) (not in service) North Well (2002) & New Well (1995)	4 G 0 G 0 G	allon/Minute allon/Minute allon/Minute	A	7 A 0 A 0 A	cre Feet/Year cre Feet/Year cre Feet/Year	
31 32 33 34 35 36	Springs (low flow in 2014) Well - 10" (1936) (used for secondary supply in parks) Well - 16" (1962) (not in service) North Well (2002) & New Well (1995) Total Peak Day Sources	4 G 0 G 0 G 1,800 G 1,804 G	allon/Minute allon/Minute allon/Minute	Α	7 A 0 A 0 A	cre Feet/Year cre Feet/Year cre Feet/Year	
31 32 33 34 35 36 37	Springs (low flow in 2014) Well - 10" (1936) (used for secondary supply in parks) Well - 16" (1962) (not in service) North Well (2002) & New Well (1995) Total Peak Day Sources Safety Factor	4 G 0 G 0 G 1,800 G 1,804 G 1,25	allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute	Α	7 A 0 A 0 A 1,452 A	cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year	
31 32 33 34 35 36 37 38	Springs (low flow in 2014) Well - 10" (1936) (used for secondary supply in parks) Well - 16" (1962) (not in service) North Well (2002) & New Well (1995) Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor	4 G 0 G 0 G 1,800 G 1,804 G 1,25	allon/Minute allon/Minute allon/Minute allon/Minute	A	7 A 0 A 0 A 1,452 A	cre Feet/Year cre Feet/Year cre Feet/Year	
31 32 33 34 35 36 37 38 39	Springs (low flow in 2014) Well - 10" (1936) (used for secondary supply in parks) Well - 16" (1962) (not in service) North Well (2002) & New Well (1995) Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY	4 G 0 G 1,800 G 1,804 G 1.25 1,443 G	alion/Minute allon/Minute allon/Minute allon/Minute allon/Minute	Α	7 A 0 A 0 A 1,452 A 1,458 A	cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year	
31 32 33 34 35 36 37 38 39 40	Springs (low flow in 2014) Well - 10" (1936) (used for secondary supply in parks) Well - 16" (1962) (not in service) North Well (2002) & New Well (1995) Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Springs	4 G 0 G 0 G 1,800 G 1,804 G 1.25 1,443 G 1,346 G	allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute	A 	7 A 0 A 0 A 1,452 A <u>1,458 A</u> 2,172 A	cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year	
31 32 33 34 35 36 37 38 39 40 41	Springs (low flow in 2014) Well - 10" (1936) (used for secondary supply in parks) Well - 16" (1962) (not in service) North Well (2002) & New Well (1995) Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Springs Well - 10" (1936) (used for secondary supply in parks)	4 G 0 G 1,800 G 1,804 G 1.25 1,443 G 1,346 G 0 G	ialion/Minute ialion/Minute ialion/Minute ialion/Minute ialion/Minute ialion/Minute ialion/Minute ialion/Minute	A 	7 Å 0 A 0 A 1,452 A 1,458 A 2,172 A 0 A	cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year	
31 32 33 34 35 36 37 38 39 40 41 42	Springs (low flow in 2014) Well - 10" (1936) (used for secondary supply in parks) Well - 16" (1962) (not in service) North Well (2002) & New Well (1995) Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor <b>Existing Water Rights Source CAPACITY</b> Springs Well - 10" (1936) (used for secondary supply in parks) Well - 16" (1962) (not in service)	4 G 0 G 0 G 1,800 G 1,804 G 1.25 1,443 G 1,346 G 0 G 0 G	iallon/Minute iallon/Minute iallon/Minute iallon/Minute iallon/Minute iallon/Minute iallon/Minute iallon/Minute	A 	7 Å 0 A 1,452 A 1,458 A 2,172 A 0 A 0 A	cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year	
31 32 33 34 35 36 37 38 39 40 41 42 43	Springs (low flow in 2014) Well - 10" (1936) (used for secondary supply in parks) Well - 16" (1962) (not in service) North Well (2002) & New Well (1995) Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Springs Well - 10" (1936) (used for secondary supply in parks)	4 G 0 G 0 G 1,800 G 1,804 G 1.25 1,443 G 1,346 G 0 G 0 G	ialion/Minute ialion/Minute ialion/Minute ialion/Minute ialion/Minute ialion/Minute ialion/Minute ialion/Minute	A 	7 Å 0 A 1,452 A 1,458 A 2,172 A 0 A 0 A	cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year	
31 32 33 34 35 36 37 38 39 40 41 42 43 44	Springs (low flow in 2014) Well - 10" (1936) (used for secondary supply in parks) Well - 16" (1962) (not in service) North Well (2002) & New Well (1995) Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor <b>EXISTING WATER RIGHTS SOURCE CAPACITY</b> Springs Well - 10" (1936) (used for secondary supply in parks) Well - 16" (1962) (not in service) North Well (2002) & New Well (1995)	4 G 0 G 0 G 1,800 G 1,804 G 1,25 1,443 G 0 G 0 G 1,773 G	iallon/Minute iallon/Minute iallon/Minute iallon/Minute iallon/Minute iallon/Minute iallon/Minute iallon/Minute iallon/Minute	A 	7 Å 0 A 1,452 A 1,458 A 2,172 A 0 A 0 A	cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year	
31 32 33 34 35 36 37 38 39 40 41 42 43 44	Springs (low flow in 2014) Well - 10" (1936) (used for secondary supply in parks) Well - 16" (1962) (not in service) North Well (2002) & New Well (1995) Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor <b>Existing Water Rights Source CAPACITY</b> Springs Well - 10" (1936) (used for secondary supply in parks) Well - 16" (1962) (not in service) North Well (2002) & New Well (1995) Total Peak Day Sources	4 G 0 G 0 G 1,800 G 1,25 1,443 G 1,346 G 0 G 0 G 1,773 G 3,119 G	iallon/Minute iallon/Minute iallon/Minute iallon/Minute iallon/Minute iallon/Minute iallon/Minute iallon/Minute	A 	7 Å 0 A 1,452 A 1,458 A 2,172 A 0 A 0 A	cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year	
31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46	Springs (low flow in 2014) Well - 10" (1936) (used for secondary supply in parks) Well - 16" (1962) (not in service) North Well (2002) & New Well (1995) Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor <b>Existing WATER RIGHTS SOURCE CAPACITY</b> Springs Well - 10" (1936) (used for secondary supply in parks) Well - 16" (1962) (not in service) North Well (2002) & New Well (1995) Total Peak Day Sources Safety Factor	4 G 0 G 1,800 G 1,800 G 1,25 1,443 G 0 G 0 G 1,773 G 3,119 G 1.25	allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute	A 	7 Å 0 A 1,452 A 1,458 A 2,172 A 0 A 1,400 A	cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year	
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$\begin{array}{c} 311\\ 322\\ 333\\ 344\\ 355\\ 366\\ 377\\ 388\\ 399\\ 400\\ 411\\ 422\\ 433\\ 399\\ 400\\ 411\\ 425\\ 555\\ 555\\ 556\\ 566\\ 566\\ 566\\ 566\\ 5$	Springs (low flow in 2014) Well - 10" (1936) (used for secondary supply in parks) Well - 16" (1936) (used for service) North Well (2002) & New Well (1995) Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING WATER RIGHTS SOURCE CAPACITY Springs Well - 16" (1936) (used for secondary supply in parks) Well - 16" (1936) (used for secondary supply in parks) Well - 16" (1936) (used for secondary supply in parks) Well - 16" (1936) (used for secondary supply in parks) Well - 16" (1936) (used for secondary supply in parks) Well - 16" (1936) (used for secondary supply in parks) Well - 16" (1936) (used for secondary supply in parks) Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor EXISTING STORAGE CAPACITY West Tank 1 West Tank 1 West Tank 2 East Tank Total Storage ADDITIONAL CONNECTIONS SERVICEABLE WITH EXISTING C # based on Peak Day Physical Source Capacity	4 G 0 G 0 G 1,800 G 1,800 G 1,804 G 1,25 1,443 G 1,346 G 0 G 0 G 1,773 G 3,119 G 1,25 2,495 G 300,000 G 300,000 G 300,000 G 500,000 G 1,100,000 G 1,441 C	allon/Minute iallon/Minute iallon/Minute iallon/Minute iallon/Minute iallon/Minute iallon/Minute iallon/Minute iallon/Minute iallon/Minute iallon/Minute iallons iallons iallons iallons iallons	A 	7 Å 0 A 1,452 A 1,458 A 2,172 A 0 A 1,400 A	cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year	
$\begin{array}{c} 311\\ 322\\ 333\\ 344\\ 355\\ 366\\ 399\\ 393\\ 399\\ 400\\ 411\\ 422\\ 444\\ 455\\ 565\\ 555\\ 566\\ 577\\ 58\end{array}$	Springs (low flow in 2014) Well - 10" (1936) (used for secondary supply in parks) Well - 16" (1962) (not in service) North Well (2002) & New Well (1995) Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor <b>EXISTING WATER RIGHTS SOURCE CAPACITY</b> Springs Well - 16" (1936) (used for secondary supply in parks) Well - 16" (1936) (used for secondary supply in parks) Well - 16" (1936) (used for secondary supply in parks) Well - 16" (1936) (used for secondary supply in parks) Well - 16" (1936) (used for secondary supply in parks) Well - 16" (1936) (used for secondary supply in parks) Well - 16" (1922) & New Well (1995) Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor <b>EXISTING STORAGE CAPACITY</b> West Tank 1 West Tank 2 East Tank <b>Total Storage</b> <b>ADDITIONAL CONNECTIONS SERVICEABLE WITH EXISTING C</b> # based on Peak Day Physical Source Capacity # based on Annual Physical Source Capacity # based on Annual Physical Source Capacity # based on Annual Water Rights Capacity	4 G 0 G 0 G 1,800 G 1,800 G 1,800 G 1,25 1,443 G 1,346 G 0 G 0 G 1,273 G 3,119 G 1,25 2,495 G 300,000 G 300,000 G 300,000 G 300,000 G 1,100,000 G <b>APACITY</b> 682 C 1,441 C 1,654 C	allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allons allons allons allons allons allons	A 	7 Å 0 A 1,452 A 1,458 A 2,172 A 0 A 1,400 A	cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year	
$\begin{array}{c} 311\\ 322\\ 333\\ 344\\ 355\\ 366\\ 377\\ 388\\ 399\\ 400\\ 411\\ 422\\ 433\\ 544\\ 455\\ 515\\ 553\\ 544\\ 555\\ 566\\ 577\\ 588\\ \end{array}$	Springs (low flow in 2014) Well - 10" (1936) (used for secondary supply in parks) Well - 16" (1962) (not in service) North Well (2002) & New Well (1995) Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor <b>EXISTING WATER RIGHTS SOURCE CAPACITY</b> Springs Well - 16" (1962) (not in service) North Well (2002) & New Well (1995) Total Peak Day Sources Safety Factor Total Peak Day Sources Safety Factor Total Peak Day Sources with Safety Factor <b>EXISTING STORAGE CAPACITY</b> West Tank 1 West Tank 2 East Tank Total Storage <b>ADDITIONAL CONNECTIONS SERVICEABLE WITH EXISTING C</b> # based on Peak Day Physical Source Capacity # based on Peak Day Water Rights Capacity	4 G 0 G 0 G 1,800 G 1,800 G 1,804 G 1,25 1,443 G 0 G 0 G 1,773 G 3,119 G 1,25 2,495 G 300,000 G 300,000 G 300,000 G 1,100,000 G 1,100,000 G <b>APACITY</b> 682 C 1,441 C 1,641 C 1,641 C 1,647 C	allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allon/Minute allons allons allons allons allons allons onnections onnections onnections	A 	7 Å 0 A 1,452 A 1,458 A 2,172 A 0 A 1,400 A	cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year cre Feet/Year	

Line 3: Discuss presence of secondary water, average outdoor irrigation per connection Lines 5-18: Water Demands calculated based on Utah Division of Drinking Water Standards assuming Zone 4 for outside watering requirements. Lines 24-35: When data was not available for either the annual limit (ac-ftlyr) or the maximum flow rate (cfs or gpm), the other value was obtained by a straight units conversion. Lines 24-41: Existing source and storage data has been gathered from the following sources of information: interviews with the water agency, sanitary surveys, water rights information and Division

Tech	nical data for Willow Creek Water Company						
1	POPULATION AND IRRIGATED ACREAGE DATA:	2015	2020	2030	2040	2050	2060
2	# Units in Service Area	59	60	70	82	107	139 CONNECTIONS
3	# Acres of Outside Irrigation per Unit	0.25	0.25	0.25	0.25	0.25	0.25 ACRES/CONN.
	Total # Acres of Outside Irrigation for the System	14.75	14.94	17.54	20.58	26.76	34.78 ACRES
5							
	Annual Indoor Usage = 146,000 Gal/Year/Connection	26	27	31	37	48	62 ACRE FEET
7		28	28	33	38	50	65 ACRE FEET
2	Total Annual Usage	54	55	64	75	98	127 ACRE FEET
c	Peak Day Indoor Demand = 800 Gal./Day/Connection	47,200	47,816	56.119	65,862	85,621	111.307 GAL/DAY
	Peak Day Outdoor Demand = 3.96 Gpm/Irrigated Acre	84,110	85,209	100.003	117,367	152.577	198.350 GAL/DAY
11	Total Peak Day Demand	131,310	133,025	156,122	183.229	238,198	309.657 GAL/DAY
12		91	92	100,122	127	165	215 GPM
	STORAGE REQUIREMENTS	01	02	100		100	210 01 11
	Indoor Requirement = 400 Gal/Connection	23.600	23,908	28.059	32,931	42,811	55.654 GALLONS
	Outside Irrigation Requirement = 2,848 Gal/Irrigated Acre	42,008	42,556	49,946	58,618	76,203	99,064 GALLONS
16	Fire Storage (500 gpm for 30 minutes)	15.000	15.000	15.000	15.000	15.000	15.000 GALLONS
	Emergency Storage, 10%	6,561	6,646	7,800	9,155	11,901	15,472 GALLONS
18		90.000	90.000	100.000	120.000	150.000	190,000 GALLONS
	DISTRIBUTION SYSTEM REQUIREMENTS	90,000	90,000	100,000	120,000	130,000	190,000 GALLONS
	Peak Hour Indoor Demand = 10.8(N [^] .64); N = # Connections	147	148	164	182	215	254 GPM
			140	139	163	215	275 GPM
21	Peak Hour Outside Demand = 7.92 Gpm/Irrigated Acre Total Peak Hour Demand	117 264	266		345	427	530 GPM
				303			
	ADDITIONAL SOURCE CAPACITY NEEDED	0.9119	0.9238	1.0842	1.2724	1.6542	2.1504
	Physical Source Capacity on Peak Day Basis	0	0	8	27	65	115 Gallon/Minute
	Physical Source Capacity on Annual Volume Basis	0	0	0	0	0	27 AcreFeet/Year
	Water Rights Source Capacity on Peak Day Basis	0	0	0	0	28	77 Gallon/Minute
	Water Rights Source Capacity on Annual Volume Basis	0	0	0	0	0	0 AcreFeet/Year
28	ADDITIONAL STORAGE CAPACITY NEEDED Storage Capacity Needed	0	0	0	0	0	0 Gallons
		antaneous Capacit		-	ual Volume Capaci		0 Galions
	Well #1		y on/Minute	Ann		Feet/Year	
	Well #2		on/Minute			Feet/Year	
33		40 Gali	on/minute		32 ACTE	reel/real	
34		125 Call	on/Minute				
	Safety Factor	1.25 Gail	on/iviiriute				
30	Total Peak Day Sources with Safety Factor		on/Minute		101 Apro	Feet/Year	
	EXISTING WATER RIGHTS SOURCE CAPACITY	100 Gali	on/minute		TUT ACIE	reel/real	
	Well #1 (29-1334)	172 0-1	on/Minute		111 1000	Feet/Year	
	Well #2 (29-2081)		on/Minute			Feet/Year	
40		ind. Gall	onnaniule		mor. Acre		
40		172 Coll	on/Minute			1	
		1.25	onnaniule			1	
42			on/Minute		144	Feet/Year	
43	Total Peak Day Sources with Safety Factor EXISTING STORAGE CAPACITY	138 Gall	on/winute		144 Acre	reet/rear	
44		250.000 Gall	000			1	
40		Incl. Gall				1	
40		inci. Gali	0113			1	
47	Total Storage	250,000 Gall	ons			1	
	ADDITIONAL CONNECTIONS SERVICEABLE WITH EXISTING CAP.						
	# based on Peak Day Physical Source Capacity		nections			1	
51	# based on Annual Physical Source Capacity		nections			1	
	# based on Peak Day Water Rights Capacity		nections			1	
	# based on Peak Day Water Rights Capacity # based on Annual Water Rights Capacity		nections			1	
54		105 Con				1	
J-	a buood on otorage Dapaoliy	105 001	10000113				

Line 2: 59 units in 2016. Future growth based on typical BE county projections for a similar residential community. Line 3: Based on assumed data from 2005 Master Plan, average lawn size estimated to be about 0.25 ac/connection. Lines 5-18: Water Demands calculated based on Utah Division of Dirinking Water Standards assuming Zone 4 for outside watering requirements. Lines 24-35: When data was not available for either the annual limit (ac-ft/yr) or the maximum flow rate (cfs or gpm), the other value was

## **APPENDIX C** Cost Estimate Calculations

## BRWCD Master Plan Capital Cost Estimates Updated: 02/10/2017

SYSTEM	PROJECT DESCRIPTION	UNIT		NIT DST	COST	CONTINGENCY (20%) AND ENGINERING + ADMIN (15%)	TOTAL COST	ASSUMPTIONS
0 - 10 year proj	1.5 MG Storage Overflow Pond at about 14800 N 11000	1 €	ea. \$18	84,976	\$185,000	\$65,000		Added 5.1% to account for inflation between 2013
	W 12-inch Mainline Extension in 1000 West between 12000 N and 11200 N	2,800 f	t.	\$51	\$143,000	\$50,000		and 2016 12-in PVC pipeline, out of road
M&I	Canal Crossing for Mainline Extension at about 12000 N	1 e	ea. \$4	40,000	\$40,000	\$14,000	\$54,000	
Bothwell	1000 W West Corinne Meter Station at 10000 W 11200 N	1 e		30,000	\$30,000	\$11,000	\$41,000	
	Sunset Park Booster Station and Piping at 11700 W	1 e	ea. \$6	67,700	\$68,000	\$24,000	\$92,000	
	Sunset Dr Enclosure for Newman Backup Well							
	Pine Canyon Test Well west of Deweyville at about	1 e	ea. \$7	75,000	\$75,000	\$26,000	\$101,000	
	10500 N Pine Canyon Production Well	1 e	ea. \$30	00,000	\$300,000	\$105,000	\$405,000	\$50 per inch-foot for well cost, 12" casing, 500 feet
	Pine Canyon Pump Station and Wellhouse	1 e	ea. \$40	00,000	\$400,000	\$140,000	\$540,000	
	12-inch Pine Canyon Well Pipeline between well site and HWY 38	2,900 f	t.	\$51	\$148,000	\$52,000	\$200,000	12-in PVC pipeline, out of road
Collinston	12-inch Hwy 38 Pipeline between 10517 N to 11360 N 12-inch Cross Valley Pipeline (Hwy 38 to 12000 N Pump	6,100 f	t.	\$51	\$311,000	\$109,000	\$420,000	12-in PVC pipeline, out of road
	Station)	11,300 f	t.	\$51	\$576,000	\$202,000		12-in PVC pipeline, out of road
	16-in Bear River Crossing for Cross Valley Pipeline via	300 f	it.	\$318	\$95,000	\$33,000	\$128,000	Assumed 300 feet, 16-inch DIPS DR 9 HDPE, assumed \$1/lb material cost for pipe
	Horizontal Directional Drilling Cedar Ridge Backup Pump Station at about 12550 N	4 .		75 000	¢75.000	¢20,000		assumed \$1/10 material cost for pipe
	HWY 38 Test Well A	1 €		75,000 75,000	\$75,000 \$75,000	\$26,000	\$101,000	
Harper-Ward	Production Well A	1 e 1 e		00,000	\$75,000 \$300,000	\$20,000 \$105,000	\$101,000 \$405,000	\$50 per inch-foot for well cost, 12" casing, 500 feet
naipei-waiu	Pump and Wellhouse for Well A	1 6		50,000	\$350,000	\$123,000	\$473,000	· · ·
	12-inch Well A Pipeline Well #4 Backup Generator	3,100 f 1 e		\$51 80,000	\$158,000 \$80,000	\$55,000 \$28,000	\$213,000 \$108,000	
	Well #3 Test Well	1 e		75,000	\$75,000	\$26,000	\$101,000	
South Willard	South Willard Well #3 Production Well South Willard Well #3 Pump and Wellhouse	1 e 1 e		00,000 50,000	\$300,000 \$350,000	\$105,000 \$123,000	\$405,000 \$473,000	\$50 per inch-foot for well cost, 12" casing, 500 feet
	South Willard Well #3 10-inch pipeline	1 e		25,000	\$25,000	\$9,000		375*44=16500
	Connection between South Willard Water Company and Willard City; Connection between Perry City and Willard	2 €	ea. \$6	61,000	\$122,000	\$43,000	\$165,000	Meter station and 950 feet of 8-inch pipe
						Subtotal	\$5,781,000	
10 - 20 year pro								
	Marble Hills Pump Station Marble Hills Pipeline Phase 1	1 e 1 e		37,000 93,000	\$237,000 \$693,000	\$83,000 \$243,000	\$320,000 \$936,000	
M & I	Marble Hills Pipeline Phase 2	1 €		00,000	\$200,000	\$70,000	\$270,000	
Bothwell	Backup Well Enclosure Backup Generator	1 e 1 e		45,000 80,000	\$145,000 \$80,000	\$51,000 \$28,000	\$196,000 \$108,000	
	Fire Hydrants	11		54,000	\$54,000	\$28,000		get number of fire hydrants
M & I East	1 MG Storage Reservoir Plymouth Booster Station	1 6		00,000	\$1,000,000	\$350,000	\$1,350,000	
IVI & I East		1 €		00,000 30,000	\$100,000 \$30,000	\$35,000 \$11,000	\$41,000	assumed 200 gpm
	Garland Meter Station	1 6			φ30,000	φ11,000	φ <del>4</del> 1,000	
	Flat Canyon Test Well	1 €		75,000	\$75,000	\$26,000	\$101,000	
	Flat Canyon Test Well Flat Canyon Production Well	1 e 1 e	ea. \$30	00,000	\$75,000 \$300,000	\$26,000 \$105,000	\$101,000	\$50 per inch-foot for well cost, 12" casing, 500 feet
Collinston	Flat Canyon Test Well         Flat Canyon Production Well         Pump and Wellhouse for Flat Canyon Well         10-inch Flat Canyon Well Pipeline	1 e 1 e 2,100 f	ea. \$30 ea. \$35 t.	00,000 50,000 \$44	\$75,000 \$300,000 \$350,000 \$92,000	\$26,000 \$105,000 \$123,000 \$32,000	\$101,000 \$405,000 \$473,000 \$124,000	\$50 per inch-foot for well cost, 12" casing, 500 feet
Collinston	Flat Canyon Test Well         Flat Canyon Production Well         Pump and Wellhouse for Flat Canyon Well         10-inch Flat Canyon Well Pipeline         12-inch Willow Creek 14400 N Transmission Pipeline	1 e 1 e 2,100 f 14,600 f	ea. \$30 ea. \$35 t. t.	00,000 50,000 \$44 \$51	\$75,000 \$300,000 \$350,000 \$92,000 \$745,000	\$26,000 \$105,000 \$123,000 \$32,000 \$261,000	\$101,000 \$405,000 \$473,000 \$124,000 \$1,006,000	\$50 per inch-foot for well cost, 12" casing, 500 feet
Collinston	Flat Canyon Test Well         Flat Canyon Production Well         Pump and Wellhouse for Flat Canyon Well         10-inch Flat Canyon Well Pipeline         12-inch Willow Creek 14400 N Transmission Pipeline         Willow Creek Booster Station         Beaver Dam Early Park Road 8" Supply Pipeline	1 e 1 e 2,100 f	ea. \$3( ea. \$35 t. t. ea. \$16 t.	00,000 50,000 \$44 \$51 50,000 \$35	\$75,000 \$300,000 \$350,000 \$92,000 \$745,000 \$150,000 \$242,000	\$26,000 \$105,000 \$123,000 \$32,000 \$261,000 \$53,000 \$85,000	\$101,000 \$405,000 \$473,000 \$124,000 \$1,006,000 \$203,000 \$327,000	\$50 per inch-foot for well cost, 12" casing, 500 feet
	Flat Canyon Test Well         Flat Canyon Production Well         Pump and Wellhouse for Flat Canyon Well         10-inch Flat Canyon Well Pipeline         12-inch Willow Creek 14400 N Transmission Pipeline         Willow Creek Booster Station         Beaver Dam Early Park Road 8" Supply Pipeline         Harper Ward Well B Test Well	1 e 1 e 2,100 f 14,600 f 1 e 6,900 f 1 e	ea. \$30 ea. \$35 t. t. ea. \$15 t. ea. \$7	00,000 50,000 \$44 \$51 50,000 \$35 75,000	\$75,000 \$300,000 \$350,000 \$92,000 \$745,000 \$150,000 \$242,000 \$75,000	\$26,000 \$105,000 \$123,000 \$32,000 \$261,000 \$53,000 \$85,000 \$26,000	\$101,000 \$405,000 \$473,000 \$124,000 \$1,006,000 \$203,000 \$327,000 \$101,000	
	Flat Canyon Test Well         Flat Canyon Production Well         Pump and Wellhouse for Flat Canyon Well         10-inch Flat Canyon Well Pipeline         12-inch Willow Creek 14400 N Transmission Pipeline         Willow Creek Booster Station         Beaver Dam Early Park Road 8" Supply Pipeline	1 e 1 e 2,100 f 14,600 f 1 e 6,900 f	ea. \$3( ea. \$3; t. t. ea. \$1; t. ea. \$7; ea. \$3(	00,000 50,000 \$44 \$51 50,000 \$35	\$75,000 \$300,000 \$350,000 \$92,000 \$745,000 \$150,000 \$242,000	\$26,000 \$105,000 \$123,000 \$32,000 \$261,000 \$53,000 \$85,000	\$101,000 \$405,000 \$473,000 \$124,000 \$1,006,000 \$203,000 \$327,000 \$101,000	\$50 per inch-foot for well cost, 12" casing, 500 feet \$50 per inch-foot for well cost, 12" casing, 500 feet
	Flat Canyon Test Well Flat Canyon Production Well Pump and Wellhouse for Flat Canyon Well 10-inch Flat Canyon Well Pipeline 12-inch Willow Creek 14400 N Transmission Pipeline Willow Creek Booster Station Beaver Dam Early Park Road 8" Supply Pipeline Harper Ward Well B Test Well Production Well B	1 e 1 e 2,100 f 14,600 f 14,600 f 6,900 f 1 e 1 e	ea. \$3( ea. \$3; t. t. ea. \$1; t. ea. \$7; ea. \$3(	00,000 50,000 \$44 \$51 50,000 \$35 75,000 00,000	\$75,000 \$300,000 \$350,000 \$92,000 \$745,000 \$150,000 \$242,000 \$75,000 \$300,000	\$26,000 \$105,000 \$123,000 \$32,000 \$261,000 \$53,000 \$85,000 \$85,000 \$26,000 \$105,000	\$101,000 \$405,000 \$473,000 \$124,000 \$1,006,000 \$203,000 \$327,000 \$101,000 \$405,000	
	Flat Canyon Test Well         Flat Canyon Production Well         Pump and Wellhouse for Flat Canyon Well         10-inch Flat Canyon Well Pipeline         12-inch Willow Creek 14400 N Transmission Pipeline         Willow Creek Booster Station         Beaver Dam Early Park Road 8" Supply Pipeline         Harper Ward Well B Test Well         Production Well B         Pump and Wellhouse for Well B	1 e 1 e 2,100 f 14,600 f 6,900 f 1 e 1 e	ea. \$3( ea. \$3; t. t. ea. \$1; t. ea. \$3; ea. \$3; ea. \$3;	00,000 50,000 \$44 \$51 50,000 \$35 75,000 00,000 50,000	\$75,000 \$300,000 \$350,000 \$92,000 \$150,000 \$242,000 \$75,000 \$300,000 \$350,000	\$26,000 \$105,000 \$123,000 \$32,000 \$261,000 \$53,000 \$85,000 \$85,000 \$105,000 \$105,000 \$123,000 \$123,000	\$101,000 \$405,000 \$473,000 \$124,000 \$203,000 \$203,000 \$101,000 \$405,000 \$473,000 \$7,047,000	\$50 per inch-foot for well cost, 12" casing, 500 feet
Harper-Ward	Flat Canyon Test Well Flat Canyon Production Well Pump and Wellhouse for Flat Canyon Well 10-inch Flat Canyon Well Pipeline 12-inch Willow Creek 14400 N Transmission Pipeline Willow Creek Booster Station Beaver Dam Early Park Road 8" Supply Pipeline Harper Ward Well B Test Well Production Well B Pump and Wellhouse for Well B Cts Reverse Osmosis Water Treatment Plant	1 e 1 e 2,100 f 14,600 f 1 e 6,900 f 1 e 1 e	ea. \$3( ea. \$35 t ea. \$15 t ea. \$3( ea. \$3( ea. \$3,13	00,000 50,000 \$44 \$51 50,000 \$35 75,000 00,000 50,000 34,917	\$75,000 \$300,000 \$92,000 \$745,000 \$150,000 \$242,000 \$75,000 \$300,000 \$350,000 \$350,000	\$26,000 \$105,000 \$123,000 \$32,000 \$261,000 \$53,000 \$85,000 \$85,000 \$105,000 \$123,000 \$123,000 \$ubtotal \$1,176,000	\$101,000 \$405,000 \$473,000 \$124,000 \$203,000 \$203,000 \$101,000 \$405,000 \$473,000 \$7,047,000 \$4,311,000	
Harper-Ward 20 + year projec M & I	Flat Canyon Test Well         Flat Canyon Production Well         Pump and Wellhouse for Flat Canyon Well         10-inch Flat Canyon Well Pipeline         12-inch Willow Creek 14400 N Transmission Pipeline         Willow Creek Booster Station         Beaver Dam Early Park Road 8" Supply Pipeline         Harper Ward Well B Test Well         Production Well B         Pump and Wellhouse for Well B         Cts         Reverse Osmosis Water Treatment Plant         12-inch Pipline between WTP and west Tremonton	1 e 1 e 2,100 f 14,600 f 1 e 6,900 f 1 e 1 e 33,700 f	ea. \$3( ea. \$3; t	00,000 50,000 \$44 \$51 50,000 \$35 75,000 50,000 50,000 34,917 \$51	\$75,000 \$300,000 \$92,000 \$745,000 \$150,000 \$242,000 \$75,000 \$300,000 \$350,000 \$350,000 \$3,135,000 \$1,719,000	\$26,000 \$105,000 \$123,000 \$32,000 \$261,000 \$53,000 \$85,000 \$105,000 \$105,000 \$123,000 \$ubtotal \$1,176,000 \$602,000	\$101,000 \$405,000 \$473,000 \$1,006,000 \$203,000 \$327,000 \$101,000 \$405,000 \$473,000 \$7,047,000 \$4,311,000 \$2,363,975	\$50 per inch-foot for well cost, 12" casing, 500 feet \$50 per inch-foot for well cost, 12" casing, 500 feet \$10 per inch-foot for well cost, 12" casing, 500 feet \$10 per inch-foot for well cost, 12" casing, 500 feet \$10 per inch-foot for well cost, 12" casing, 500 feet \$10 per inch-foot for well cost, 12" casing, 500 feet \$10 per inch-foot for well cost, 12" casing, 500 feet \$10 per inch-foot for well cost, 12" casing, 500 feet \$10 per inch-foot for well cost, 12" casing, 500 feet \$10 per inch-foot for well cost, 12" casing, 500 feet \$10 per inch-foot for well cost, 12" casing, 500 feet \$10 per inch-foot for well cost, 12" casing, 500 feet \$10 per inch-foot for well cost, 12" casing, 500 feet \$10 per inch-foot for well cost, 12" casing, 500 feet \$10 per inch-foot for well cost, 12" casing, 500 feet \$10 per inch-foot for well cost, 12" casing, 500 feet \$10 per inch-foot for well cost, 12" casing, 500 feet \$10 per inch-foot for well cost, 12" casing, 500 feet \$10 per inch-foot for well cost, 12" casing, 500 feet \$10 per inch-foot for well cost, 12" casing, 500 feet \$10 per inch-foot for well cost, 12" casing, 500 feet \$10 per inch-foot for well cost, 12" casing, 500 feet \$10 per inch-foot for well cost, 12" casing, 500 feet \$10 per inch-foot for well cost, 12" casing, 500 feet \$10 per inch-foot for well cost, 12" casing, 500 feet \$10 per inch-foot for well cost, 12" casing, 500 feet \$10 per inch-foot for well cost, 12" casing, 500 feet \$10 per inch-foot for well cost, 12" casing, 500 feet \$10 per inch-foot for well cost, 12" casing, 500 feet \$10 per inch-foot for well cost, 12" casing, 500 feet \$10 per inch-foot for well cost, 12" casing, 500 feet \$10 per inch-foot for well cost, 12" casing, 500 feet \$10 per inch-foot for well cost, 12" casing, 500 feet \$10 per inch-foot for well cost, 12" casing, 500 feet \$10 per inch-foot for well cost, 12" casing, 500 feet \$10 per inch-foot for well cost, 12" casing, 500 feet \$10 per inch-foot for well cost, 12" casing, 500 feet \$10 per inch-foot for well cost, 12" casing, 500
Harper-Ward 20 + year projec	Flat Canyon Test Well Flat Canyon Production Well Pump and Wellhouse for Flat Canyon Well 10-inch Flat Canyon Well Pipeline 12-inch Willow Creek 14400 N Transmission Pipeline Willow Creek Booster Station Beaver Dam Early Park Road 8" Supply Pipeline Harper Ward Well B Test Well Production Well B Pump and Wellhouse for Well B Cts Reverse Osmosis Water Treatment Plant	1 e 1 e 2,100 f 14,600 f 1 e 6,900 f 1 e 1 e	ea. \$3( ea. \$3; t	00,000 50,000 \$44 \$51 50,000 \$35 75,000 00,000 50,000 34,917	\$75,000 \$300,000 \$92,000 \$745,000 \$150,000 \$242,000 \$75,000 \$300,000 \$350,000 \$350,000	\$26,000 \$105,000 \$123,000 \$32,000 \$261,000 \$53,000 \$85,000 \$85,000 \$105,000 \$123,000 \$123,000 \$ubtotal \$1,176,000	\$101,000 \$405,000 \$173,000 \$124,000 \$203,000 \$203,000 \$327,000 \$405,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$405,000 \$405,000 \$124,000 \$124,000 \$124,000 \$124,000 \$124,000 \$124,000 \$124,000 \$124,000 \$124,000 \$124,000 \$124,000 \$124,000 \$124,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$10	\$50 per inch-foot for well cost, 12" casing, 500 feet Includes additional 2.5% in contingency for admin and
Harper-Ward 20 + year projec M & I	Flat Canyon Test Well Flat Canyon Production Well Pump and Wellhouse for Flat Canyon Well 10-inch Flat Canyon Well Pipeline 12-inch Willow Creek 14400 N Transmission Pipeline Willow Creek Booster Station Beaver Dam Early Park Road 8" Supply Pipeline Harper Ward Well B Test Well Production Well B Pump and Wellhouse for Well B  cts Reverse Osmosis Water Treatment Plant 12-inch Pipline between WTP and west Tremonton 2 Freeway crossings between WTP and west Tremonton 12-inch Pipeline in between 2300 W 1000 N and 12000 N Pump Station	1 e 1 e 2,100 f 14,600 f 1 e 6,900 f 1 e 1 e 33,700 f 500 f 16,900 f	ea. \$3( ea. \$3; t	00,000 50,000 \$44 \$51 50,000 \$35 75,000 00,000 50,000 34,917 \$269 \$51	\$75,000 \$300,000 \$92,000 \$745,000 \$242,000 \$75,000 \$300,000 \$350,000 \$3,135,000 \$1,719,000 \$134,000 \$862,000	\$26,000 \$105,000 \$123,000 \$32,000 \$261,000 \$53,000 \$85,000 \$105,000 \$105,000 \$123,000 \$123,000 \$123,000 \$123,000 \$47,000 \$47,000	\$101,000 \$405,000 \$173,000 \$1,006,000 \$203,000 \$101,000 \$405,000 \$473,000 \$7,047,000 \$4,311,000 \$2,363,975 \$184,350 \$1,185,550	\$50 per inch-foot for well cost, 12" casing, 500 feet Includes additional 2.5% in contingency for admin and legal costs Assume 500 total feet of crossings, 14-inch DIPS DR
Harper-Ward 20 + year projec M & I	Flat Canyon Test Well         Flat Canyon Production Well         Pump and Wellhouse for Flat Canyon Well         10-inch Flat Canyon Well Pipeline         12-inch Willow Creek 14400 N Transmission Pipeline         Willow Creek Booster Station         Beaver Dam Early Park Road 8" Supply Pipeline         Harper Ward Well B Test Well         Production Well B         Pump and Wellhouse for Well B         Cts         Reverse Osmosis Water Treatment Plant         12-inch Pipline between WTP and west Tremonton         2 Freeway crossings between WTP and west Tremonton         12-inch Pipeline in between 2300 W 1000 N and 12000	1 e 1 e 2,100 f 14,600 f 1 e 6,900 f 1 e 1 e 33,700 f 500 f	ea. \$3( ea. \$3; t	00,000 50,000 \$44 \$51 50,000 \$35 75,000 00,000 50,000 34,917 \$51 \$269 \$51 \$269	\$75,000 \$300,000 \$92,000 \$745,000 \$242,000 \$75,000 \$300,000 \$350,000 \$350,000 \$351,135,000 \$1,719,000 \$134,000 \$862,000	\$26,000 \$105,000 \$123,000 \$2261,000 \$53,000 \$53,000 \$266,000 \$105,000 \$105,000 \$123,000 \$123,000 \$123,000 \$47,000 \$47,000 \$302,000	\$101,000 \$405,000 \$173,000 \$1,006,000 \$1,006,000 \$101,000 \$405,000 \$473,000 \$7,047,000 \$4,311,000 \$2,363,975 \$184,350 \$1,185,550 \$101,000	\$50 per inch-foot for well cost, 12" casing, 500 feet Includes additional 2.5% in contingency for admin and legal costs Assume 500 total feet of crossings, 14-inch DIPS DR 11 pipeline
Harper-Ward 20 + year projec M & I	Flat Canyon Test Well Flat Canyon Production Well Pump and Wellhouse for Flat Canyon Well 10-inch Flat Canyon Well Pipeline 12-inch Willow Creek 14400 N Transmission Pipeline Willow Creek Booster Station Beaver Dam Early Park Road 8" Supply Pipeline Harper Ward Well B Test Well Production Well B Pump and Wellhouse for Well B Cts Reverse Osmosis Water Treatment Plant 12-inch Pipline between WTP and west Tremonton 2 Freeway crossings between WTP and west Tremonton 12-inch Pipeline in between 2300 W 1000 N and 12000 N Pump Station Test Well for Bear River Production Well A Bear River Production Well A Pump and Wellhouse for Bear River Production Well A	1 e 1 e 2,100 f 14,600 f 1 e 6,900 f 1 e 33,700 f 500 f 16,900 f 16,900 f 1 e 1 e 1 e 1 e 1 e 1 e 1 e 1 e	ea. \$3( ea. \$3; t ea. \$1; t ea. \$1; ea. \$3; ea. \$3; ea. \$3; t t t ea. \$3; t ea. \$3; ea. \$3; ea. \$3;	00,000 50,000 \$44 \$51 50,000 00,000 50,000 50,000 34,917 \$51 \$269 \$51 \$269 \$51 75,000 00,000 50,000	\$75,000 \$300,000 \$350,000 \$745,000 \$150,000 \$745,000 \$75,000 \$300,000 \$350,000 \$1,719,000 \$134,000 \$862,000 \$75,000 \$300,000 \$350,000	\$26,000 \$105,000 \$123,000 \$2261,000 \$53,000 \$85,000 \$105,000 \$105,000 \$123,000 \$123,000 \$47,000 \$47,000 \$302,000 \$26,000 \$105,000 \$105,000 \$123,000	\$101,000 \$405,000 \$173,000 \$124,000 \$106,000 \$203,000 \$101,000 \$405,000 \$473,000 \$4,311,000 \$2,363,975 \$184,350 \$1,185,550 \$101,000 \$405,000 \$473,000	\$50 per inch-foot for well cost, 12" casing, 500 feet Includes additional 2.5% in contingency for admin and legal costs Assume 500 total feet of crossings, 14-inch DIPS DR
Harper-Ward 20 + year projec M & I Bothwell	Flat Canyon Test Well Flat Canyon Production Well Pump and Wellhouse for Flat Canyon Well 10-inch Flat Canyon Well Pipeline 12-inch Willow Creek 14400 N Transmission Pipeline Willow Creek Booster Station Beaver Dam Early Park Road 8" Supply Pipeline Harper Ward Well B Test Well Production Well B Pump and Wellhouse for Well B Cts Reverse Osmosis Water Treatment Plant 12-inch Pipline between WTP and west Tremonton 2 Freeway crossings between WTP and west Tremonton 12-inch Pipeline in between 2300 W 1000 N and 12000 N Pump Station Test Well for Bear River Production Well A Bear River Production Well A Pump and Wellhouse for Bear River Production Well A Test Well for Bear River Production Well B	1 e 1 e 1 e 2,100 f 1 e 2,100 f 1 e 6,900 f 1 e 33,700 f 16,900 f 16,900 f 1 e 1 e 1 e 1 e 1 e 1 e 1 e 1 e	ea. \$3( ea. \$3; t ea. \$1; t ea. \$1; ea. \$3; ea. \$3; ea. \$3; t t t t ea. \$3; t t f ea. \$3; ea. \$3; ea. \$3; ea. \$3;	00,000 50,000 \$44 \$51 50,000 \$35 75,000 00,000 50,000 50,000 \$51 \$51 \$269 \$51 75,000 00,000 50,000 50,000	\$75,000 \$300,000 \$92,000 \$745,000 \$745,000 \$75,000 \$300,000 \$350,000 \$1,719,000 \$134,000 \$862,000 \$75,000 \$350,000 \$350,000	\$26,000 \$105,000 \$123,000 \$23,000 \$261,000 \$53,000 \$26,000 \$105,000 \$1123,000 \$123,000 \$123,000 \$47,000 \$302,000 \$26,000 \$105,000 \$105,000 \$105,000 \$123,000	\$101,000 \$405,000 \$173,000 \$1,006,000 \$203,000 \$101,000 \$405,000 \$473,000 \$2,363,975 \$184,350 \$1,185,550 \$101,000 \$473,000 \$473,000 \$473,000 \$101,000	\$50 per inch-foot for well cost, 12" casing, 500 feet Includes additional 2.5% in contingency for admin and legal costs Assume 500 total feet of crossings, 14-inch DIPS DR 11 pipeline \$50 per inch-foot for well cost, 12" casing, 500 feet
Harper-Ward 20 + year projec M & I	Flat Canyon Test Well         Flat Canyon Production Well         Pump and Wellhouse for Flat Canyon Well         10-inch Flat Canyon Well Pipeline         12-inch Willow Creek 14400 N Transmission Pipeline         Willow Creek Booster Station         Beaver Dam Early Park Road 8" Supply Pipeline         Harper Ward Well B Test Well         Production Well B         Pump and Wellhouse for Well B         Pump and Wellhouse for Well B         Cts         Reverse Osmosis Water Treatment Plant         12-inch Pipline between WTP and west Tremonton         2 Freeway crossings between WTP and west Tremonton         12-inch Pipeline in between 2300 W 1000 N and 12000 N Pump Station         Test Well for Bear River Production Well A         Bear River Production Well A         Pump and Wellhouse for Bear River Production Well A         Test Well for Bear River Production Well B         Bear River Production Well B         Pump and Wellhouse for Bear River Production Well B         Pump and Wellhouse for Bear River Production Well B	1 e 1 e 1 e 2,100 f 1 e 6,900 f 1 e 1 e 33,700 f 500 f 16,900 f 16,900 f 16,900 f 1 e 1 e 1 e 1 e 1 e 1 e 1 e 1 e	ea. \$3( ba. \$3( t. \$3( t. \$1( ba. \$1( ba. \$1( ba. \$3( ba. \$3(ba. \$3(bb. \$3(ba. \$3(bb. \$	00,000 50,000 \$44 \$51 50,000 \$35 75,000 00,000 50,000 34,917 \$269 \$51 \$269 \$51 \$269 \$51 \$269 \$51	\$75,000 \$300,000 \$92,000 \$745,000 \$745,000 \$75,000 \$300,000 \$350,000 \$1,719,000 \$134,000 \$862,000 \$75,000 \$350,000 \$350,000 \$350,000	\$26,000 \$105,000 \$123,000 \$23,000 \$261,000 \$53,000 \$453,000 \$105,000 \$105,000 \$123,000 \$123,000 \$47,000 \$47,000 \$302,000 \$105,000 \$105,000 \$105,000 \$105,000 \$123,000	\$101,000 \$405,000 \$173,000 \$1,006,000 \$203,000 \$101,000 \$405,000 \$473,000 \$4,311,000 \$2,363,975 \$184,350 \$101,000 \$473,000 \$473,000 \$405,000 \$473,000	\$50 per inch-foot for well cost, 12" casing, 500 feet Includes additional 2.5% in contingency for admin and legal costs Assume 500 total feet of crossings, 14-inch DIPS DR 11 pipeline
Harper-Ward 20 + year projec M & I Bothwell	Flat Canyon Test Well         Flat Canyon Production Well         Pump and Wellhouse for Flat Canyon Well         10-inch Flat Canyon Well Pipeline         12-inch Willow Creek 14400 N Transmission Pipeline         Willow Creek Booster Station         Beaver Dam Early Park Road 8" Supply Pipeline         Harper Ward Well B Test Well         Production Well B         Pump and Wellhouse for Well B         Pump and Wellhouse for Well B         Cts         Reverse Osmosis Water Treatment Plant         12-inch Pipline between WTP and west Tremonton         2 Freeway crossings between WTP and west Tremonton         12-inch Pipeline in between 2300 W 1000 N and 12000         N Pump Station         Test Well for Bear River Production Well A         Bear River Production Well A         Pump and Wellhouse for Bear River Production Well A         Bear River Production Well B         Bear River Production Well B         Pump and Wellhouse for Bear River Production Well B         Bear River Production Well B         Pump and Wellhouse for Bear River Production Well B         Pump and Wellhouse for Bear River Production Well B         Add 3rd Pump for Collinston Booster Stations	1 e 1 e 2,100 f 14,600 f 1 e 6,900 f 1 e 1 e 33,700 f 500 f 16,900 f 16,900 f 1 e 1 e 1 e 1 e 2 e 2 e 1 e 2 e 1 e 2 e 2 e 2 e 2 e 2 e 2 e 2 e 2	ea. \$30 ea. \$33 t. \$35 t. \$35 t. \$35 ea. \$16 ea. \$30 ea. \$30 ea. \$35 t. \$7 ea. \$37 ea. \$33 ea. \$33 ea. \$33 ea. \$33 ea. \$33 ea. \$33 ea. \$33 ea. \$33 ea. \$33 ea. \$33	00,000 50,000 \$44 \$51 50,000 \$35 75,000 00,000 50,000 34,917 \$269 \$51 \$269 \$51 \$269 \$51 \$269 \$51 \$269 \$51 \$269 \$51 \$269 \$51 \$269 \$51 \$269 \$51 \$269 \$51 \$269 \$51 \$269 \$51 \$269 \$51 \$269 \$51 \$269 \$51 \$269 \$51 \$269 \$51 \$269 \$51 \$269 \$51 \$269 \$51 \$269 \$51 \$260 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$000 \$00	\$75,000 \$300,000 \$92,000 \$745,000 \$745,000 \$745,000 \$75,000 \$300,000 \$350,000 \$1,719,000 \$134,000 \$862,000 \$75,000 \$300,000 \$75,000 \$350,000 \$350,000	\$26,000 \$105,000 \$123,000 \$23,000 \$261,000 \$53,000 \$265,000 \$105,000 \$105,000 \$123,000 \$47,000 \$47,000 \$302,000 \$47,000 \$105,000 \$105,000 \$105,000 \$105,000 \$105,000	\$101,000 \$405,000 \$1,006,000 \$1,006,000 \$203,000 \$101,000 \$405,000 \$47,047,000 \$4,311,000 \$2,363,975 \$184,350 \$11,185,550 \$101,000 \$405,000 \$473,000 \$405,000 \$473,000 \$270,000	\$50 per inch-foot for well cost, 12" casing, 500 feet Includes additional 2.5% in contingency for admin and legal costs Assume 500 total feet of crossings, 14-inch DIPS DR 11 pipeline \$50 per inch-foot for well cost, 12" casing, 500 feet \$50 per inch-foot for well cost, 12" casing, 500 feet
Harper-Ward 20 + year projec M & I Bothwell	Flat Canyon Test Well         Flat Canyon Production Well         Pump and Wellhouse for Flat Canyon Well         10-inch Flat Canyon Well Pipeline         12-inch Willow Creek 14400 N Transmission Pipeline         Willow Creek Booster Station         Beaver Dam Early Park Road 8" Supply Pipeline         Harper Ward Well B Test Well         Production Well B         Pump and Wellhouse for Well B         Pump and Wellhouse for Well B         Cts         Reverse Osmosis Water Treatment Plant         12-inch Pipline between WTP and west Tremonton         2 Freeway crossings between WTP and west Tremonton         12-inch Pipeline in between 2300 W 1000 N and 12000 N Pump Station         Test Well for Bear River Production Well A         Bear River Production Well A         Pump and Wellhouse for Bear River Production Well A         Test Well for Bear River Production Well B         Bear River Production Well B         Pump and Wellhouse for Bear River Production Well B         Pump and Wellhouse for Bear River Production Well B	1 e 1 e 1 e 2,100 f 1 e 6,900 f 1 e 1 e 33,700 f 500 f 16,900 f 16,900 f 16,900 f 1 e 1 e 1 e 1 e 1 e 1 e 1 e 1 e	ea. \$3( ea. \$3( t. \$3( t. \$1( ea. \$1( ea. \$1( ea. \$3( ea. \$3())))))))))))))))))))))))))))))))))))	00,000 50,000 \$44 \$51 50,000 \$35 75,000 00,000 50,000 34,917 \$269 \$51 \$269 \$51 \$269 \$51 \$269 \$51	\$75,000 \$300,000 \$92,000 \$745,000 \$745,000 \$75,000 \$300,000 \$350,000 \$1,719,000 \$134,000 \$862,000 \$75,000 \$350,000 \$350,000 \$350,000	\$26,000 \$105,000 \$123,000 \$23,000 \$261,000 \$53,000 \$453,000 \$105,000 \$105,000 \$123,000 \$123,000 \$47,000 \$47,000 \$302,000 \$105,000 \$105,000 \$105,000 \$105,000 \$123,000	\$101,000 \$405,000 \$1,006,000 \$1,006,000 \$1,006,000 \$1,006,000 \$101,000 \$405,000 \$473,000 \$4,311,000 \$2,363,975 \$184,350 \$101,000 \$405,000 \$405,000 \$405,000 \$405,000 \$405,000 \$473,000 \$101,000 \$405,000 \$473,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$101,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,000 \$100,0000\$1000\$1	\$50 per inch-foot for well cost, 12" casing, 500 feet Includes additional 2.5% in contingency for admin and legal costs Assume 500 total feet of crossings, 14-inch DIPS DR 11 pipeline \$50 per inch-foot for well cost, 12" casing, 500 feet
Harper-Ward 20 + year projec M & I Bothwell	Flat Canyon Test Well Flat Canyon Production Well Pump and Wellhouse for Flat Canyon Well 10-inch Flat Canyon Well Pipeline 12-inch Willow Creek 14400 N Transmission Pipeline Willow Creek Booster Station Beaver Dam Early Park Road 8" Supply Pipeline Harper Ward Well B Test Well Production Well B Pump and Wellhouse for Well B Cts Reverse Osmosis Water Treatment Plant 12-inch Pipline between WTP and west Tremonton 2 Freeway crossings between WTP and west Tremonton 12-inch Pipeline in between 2300 W 1000 N and 12000 N Pump Station Test Well for Bear River Production Well A Bear River Production Well A Pump and Wellhouse for Bear River Production Well A Test Well for Bear River Production Well B Bear River Production Well B Pump and Wellhouse for Bear River Production Well B Bear River Production Well B Pump and Wellhouse for Bear River Production Well B Bear River Production Well B Pump and Wellhouse for Bear River Production Well B Bear River Production Well B Pump and Wellhouse for Bear River Production Well B Bear River Production Well B Pump and Wellhouse for Bear River Production Well B Add 3rd Pump for Collinston Booster Stations 8-inch 2400 W Transmission Pipeline 8-inch HWY 38 Pipeline between 12950 N and 14530 N Harper Ward Storage Reservoir	1 e 1 e 2,100 f 14,600 f 1 e 6,900 f 1 e 1 e 33,700 f 16,900 f 16,900 f 16,900 f 1 e 1 e 1 e 1 e 2 e 1 4,600 f 1 e 1 e 1 e 1 e 1 e 1 e 1 e 1 e	ea. \$3( ea. \$3; t	00,000 50,000 \$44 \$51 50,000 00,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,0	\$75,000 \$300,000 \$92,000 \$745,000 \$745,000 \$75,000 \$300,000 \$350,000 \$1,719,000 \$11,719,000 \$11,719,000 \$11,719,000 \$350,000 \$75,000 \$350,000 \$350,000 \$350,000 \$350,000 \$350,000 \$350,000 \$350,000	\$26,000 \$105,000 \$123,000 \$23,000 \$261,000 \$53,000 \$26,000 \$105,000 \$1123,000 \$123,000 \$47,000 \$302,000 \$26,000 \$105,000 \$105,000 \$123,000 \$105,000 \$123,000 \$123,000 \$123,000 \$140,000 \$123,000	\$101,000 \$405,000 \$1,006,000 \$1,006,000 \$203,000 \$101,000 \$405,000 \$473,000 \$2,363,975 \$184,350 \$1,185,550 \$101,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,000 \$473,0000\$400\$400\$400\$400\$400\$4	\$50 per inch-foot for well cost, 12" casing, 500 feet Includes additional 2.5% in contingency for admin and legal costs Assume 500 total feet of crossings, 14-inch DIPS DR 11 pipeline \$50 per inch-foot for well cost, 12" casing, 500 feet \$50 per inch-foot for well cost, 12" casing, 500 feet \$50 per inch-foot for well cost, 12" casing, 500 feet
Harper-Ward 20 + year projec M & I Bothwell Collinston	Flat Canyon Test Well         Flat Canyon Production Well         Pump and Wellhouse for Flat Canyon Well         10-inch Flat Canyon Well Pipeline         12-inch Willow Creek 14400 N Transmission Pipeline         Willow Creek Booster Station         Beaver Dam Early Park Road 8" Supply Pipeline         Harper Ward Well B Test Well         Production Well B         Pump and Wellhouse for Well B         Pump and Wellhouse for Well B         Reverse Osmosis Water Treatment Plant         12-inch Pipline between WTP and west Tremonton         2 Freeway crossings between WTP and west Tremonton         12-inch Pipeline in between 2300 W 1000 N and 12000 N Pump Station         Test Well for Bear River Production Well A         Bear River Production Well A         Pump and Wellhouse for Bear River Production Well A         Test Well for Bear River Production Well A         Bear River Production Well B         Pump and Wellhouse for Bear River Production Well B         Bear River Production Well B         Pump and Wellhouse for Bear River Production Well B         Add 3rd Pump for Collinston Booster Stations         8-inch 2400 W Transmission Pipeline         8-inch HWY 38 Pipeline between 12950 N and 14530 N         Harper Ward Storage Reservoir         Harper Ward Well C Test Well	1 e 1 e 2,100 f 14,600 f 1 e 6,900 f 1 e 1 e 33,700 f 33,700 f 16,900 f 16,900 f 1 e 1 e 1 e 1 e 2 e 11,400 f 10,000 f 10,000 f 1 e	ea.       \$30         ea.       \$31         t.	00,000 50,000 \$44 \$51 50,000 0,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 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8-inch</li> <li>assumed 8-inch</li> <li>750,000 gallon storage reservoir</li> </ul>
Harper-Ward 20 + year projec M & I Bothwell Collinston	Flat Canyon Test Well Flat Canyon Production Well Pump and Wellhouse for Flat Canyon Well 10-inch Flat Canyon Well Pipeline 12-inch Willow Creek 14400 N Transmission Pipeline Willow Creek Booster Station Beaver Dam Early Park Road 8" Supply Pipeline Harper Ward Well B Test Well Production Well B Pump and Wellhouse for Well B Cts Reverse Osmosis Water Treatment Plant 12-inch Pipline between WTP and west Tremonton 2 Freeway crossings between WTP and west Tremonton 12-inch Pipeline in between 2300 W 1000 N and 12000 N Pump Station Test Well for Bear River Production Well A Bear River Production Well A Pump and Wellhouse for Bear River Production Well A Test Well for Bear River Production Well B Bear River Production Well B Pump and Wellhouse for Bear River Production Well B Bear River Production Well B Pump and Wellhouse for Bear River Production Well B Bear River Production Well B Pump and Wellhouse for Bear River Production Well B Bear River Production Well B Pump and Wellhouse for Bear River Production Well B Add 3rd Pump for Collinston Booster Stations 8-inch 2400 W Transmission Pipeline 8-inch HWY 38 Pipeline between 12950 N and 14530 N Harper Ward Storage Reservoir	1 e 1 e 2,100 f 14,600 f 1 e 6,900 f 1 e 1 e 33,700 f 16,900 f 16,900 f 16,900 f 1 e 1 e 1 e 1 e 2 e 1 4,600 f 1 e 1 e 1 e 1 e 1 e 1 e 1 e 1 e	ea.       \$30         ea.       \$31         t.	00,000 50,000 \$44 \$51 50,000 00,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 50,000 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admin and legal costs</li> <li>Assume 500 total feet of crossings, 14-inch DIPS DR 11 pipeline</li> <li>\$50 per inch-foot for well cost, 12" casing, 500 feet</li> <li>\$50 per inch-foot for well cost, 12" casing, 500 feet</li> <li>assumed 8-inch</li> <li>assumed 8-inch</li> </ul>

Notes: 1. Projects Costs in 2016 dollars

Total:

\$28,758,625