MUNICIPAL AND INDUSTRIAL
WATER SUPPLY AND USES
in the
UTAH LAKE BASIN

(Data Collected for Calendar Year 2005)

Prepared by

Utah Department of Natural Resources
Division of Water Resources

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Dennis J. Strong, Director

TABLE OF CONTENTS

ACKNOWLEDGMENTS i

TABLE OF CONTENTS iii

LIST OF FIGURES v

LIST OF TABLES vii

EXECUTIVE SUMMARY xi

INTRODUCTION 1
- Authority 1
- Scope 1
- Data Collection 3
- General Description of the Basin 3

WATER SUPPLY AND USE METHODOLOGY 11
- Background 11
- Data Collection Methodology for Community Water Systems 12
- Data Collection Methodology for Non-Community Water Systems 19
- Data Collection Methodology for Self-Supplied Industrial 19
- Data Collection Methodology for Private Domestic Water Systems 20

DEFINITIONS OF WATER TERMS 21
- Water Supply Terms 21
- Types of Water 21
- Water System Categories 22
- Water Use Terms 23
- Other Water Terms 24

WATER RIGHTS IN THE UTAH LAKE BASIN 27

JUAB COUNTY M&I WATER SUPPLIES AND USES 29

SUMMIT COUNTY M&I WATER SUPPLIES AND USES 35

UTAH COUNTY M&I WATER SUPPLIES AND USES 41

TABLE OF CONTENTS (Continued)

WASATCH COUNTY M&I WATER SUPPLIES AND USES 51

APPENDIX A – OREM CITY WATER USE DATA FORM 59

APPENDIX B – UTAH LAKE BASIN DEPLETIONS 67

LIST OF FIGURES

Figure **Page**

1 Location of the Utah Lake Basin in Utah 2

2 Utah Lake Basin Drainage Map 5

3 Location of Public Water Systems of the Utah Lake Basin 9

4 Water Supply and Use Hydrograph 15

LIST OF TABLES

Table		Page
I	Utah Lake Basin Reliable Potable Water Supplies for Public Community Systems	xii
II	Utah Lake Basin Water Use for Public Community Systems	xiii
III	Utah Lake Basin Average Per Capita Water Use	xiv
IV	Utah Lake Basin Total M&I Water Use for all System Categories	xv
V	Utah Lake Basin M & I Deliveries and Depletions	xvi
1	Juab County Maximum Potable Water Supplies for Public Community Systems	29
2	Juab County Reliable Potable Water Supplies for Public Community Systems	30
3	Juab County Water Use For Public Community Systems	31
4	Juab County Secondary Water Use Within Public Community Water Systems Service Areas	32
5	Juab County Average Gallons Per Capita Per Day (GPCD) Water Use for Public Community Systems	33
6	Juab County Water Use for Public Non-Community Systems, Self-Supplied Industries and Private Domestic Systems	34
7	Summit County Maximum Potable Water Supplies for Public Community Systems	35
8	Summit County Reliable Potable Water Supplies for Public Community Systems	36

LIST OF TABLES (Continued)

9 Summit County Water Use for Public Community Systems 37

10 Summit County Secondary Water Use Within Public Community Water Systems Service Areas 38

11 Summit County Average GPCD Water Use for Public Community Systems 39

12 Summit County Water Use For Public Non-Community Systems, Self-Supplied Industries and Private Domestic Systems 40

13 Utah County Maximum Potable Water Supplies for Public Community Systems 42

14 Utah County Reliable Potable Water Supplies for Public Community Systems 43

15 Utah County Water Use For Public Community Systems 44,45

16 Utah County Secondary Water Use Within Public Community Water Systems Service Areas 46

17 Utah County Average GPCD Water Use for Public Community Systems 47

18 Utah County Water Use For Public Non-Community Systems, Self-Supplied Industries and Private Domestic Systems 48

19 Wasatch County Maximum Potable Water Supplies for Public Community Systems 51

20 Wasatch County Reliable Potable Water Supplies for Public Community Systems 52

21 Wasatch County Water Use For Public Community Systems 53

LIST OF TABLES (Continued)

22 Wasatch County Secondary Water Use Within Public Community Water Systems Service Areas 54

23 Wasatch County Average GPCD Water Use for Public Community Systems 55

24 Wasatch County Water Use For Public Non-Community Systems, Self-Supplied Industries and Private Domestic Systems 56

EXECUTIVE SUMMARY

The purpose of this report is to document the municipal and industrial (M&I) water system supplies and uses within the Utah Lake Basin during the calendar year of 2005. These water systems deliver culinary (potable) and/or secondary (non-potable) water and have been separated into four categories, as defined on page 18 of this report. The four categories are public community, public non-community, self-supplied industrial and private domestic water systems. Water supplies, under the current hydrologic and each systematic condition, are evaluated for only potable water service in public community water systems.

The base data for both water supply and uses of public community water systems was provided by each of the water systems. Data for the other categories of water systems was compiled by also using various other agencies and references.

M&I water uses, for the basin, were then totaled and tabulated by county. Portions of the counties of Juab, Summit, Utah, and Wasatch, are contained within the Utah Lake Basin.

Public Community Water Systems

Of the aforementioned categories, public community systems serve about 95 percent of all residents in the State of Utah. Within the Utah Lake Basin, approximately 98 percent of the population is served by 55 public community water systems. Refer to **Figure 3** on page 9 for a location map of these systems, as well as the general boundaries of the basin.

For planning purposes, accurate and detailed current water use and supply information is invaluable in determining the ability of the basin to meet future water demands. The Division of Water Resources (DWRe) uses the annual reliable potable water supply, as defined on page 13, as a tool to quantify the amount of water that can be delivered by each public community water system to satisfy current and projected peak day demands with present water supply conditions.

In the Utah Lake Basin, it was determined that the current annual reliable potable water supply is 163,232 acre-feet. Springs account for 23 percent, wells 58 percent, and surface water 19 percent of this supply. The breakdown of this supply is presented in the following **Table I**.

TABLE I
UTAH LAKE BASIN
Reliable Potable Water Supplies for Public Community Systems
(Acre-feet/year)

County	Springs	Wells	Surface	Total
Juab	1,156	1,619	0	**2,775**
Summit	221	180	0	**401**
Utah	32,204	91,010	26,350	**149,564**
Wasatch	4,171	1,821	4,500	**10,492**
Basin Totals	**37,752**	**94,630**	**30,850**	**163,232**

M&I water use, within these systems, can be subdivided by two types of water: potable (culinary) and non-potable (secondary). Potable water is delivered by the public community system itself. However, secondary water can be delivered not only by the system, but also by separate irrigation companies, exclusively in some locations.

Table II, on the following page, shows public community system water use data for both potable and non-potable categories within the Utah Lake Basin. Categorically, the percentage of total water use is 27% residential indoor, 42% residential outdoor, 15% commercial, 12% institutional, and 4% light industrial/stockwatering.

TABLE II
UTAH LAKE BASIN
Water Use for Public Community Systems
(Acre-Feet/Year)

Source	Juab County	Summit County	Utah County	Wasatch County	Total
Potable Uses					
Residential Indoor	520.3	69.0	31,414.9	1,342.4	**33,346.6**
Residential Outdoor	720.5	140.0	27,586.2	1,323.3	**29,770.0**
Commercial	10.5	5.4	15,518.2	350.4	**15,884.5**
Institutional	118.0	10.6	10,686.4	270.0	**11,085.0**
Industrial	350.5	5.0	4,235.2	90.0	**4,680.7**
Total Potable	**1,719.8**	**230.0**	**89,440.9**	**3,376.1**	**94,766.8**
Non-Potable Uses					
Residential	450.0	55.0	21,222.9	833.0	**22,560.9**
Commercial	0.0	0.0	3,090.0	250.0	**3,340.0**
Institutional	50.0	10.0	3,135.0	70.0	**3,265.0**
Industrial	0.0	0.0	252.0	0.0	**252.0**
Total Non-Potable	**500.0**	**65.0**	**27,699.9**	**1,153.0**	**29,417.9**
TOTAL WATER USE	**2,219.8**	**295.0**	**117,140.8**	**4,529.1**	**124,184.7**

In general, and specifically for this report, all per capita water use figures refer to the water use within public community water systems only. Out of a total basin population of 482,080 in 2005, approximately 476,710 people were served by the public community systems. For these systems, residential potable per capita water use calculates to 118 gallons per capita per day (gpcd). Similarly, non-potable residential water use calculated to 42 gpcd. The resultant total per capita water use is 160 gpcd for residential purposes within the public community systems of the basin. With the addition of water use in the commercial, institutional and industrial categories, the per capita water use for public community systems is 177 gpcd for potable and 82 gpcd for non-potable water, for an overall water use of approximately 233 gpcd. Comparatively, in 2005, the statewide average per capita water use was 190 gpcd potable and 70 gpcd non-potable, for a total of 260 gpcd. These per capita values are summarized in the following **Table III.**

TABLE III
UTAH LAKE BASIN
Average Per Capita Water Use for Public Community Systems

CATEGORY	Average Per Capita Use (Ac-Ft/Yr)	Average Per Capita Use (GPCD)
Residential Potable Use	0.132	118
Residential Potable Plus Secondary Use	0.180	160
Total Potable Use	0.199	177
Total Potable Plus Secondary Use	0.261	233

Total M&I Water Use

Table IV, on the following page, shows the total potable and non-potable M&I water use for all system types in the Utah Lake Basin for the year 2005. As can be seen, public community systems deliver the majority of the potable water used within the basin. The table indicates that the total potable M&I water use in 2005 was 101,551 acre-feet. Total non-potable M&I water use in 2005 for the basin was 40,406 acre-feet. Therefore, total M&I water use for all system categories and types of water in 2005, for the Utah Lake Basin, was 141,957 acre-feet.

TABLE IV
UTAH LAKE BASIN
Total M&I Water Use for all System Categories
(Acre-Feet/Year)

	Juab County	Summit County	Utah County	Wasatch County	Total
Potable Use					
Public Community Systems	1,719.8	230.0	89,440.9	3,376.1	**94,766.8**
Public Non-Community Systems	2.0	4.1	262.8	115.4	**384.3**
Self-Supplied Industries	15.0	0.0	675.0	0.0	**690.0**
Private Domestic	200.0	10.0	5,000.0	500.0	**5,710.0**
Total Potable	**1,936.8**	**244.1**	**95,378.7**	**3,991.5**	**101,551.1**
Secondary Use					
Secondary Irrigation Companies	500.0	65.0	27,699.9	1,153.0	**29,417.9**
Non-Community Systems	0.0	10.0	21.5	855.0	**886.5**
Self-Supplied Industries	400.0	0.0	9,702.0	0.0	**10,102.0**
Private Domestic	0.0	0.0	0.0	0.0	**0.0**
Total Secondary	**900.0**	**75.0**	**37,423.4**	**2,008.0**	**40,406.4**
TOTALS	**2,836.8**	**319.1**	**132,802.1**	**5,999.5**	**141,957.5**

M&I Water Deliveries and Depletions

On the following page, **Table V** shows both the deliveries and depletions for all the M&I water in the basin. The information contained in the table is very useful for overall water planning purposes. See pages 23-25 for detailed definitions of the terms used. In **Appendix B**, there is a table that contains a breakdown of all the deliveries and depletions of each public community water system, as well as all other categories of water systems, within the basin.

TABLE V
UTAH LAKE BASIN
M&I Deliveries and Depletions
(Acre-Feet/Year)

COUNTY	Deliveries			Depletions		
	Indoor Use	Outdoor Use	Total	Indoor Use	Outdoor Use	Total
Juab	1,175.2	1,451.6	**2,626.8**	765.4	967.7	**1,733.1**
Summit	85.0	234.1	**319.1**	10.5	156.1	**166.6**
Utah	61,554.4	71,247.7	**132,802.1**	15,941.6	46,935.2	**62,876.8**
Wasatch	1,965.7	4,033.8	**5,999.5**	376.7	2,689.2	**3,065.9**
Basin Totals	**64,780.3**	**76,967.2**	**141,747.5**	**17,094.2**	**50,748.2**	**67,842.4**

INTRODUCTION

Authority

The Utah Division of Water Resources (DWRe) has the overall responsibility for completing studies, investigations, and plans to assist the responsible development and utilization of the water resources of the state of Utah. The State Water Plan, prepared and distributed in early 1990, provided the foundation and overall direction to establish and implement the state policy framework of water management. As part of the state water planning process, detailed plans are prepared for the 11 hydrologic basins in the state. The Utah Lake Basin is one of these 11 basins. A location map of the Utah Lake Basin is shown on the following page in **Figure 1**.

Each basin water plan identifies potential conservation and development projects and describes alternatives to efficiently satisfy the water needs of that basin. As part of this effort, background data reports are completed for each river basin. These include a Water-Related Land Use Report and a Municipal & Industrial (M&I) Water Supply & Use Report.

Scope

As stated earlier, the subject of this report is a determination of the present M&I water supplies and uses within the Utah Lake Basin. The data presented in all the referenced reports may be used in the State Water Plan for the Utah Lake Basin, as well as other DWRe reports and studies. Information considered for this report also includes related investigations recently completed by the DWRe and the Utah Division of Water Rights (DWRi).

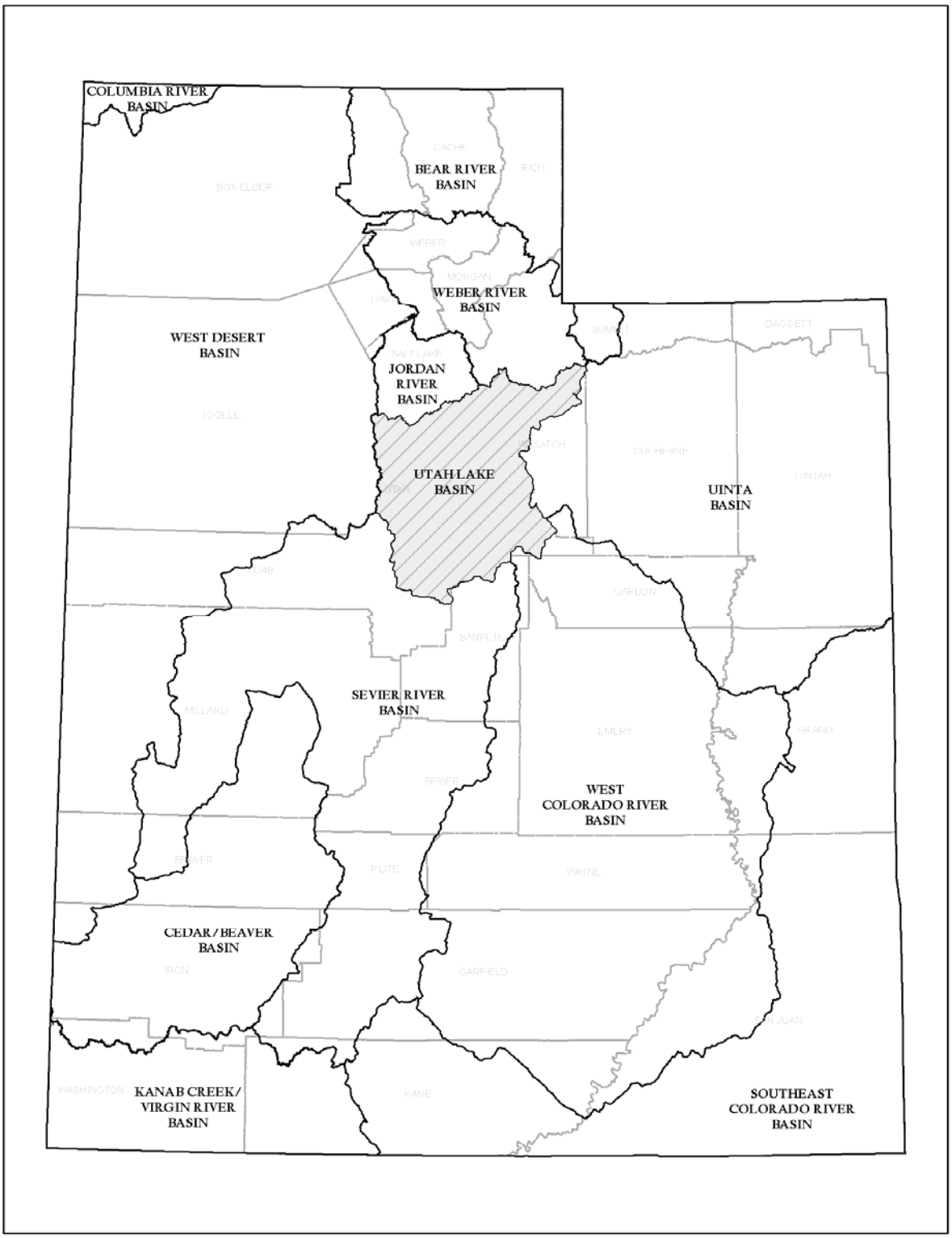


Figure 1. Location of the Utah Lake Basin

Data Collection

This study was begun in May 2006 by DWRe staff. The 2005 *Municipal and Industrial Water Use Forms,* as well as electronically submitted data, distributed by the DWRi in cooperation with the DWRe and the Utah Division of Drinking Water (DDW), were used as a basis for the study. In all counties, the data collection process is as described in the following section, *Water Supply and Use Methodology*. Water rights discussions and information presented herein were prepared based, in part, on information provided by John Mann, area engineer of the State Engineer's Office, who is responsible for the over sight of the water rights in the Utah Lake Basin.

General Description of the Basin

The Utah Lake Basin contains almost 3,850 square miles in north-central Utah bounded by the Traverse Mountains on the north, the Wasatch and Uintah Mountains on the east and south, and the East Tintic and Oquirrh mountains on the west. The basin encompasses most of Utah and Wasatch Counties, parts of Summit, Sanpete, and Juab Counties. The land within the basin rises from a low elevation of 4,475 feet above sea level at the Jordan Narrows to 11,928 feet at Mt. Nebo at the southern end of the basin.

The major waterways of the basin include the American Fork, Provo, Spanish Fork, and Jordan Rivers. With the exception of the Jordan River, Utah Lake is the main water body of the basin into which all the waterways within the basin drain. Being the only outlet of Utah Lake, the Jordan River drains north into the Great Salt Lake. See **Figure 2** on page 5 for a detailed drainage map of the basin.

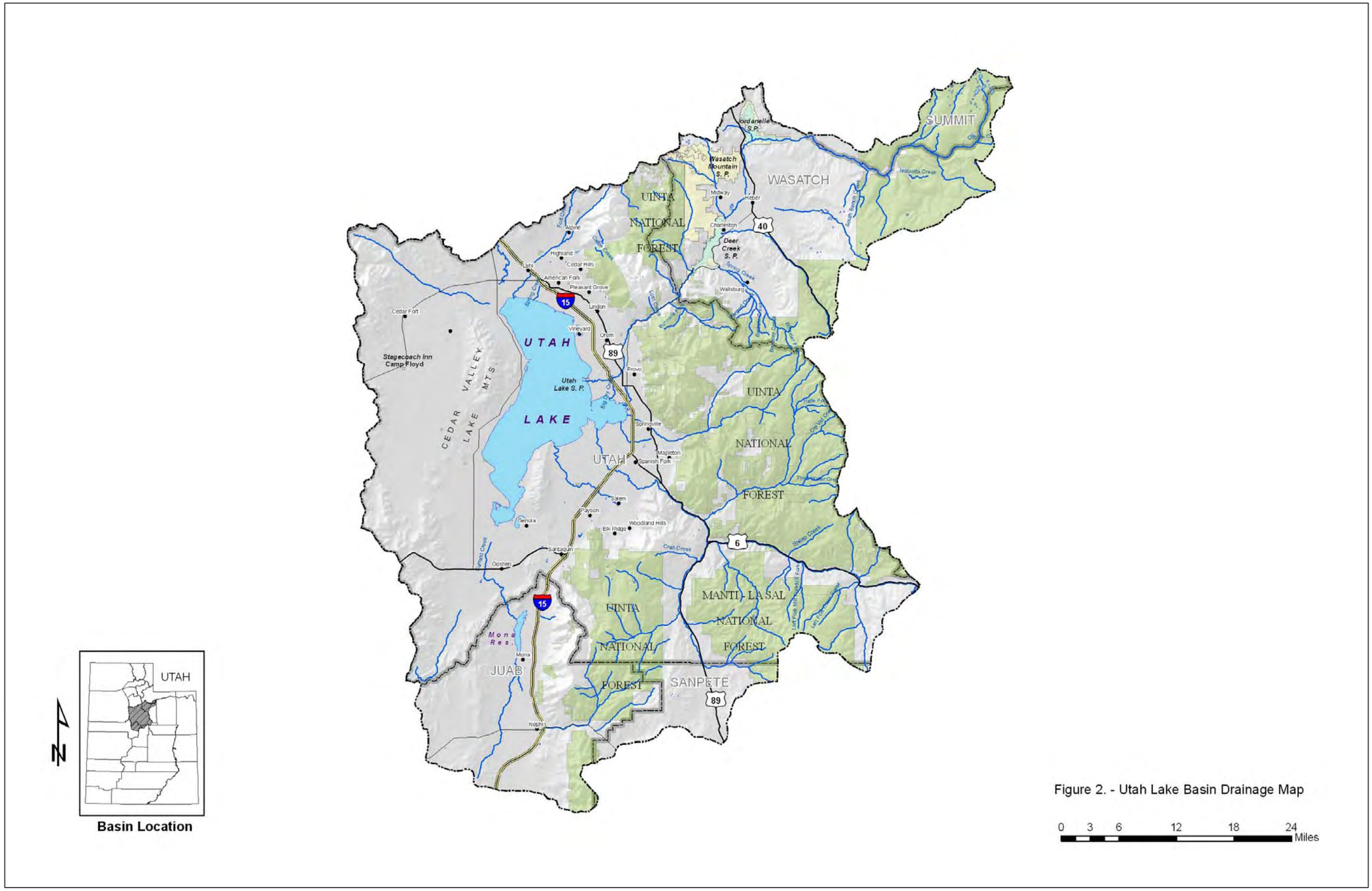


Figure 2 – Utah Lake Basin Drainage Map

Within the Utah Lake Basin, there are 55 public community water systems serving a total population of approximately 476,710 people (most all of the 482,080 total basin population). The basin also has 74 public non-community water systems. These systems serve Federal Forest Service campgrounds, State Park facilities, isolated commercial and institutional establishments, summer home developments, roadside rest areas and parks. Among the larger non-community systems is the Deseret Feed Lot owned by the LDS church. See **Figure 3** on page 9 for the location of these systems. Within the basin there are also twelve self-supplied industries.

As with most areas of northern Utah, demographically, the basin's population is becoming increasingly more urbanized. Internal growth, migration of the Wasatch Front population, expanding employment and recreational opportunities are some of the major driving factors of population growth in the basin. The Governor's Office of Planning and Budget projects that the basin's population will more than double from the current population to over 1,000,000 people by the year 2050.

PUBLIC COMMUNITY SYSTEMS

Juab County

1 Mona
2 Nephi
3 Rocky Ridge Town

Summit County

4 Francis Town Water System
5 Woodland Mutual Water Co.

Utah County

6 Alpine
7 Alpine Cove Water SSD
8 American Fork City
9 Bradford Acres Water Assoc.
10 Cedar Fort
11 Cedar Hills
12 Covered Bridge Canyon
13 Eagle Mountain Town
14 Elberta
15 Elk Ridge
16 Fairfield Irrigation Company
17 Genola
18 Goosenest Water Co.
19 Goshen
20 Hidden Creek Water Company
21 Highland Water Co.
22 Lehi
23 Lindon
24 Manila Culinary Water Co.
25 Mapleton
26 North Fork SSD
27 Orem City
28 Payson
29 Pleasant Grove City
30 Provo City
31 Salem
32 Santaquin City
33 Saratoga Springs Municipal
34 Spanish Fork
35 Spring Lake
36 Springdell Plat A & B
37 Springville City
38 Utah State Hospital
39 White Hills Subdivision
40 Woodland Hills

Wasatch County

41 Canyon Meadows
42 Center Creek Water System
43 Charleston WCD
44 Country Estates Mobile Homes
45 Daniel Domestic Water Company
46 Heber City Water System
47 Interlaken Mutual Water Company
48 Jordanelle Special Service District
49 Midway City Water System
50 Storm Haven
51 Swiss Alpine Water Co.
52 Timber Lakes Water SSD
53 Twin Creeks SSD
54 Wallsburg Town Water System
55 Woodland South Hills Irrigation

PUBLIC NON-COMMUNITY SYSTEMS

Juab County

A Bear Canyon Campground
B Ponderosa Campground

Summit County

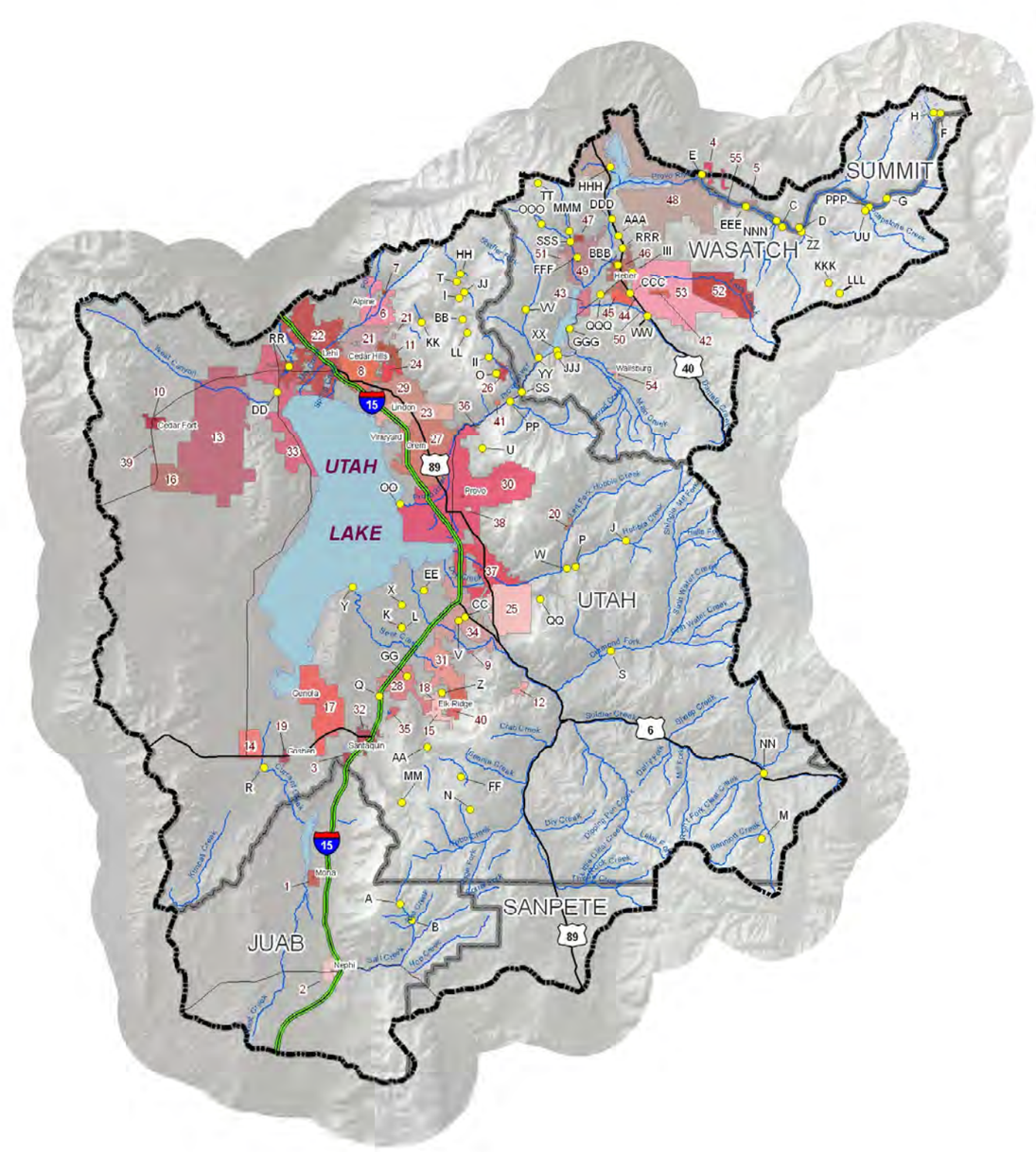
C Camperworld Knotty Pine
D Diamond Bar X
E Lemon Grove
F Lost Creek-Lily Lake CG
G Shady Dell/Soapstone CG
H Trial Lake CG

Utah County

I American Fork Recreation Site
J Balsam Campground
K Benjamin LDS Ward
L Benjamin Park
M Bennion Creek Campground
N Blackhawk Campground
O Brickerhaven
P Cherry Picnic Site
Q Christian Assembly
R Desert Feed Lot
S Diamond Fork Creek - CG
T Granite Flat Campground
U Hope Campground
V Jehovah's Witness Church
W Jolley Park
X Lake Shore Ward
Y Lincoln Beach
Z Loafer Water Users Assoc.
AA Maple Bench Campground
BB Mutual Dell
CC New Haven
DD New Haven Saratoga
EE Palmyra LDS Ward
FF Payson Lakes Campground
GG Payson W Stake 12/13 Wards
HH Silver Lake Summer Homes
II Theater in the Pines & Mt. Timp.
JJ Tibble Fork Summer Homes
KK Timpanogos Visitor Center
LL Timpooneke Campgrounds/GS
MM Tinney Flat Campground
NN Tucker Rest Area
OO Utah Lake State Park
PP Vivian Park Homeowners
QQ Whiting Campground
RR Willow Park
SS Wildwood Subdivision

Wasatch County

TT Camp Cloud Rim (Utah Girl Scouts)
UU Camp Roger YMCA
VV Cascade Springs
WW Daniel Summit Estates
XX Deer Creek Park
YY Deer Creek State Park
ZZ Diamond Hills Association
AAA Heber City Kingdom Hall
BBB Heber East Stake Center
CCC Heber Ranger Station
DDD Heber Valley RV Park
EEE Holladay-Mt. Olympus Camp
FFF Homestead Resort - Golf Course
GGG Island Beach
HHH Jordanelle State Park
III Lake Creek Rec. Properties
JJJ Little Deer Creek Camp
KKK Mill Hollow Campground
LLL Mill Hollow Education Center
MMM Oak Haven
NNN Oakcrest LDS Girls Camp
OOO Snake Creek Mutual Water
PPP Soapstone Summer Homes
QQQ Solid Waste Transfer Station
RRR The Other End
SSS Wasatch Mountain State Park



Basin Location

Figure 3. Location of Public Water Systems

WATER SUPPLY AND USE METHODOLOGY

Background

Over the past 45 years the Utah Division of Water Resources (DWRe) has employed various procedures to obtain municipal and industrial (M&I) water use data. In recent years, these procedures have become increasingly more comprehensive. When the division began water planning in the 1960's, available data consisted mainly of supplies and uses for the entire state. At that time, agriculture uses far exceeded M&I uses in Utah. M&I water use was generally calculated by using available or estimated per capita rates and multiplied by the census population data.

By the early 1980's, M&I diversions made up a larger percentage of all statewide water uses and the entire water community began to increase their focus on M&I water supplies and uses. The Utah Division of Water Rights (DWRi) launched a program to collect yearly, statewide M&I data from each public community water system. The procedure involved mailing a survey designed to query each of the major public water suppliers about their sources of water supply. Additionally, the United States Geological Survey (USGS) began M&I water use studies. The division relied on both data sources in its planning efforts by the late 1980's.

With the preparation of the State Water Plan Basin reports, and the increasing focus on water conservation, the DWRe saw the need to verify and improve the quality and quantity of the available data. The first method used included assisting the DWRi in the improvement of their M&I data collection program. Secondly, the DWRe began verifying the accuracy of the data through yearly field surveys described in the following four sections.

Data Collection Methodology for Community Water Systems

Each year, the DWRe targets several hydrologic basins for M&I water supply and use analysis. The most recent water use information supplied by the DWRi is the basis used to begin the study. Prior to 2003, each water supplier, using a standard form, submitted this information. An example of the water use data form for Orem City is found in **Appendix A**. Since 2003, the program has been updated, allowing for the water suppliers to electronically submit their data.

The DWRe staff contact the manager or operator of each community water system, as defined by the Utah Division of Drinking Water (DDW) to schedule a data collection and analysis meeting. These meetings are necessary because data often is not reported (either on the water use forms or electronically) in the detail required for a complete M&I water use study. During these meetings, staff clarifies and collects additional data as needed. Total water supply and usage of the water systems are calculated based on information gathered during these meetings. When data is not available, it is necessary to estimate a part or all of the system use.

A secondary objective of these meetings is to instruct the operator or manager on how to most accurately and effectively complete the water use data form and/or submit their information electronically. This methodology has been used since 1992.

Water Supply

Potable Water

Two factors define the potable water supply for public community water systems: maximum developed potable water supply available under present conditions and reliable potable water supply. The maximum developed potable water supply available under present conditions is defined as the water resource that is presently being utilized. It is limited by a mechanical constraint (such as pump

capacity or pipe size), a hydrologic constraint (such as reliable stream flow or groundwater safe yield) or a legal constraint (such as a water right or legal contract). **The lesser amount of water supply, due to these three constraints, is considered to be the maximum developed potable water supply available under present conditions used in this analysis.**

The determination of well pump capacities, average annual spring flow estimates, treatment plant capacities, and water right information aid in the calculation of this value. It should be noted that, due to the complexity of water rights, contracts, exchanges, etc., a detailed search of water right limitations associated with each entity is not within the scope of this study.

The reliable potable water supply is defined as the capacity to meet peak day demands, expressed as an annual volume. It is valuable in determining future water supply capacities of the particular community water system sources (wells, springs, etc.). **The reliable potable water supply is calculated by adding together the maximum developed water supply capacity of surface sources, one-half of the maximum yield of wells or their pump capacities (unless otherwise indicated by the system manager), and a percentage of the average annual flow of spring sources.** The percentage of the spring source flows range between 50% and 100%. The determination of the percentage is based on information provided by the water supplier.

On page 15, **Figure 4** graphically presents the relationship between the maximum developed potable water supply and the reliable potable water supply of a system. By quantifying the maximum developed and the reliable potable water supply of a system, the total population that a system may potentially support can be determined. The current total yearly water use is the volume under the lower curve (*Present Water Use Pattern*). The future total yearly water use is the volume under the upper curve (*Future Water Use Pattern*). The latter volume is equivalent to the reliable developed potable water supply.

The maximum developed potable water supply under present conditions is the volume under the upper line (*Maximum Water Supply*) in **Figure 4**. This amount is a theoretical annual volume based upon a maximum daily flow rate (limited by the water right or system capacity). Consequently, the peak day demand point on the future water use curve (*Future Peak Day Demand*) cannot exceed this upper limit. Due to the fluctuating nature of some sources (particularly springs), and the fact that most culinary water system storage tanks are designed to store only about one day of water demand, not all of the total maximum developed potable water supply is available to meet future water needs.

It is important to note that the reliable potable water supply is a theoretical annual volume based upon the current daily peak demand flow rate of any one system, under its current demand conditions. Additional supply may be made available by lowering and/or increasing the size of existing well pumps, pumping existing wells for longer durations, increasing storage capacity and/or distribution pipe sizes. However, being based only on current conditions, these systematic changes may cause operational problems during times of peak demand. Therefore, the DWRe uses the reliable potable water supply only as a reference tool to quantify the annual amount of water that can be delivered by each community water system.

For planning purposes, the reliable potable water supply is essential for estimating what population base each system can theoretically support with current demand patterns. It is also a guideline to help predict the approximate timing of future system improvements in order to meet any increase in demand.

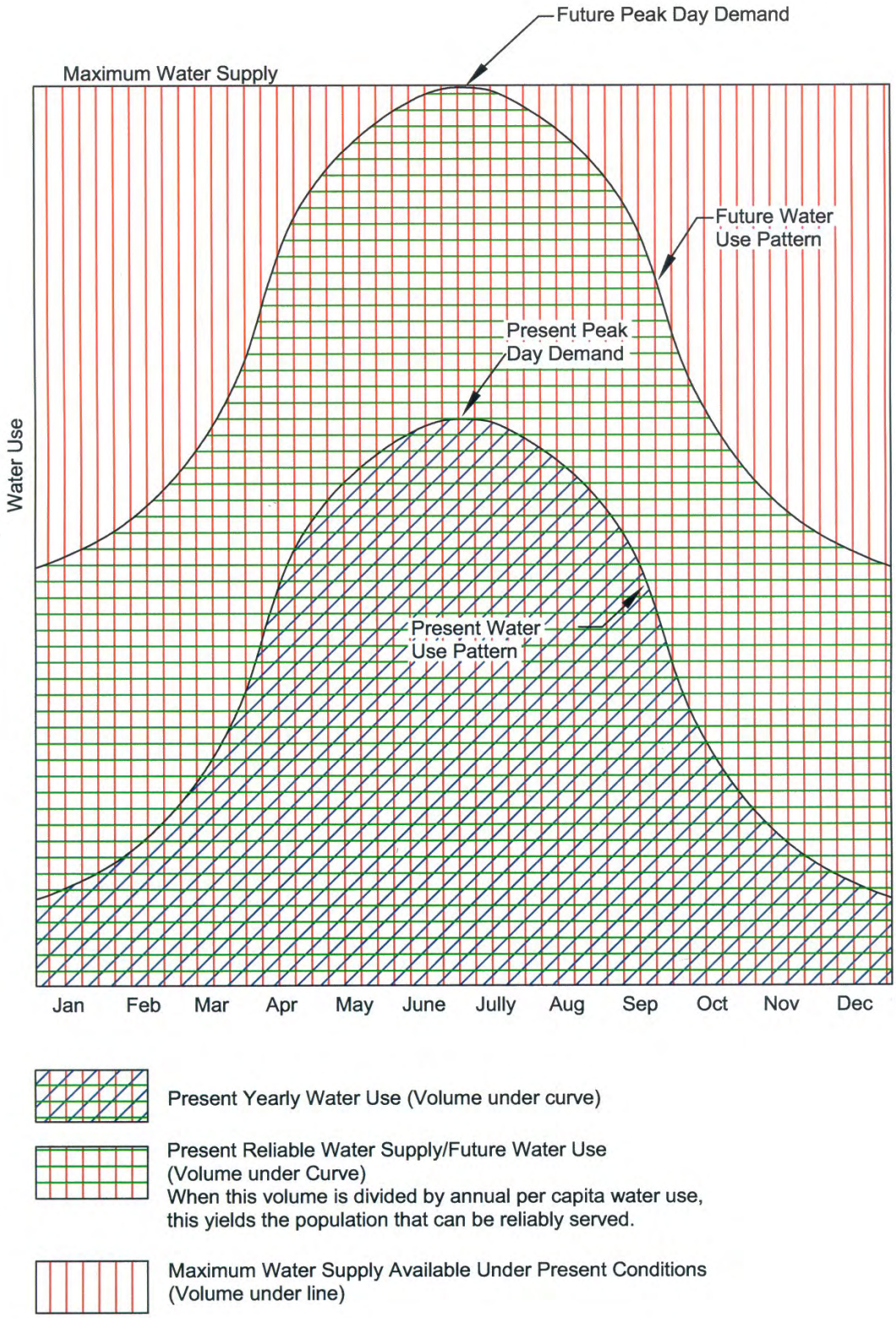


Figure 4. Water Supply and Use Hydrograph

Secondary Water

Deliveries of non-potable (secondary) water are an important component of the water use within the boundaries of public community water systems. However, quantifying the available supply of this water is difficult. In Utah, many of the secondary water systems are part of a larger agricultural irrigation system. Hence, the theoretical supply includes both agricultural and M&I water. Currently, separating M&I secondary from agricultural water is mostly estimated, due to the lack of and/or absence of metering, particularly at the level of individual property connections.

With secondary water use becoming more prevalent for outdoor landscaping, estimating the available supply of this water is becoming increasingly more important. **For planning purposes, the DWRe assumes that the supply for M&I secondary irrigation is simply equal to the current use.**

Water Use

Present water use, as defined herein, is the developed water supply that is actually delivered by the distribution system from surface or subsurface sources. Water use is divided into four categories: residential, commercial, institutional and industrial.

Residential

The staff collects data about the number of residential connections and the amount of water used by those connections from a water system representative. Water use in this category is divided into three subcategories: culinary-outdoor, culinary-indoor, and secondary-outdoor. While most systems will meter the total culinary residential water use, indoor and outdoor use are rarely metered separately. Secondary water use is rarely metered. Therefore, the DWRe usually estimates these subcategory totals.

Typically, culinary indoor use will be estimated first. One method to estimate the indoor use is to review residential meter reading totals for the system from the winter months, if available. Since outdoor watering typically does not occur during the winter months, it can be assumed that the water used in winter months is for indoor use only. The winter water use is then used to determine the total yearly indoor use.

When the above method does not yield a reasonable value for indoor use, the per capita indoor water use for a system can be estimated by using an equation that was developed in a detailed residential study, “Identifying Residential Water Use”, completed by the DWRe in 2001. The mathematical equation that was developed is as follows:

$$GPCD_{Indoor} = 90.3 / P_{PH} + 42.3$$

where:

$GPCD_{Indoor}$ = gallons per capita day (per capita indoor water use)

P_{PH} = persons per household (US Census Bureau)

The total yearly indoor water use is then calculated for the system by multiplying the result of the above equation by the current population. Outdoor culinary water use can then be estimated by subtracting the total yearly indoor water use from the given total residential culinary water use.

Because very few entities meter secondary outdoor water use, the DWRe staff estimates the outdoor secondary water use by using the average lot size, percent irrigated, percent of residences that are supplied by separate secondary (pressurized and ditch) irrigation systems, water right-duty rates (volume of water required for turf growth) in the area, and other related information for each system. In determining residential secondary use, care is taken to not include irrigation water use for small pastures or farm fields that can often be found adjacent to residences, particularly in rural communities.

Commercial

For most systems, the system operator can separate metered commercial water use data from the total water use. In cases where this data is not available, or is extremely difficult to obtain, the DWRe staff attempts to estimate commercial water use by inventorying commercial businesses in the area and using published commercial water use estimates. The DDW and the Utah State Water Lab, among others, publish these estimates. In some rural communities where there are a relatively small number of commercial connections, the businesses are visited individually by the DWRe staff and asked about their water use.

Some commercial facilities use secondary water to irrigate outside landscapes. This is especially typical for commercial golf courses. Again, it is typical that secondary water is not metered. The DWRe staff estimates this use by multiplying the size of the irrigated area by a water right-duty rate or the evapotranspiration (ET) rate with assumed application efficiency percentage. The ET used is indicative of the amount of water, in inches, necessary for turf growth.

Institutional

Institutional water use is water used for city, county, state and federal government facilities, parks, municipal golf courses, schools, hospitals, churches, military facilities, as well as fire hydrant testing and other municipal losses in the water system. Because this water use is often not metered, the process to acquire this data is difficult. The system operator is asked to provide information about city facilities such as the number and size (irrigated acreage) of parks, schools, churches, and municipal golf courses. Water right-duty rates and/or the ET, with appropriate efficiencies, are used to calculate the amount of water that is needed to irrigate these areas. Estimates of leakage and water use for testing of system facilities are also included in this category.

Industrial

Industrial water use is defined as water used in the production of a product. Therefore, such commercial establishments as dairies, mink farms, and

greenhouses, as well as stockwatering, are included in this category, provided a community water system serves them. Industrial water use within community water systems is calculated with the same process used to calculate commercial water use data discussed earlier.

Data Collection Methodology for Public Non-Community Water Systems

The DWRe staff attempts to contact each non-community system and/or make a personal visit to these systems. Non-community systems rarely meter their water use, so the DWRe staff estimate the annual water use. Questions are asked to determine the types of facilities on the system, population served, water source information, irrigation of outside areas, etc. This data, along with information found in water-related publications, is used to determine water use. The maximum and reliable water supplies for these systems are relatively small, often not available and are therefore not included in this study. However, for planning purposes, the DWRe assumes that the water supply for these systems is equal to their water use.

Data Collection Methodology for Self-Supplied Industrial Water Systems

Although self-supplied industries are included in the Non-Community Water Systems category as defined by the DDW, the DWRe has divided them into a separate category due to their importance. The category is equivalent to the DDW's Non-Community, Non-Transient category.

Water use is acquired for self-supplied industries by using data from the DWRi's Industrial Water Use Form and/or electronically submitted data. The DWRi collects annual water use data from most of the major self-supplied industrial water users in the state. This data is confidential. Therefore, the data presented in this M&I study is only presented as county totals. As with other non-community systems, the maximum and reliable water supplies are often not available and are not in the scope of this study. For planning purposes, the DWRe assumes that the water supply for these systems is equal to their water use.

Data Collection Methodology for Private Domestic Water Systems

Private domestic systems are residences that are not connected to any public community or non-community water system. They are usually supplied by individual wells. To determine the water use data for this category, the population of those served by private domestic systems is estimated. This population is estimated by subtracting the population served by community water systems from the county population data acquired from the Governor's Office of Planning and Budget (GOPB). The remainder is assumed to be the population that is served by private domestic systems. The per capita water use rate for this category is assumed to be the same as the average rate for the public community system(s) residential category for that county. To determine the total water use by private domestic systems, the estimated population is then multiplied by this rate. Again, the maximum and reliable water supplies for private wells, being relatively small, are not in the scope of this study. Similarly, for planning purposes, the DWRe assumes that the water supply for these systems is equal to their water use.

DEFINITIONS OF WATER TERMS

Water is supplied by a variety of systems for many types of users. The general term supply is defined as the amount of water available. Municipalities own most of the individual water supply systems. However, in some cases the owner/operator is a private company, state or federal agency. Thus, a "public" water supply may be either publicly or privately owned and supply treated and/or untreated water.

Water Supply Terms

Maximum Developed Potable Water Supply - The annual volume of potable (culinary) water which is the lesser of the hydrologic capacity of the water source, the physical capacity of the water system, or the amount allowed by the collective water rights. (See pages 12 -14 for a more detailed explanation)

Reliable Potable Water Supply - The annual volume within the maximum developed water supply that is available to meet peak demands. This is generally calculated as 100% of the maximum supply from surface water sources, 50% of the maximum yield of wells, and between 50% and 100% of the average annual spring flows. When this number is divided by the average per capita usage, the resulting number represents the theoretical maximum population that the water source can serve. (See pages 12 - 14 for a more detailed explanation)

Municipal and Industrial Water Supply - Includes all water (potable and non-potable) supplied for residential, commercial, institutional, light industry, and self-supplied industries. This supply is delivered by public community systems, public non-community (transient and non-transient) systems, self-supplied industrial systems, unregulated Indian water systems and private wells.

Types of Water

Potable Water – Includes water meeting all applicable Federal, State, and Local drinking water requirements for residential, commercial, institutional and industrial uses. It is also referred to as culinary water supply.

Secondary Water – Includes water not meeting safe drinking water requirements. It is also referred to as non-potable (non-culinary) water. This water is usually delivered by pressurized or open ditch systems for irrigation of privately and publicly owned landscapes, gardens, parks, cemeteries, golf courses and other open areas. Sometimes called "dual" water systems, they are installed to provide an alternative to irrigating with culinary water for these outdoor areas. Although Irrigation companies most often provide this water, public community systems may deliver this water as well. Self-supplied industries can also use secondary water for industrial processes.

Water System Categories

Public Community Water System - Provides potable and/or non-potable water by either a privately or publicly owned water system which serves at least 15 service connections used by year-round residents or regularly serves at least 25 year round residents. Water from the public community water supplies may be used in both indoor and outdoor applications for residential, commercial, institutional, and industrial purposes.

Public Non-Community Water System - Provides potable and/or non-potable water by either a privately or publicly owned water system of one of two types: transient and non-transient. Transient systems are systems that do not serve 25 of the same non-resident persons per day for more than six months per year. Examples include campgrounds, RV parks, restaurants, convenience stores, etc. Non-transient systems are systems that regularly serve 25 of the same non-resident persons per day for more than six months per year. Examples include churches, schools and industries. This report categorizes industrial non-transient systems as self-supplied industries.

Self-Supplied Industrial System - Provides potable and/or non-potable water for use by individual privately owned industries (usually from their own wells or springs).

Private Domestic System – Provides potable and/or non-potable water from privately owned wells and/or springs for use by individual homes.

Water Use Terms

Water is used in a variety of ways and for many purposes. It is often said that water is "used" when it is diverted, demanded, withdrawn, depleted or consumed. But it is also "used" in place for such things as fish and wildlife habitat, recreation and hydropower production. **Water use in this report is defined as "delivered" water.** A table that shows the basin's M&I water deliveries and depletions is provided in **Appendix B**.

In the previous water supply section, the word "use" can be interchanged with the word "supply" to define the current demand associated with those definitions. Some additional water use terms are as follows:

Commercial Use - Use normally associated with small business operations that may include drinking water, food preparation, personal sanitation, facility cleaning and maintenance and irrigation of facility landscapes. Examples include retail businesses, restaurants and hotels.

Industrial Use - Use associated with the manufacturing or production of products. The volume of water used by industrial businesses can be considerably greater than water used by commercial businesses. Examples include manufacturing plants, oil and gas producers, mining companies, mink farms and dairies.

Institutional Use - Use normally associated with general operation of various public agencies and institutions (i.e. schools, municipal buildings, churches) including drinking water, personal sanitation, facility cleaning and maintenance and irrigation of parks, cemeteries, playgrounds, recreational areas, golf courses, and other facilities. The amount of water used by cities for outside irrigation of public areas typically is not metered.

Residential Use - Use associated with residential cooking, drinking water, washing clothes, miscellaneous cleaning, personal grooming and sanitation, irrigation of lawns, gardens and landscapes, and washing automobiles, driveways and other outside residential facilities. Examples include single-family homes, apartments, duplexes and condominiums.

Other Water Terms

Consumption - Water evaporated, transpired or irreversibly bound in either a physical, chemical or biological process. Consumed water results in a loss of the original water supplied.

Consumptive Use - Losses of water brought about by human endeavors when used for residential, commercial, institutional, industrial, agricultural, power generation, and recreation. Naturally occurring vegetation, fish and wildlife also consumptively use water.

Deliveries - Water already within a system that is being provided to an individual connection, whether potable or non-potable and/or metered or not. The connection can be for residential, commercial, institutional, and/or industrial uses. **For the purpose of this report, the delivered water amount is equivalent to water use.**

Depletion - Water consumed and made unavailable for return to a given designated area, river system or basin. It is intended to represent the net loss to a system. The terms consumption and depletion are often used interchangeably but are not the same. For example, water exported from a basin is depletion from the basin system but is not consumed in the basin. The exported water is available for use (consumption) in another basin or system. Water diverted to irrigate crops in a given system, but not returned for later use, is depletion. Precipitation that falls on irrigated crops is not considered a part of the supply like surface water and groundwater diversions. For this reason, precipitation falling on and consumed by irrigated crops is not considered as being depletion from the system.

Diversion - Water diverted from supply sources such as streams, lakes, reservoirs or groundwater for a variety of purposes, including cropland irrigation, as well as residential, commercial, institutional and industrial uses.

Withdrawal - Water withdrawn from supply sources such as lakes, streams, reservoirs or groundwater. This term is normally used in association with groundwater withdrawal. The terms *diversion* and *withdrawal* are often used interchangeably.

WATER RIGHTS IN THE UTAH LAKE BASIN

Starting with the Morse Decree of 1901, the waters of the Utah Lake Basin began to be legally quantified and regulated as a whole. The Morse Decree defined the water rights on the Jordan River with respect to each other. Soon following, the Booth Decree of 1909 addressed water supply in both the Utah Lake and the Jordan River by allowing additional appropriations of water from Utah Lake and setting a maximum diversion of 185,000 acre feet of water annually from the storage rights set forth in the Morse Decree.

In 1921, the Provo River Decree was issued dividing the Provo River System into two divisions and classifying most of the then current water rights. The Provo Division, which includes all the area below near the head of Provo Canyon, subdivided its water rights, by priority of date issued, into Classes A through J. The Wasatch Division, which includes all the area above the Provo Division, subdivided its water rights, by date priority, into Classes First (1st) through Twentieth (20th), and "Wasatch Division Power Rights".

In 1989 there were seven memorandum decisions issued by the State Engineer regarding change applications for the Welby and Jacob districts of the Provo River Project. These decisions made it possible for the then Salt Lake County Water Conservancy District (now entitled Jordan Valley Water Conservancy District) to transfer high quality Provo River water from the Utah Lake Basin for use in Salt Lake County. The water supply for the Welby and Jacob districts was replaced under both primary and secondary storage rights in Utah Lake.

In 2004 a Record of Decision was issued by the Federal Bureau of Reclamation authorizing the Utah Lake Water Delivery System (ULS) to deliver 30,000 acre feet of M&I water to northern Utah County communities. This water was made available through numerous negotiations, planning and scoping meetings, all in cooperation with the Bureau of Reclamation's Central Utah Project (CUP), since the ULS was first

announced in 1998. Design of the project is expected to begin in 2006, with construction estimated at ten years for completion. The ULS will be the final component of the Bonneville Unit of the CUP.

Between 1992 and 2006, there have been several water management plans issued by the State Engineer for most areas of the Utah Lake Basin. These plans include the Proposed Determination of Water Rights books published beginning in 1976 for Spanish Fork Canyon, Palmyra-Lake Shore and Hobble Creek-Springville areas, the Goshen Valley, Cedar Valley, Round Valley, the American Fork River, and the Pleasant Grove subdivision. The 1992 Utah Lake Interim Water Distribution Plan outlined the general surface water source and storage use and capacities of the basin. The 1995 Utah/Goshen Valley Ground-Water Management Plan outlines the available groundwater resources, current and proposed uses, as well as a categorical percentage breakdown of well pumpage.

To date and into the foreseeable future, all supplies of both surface and ground water are considered to be fully appropriated. However, some non-consumptive uses such as hydroelectric power generation will be considered on a per project basis.

JUAB COUNTY M&I WATER SUPPLIES AND USES

Only the extreme northeast portion of Juab County lies within the Utah Lake Basin. Within this portion of Juab County are the communities of Mona, Nephi, and Rocky Ridge Town. There are the mentioned three public communities with their own water systems, two public non-community water systems, and two self-supplied industries in the county. Locations of the public water systems are shown in **Figure 3** on page 9.

Shown in the following **Table 1,** the maximum annual potable water supply of the public community water systems in Juab County is 4,703 acre-feet: 1,934 acre-feet from springs and 2,769 acre-feet from wells. There are no surface supplies of water utilized in this portion of Juab County.

TABLE 1
JUAB COUNTY
Maximum Potable Water Supplies for Community Systems
(Acre-Feet/Year)

WATER SUPPLIER	Springs	Wells	Surface	Total
Mona	316.2	348.0	0.0	**664.2**
Nephi	1,618.0	2,300.0	0.0	**3,918.0**
Rocky Ridge Town	0.0	121.1	0.0	**121.1**
JUAB COUNTY TOTALS	**1,934.2**	**2,769.1**	**0.0**	**4,703.3**

Note: All values represent maximum system source capacities limited by water rights, hydrologic constraints, and/or system constraints.

The reliable annual potable water supply for public community systems in Juab County is about 2,780 acre-feet, approximately sixty percent of the maximum supply. The breakdown of this supply is presented in the following **Table 2**.

TABLE 2
JUAB COUNTY
Reliable Potable Water Supplies for Public Community Systems
(Acre-Feet/Year)

WATER SUPPLIER	Springs	Wells	Surface	Total*
Mona	189.7	348.0	0.0	**537.7**
Nephi	970.0	1,150.0	0.0	**2,120.0**
Rocky Ridge Town	0.0	121.1	0.0	**121.1**
JUAB COUNTY TOTALS	**1,159.7**	**1,619.1**	**0.0**	**2,778.8**

* Wells are limited to 50% of their "maximum" capacity for reliable supply when well/pump capacity is the limiting factor. Surface supplies are considered reliable at their maximum amount Absent specific information, springs are considered reliable at 60% of their maximum flow rate.

Table 3, on the next page, is a breakdown of the potable water use for each of the public community water systems. The table shows a total annual potable water use of 1,720 acre-feet for all the public community water systems of the county. This current annual use is about 62 percent of the reliable water supply.

TABLE 3
JUAB COUNTY
WATER USE FOR PUBLIC COMMMUNITY SYSTEMS

UTAH COUNTY WATER SUPPLIER	POTABLE USAGE (Ac-Ft/Yr)						Service Population	Gallons Per Capita Per Day
	Residential Indoor	Residential Outdoor	Commercial Total	Institutional Total	Industrial Total	Total M & I		
Mona	80.0	100.0	5.0	15.0	0.0	**200.0**	1,010	176.8
Nephi	417.1	600.0	5.0	100.0	350.0	**1,472.1**	5,320	247.0
Rocky Ridge Town	23.2	20.5	0.5	3.0	0.5	**47.7**	580	73.4
JUAB COUNTY TOTALS	**520.3**	**720.5**	**10.5**	**118.0**	**350.5**	**1,719.8**	**6,910**	**222.2**
A	B	C	D	E	F	G	H	J

B, C, D, E, F, and H — These values are all input data.
G=B+C+D+E+F — This value represents only Potable M&I Water Use.
J=G*(325,851 gallons per acre-foot)/(365 days per year)/H — Average per capita potable water use.

Secondary or non-potable water is another important aspect of municipal and industrial (M&I) water use. The following **Table 4** gives the annual amount of secondary water used for the various categorical uses within the boundaries of the each of the public community water systems. Each of the communities operates their own secondary water system. Total secondary water use for the public community water systems is 500 acre-feet per year.

TABLE 4
JUAB COUNTY
Secondary Water Use Within Public Community Systems
(Acre-Feet/Year)

JUAB COUNTY WATER SUPPLIER	Residential Use	Commercial Use	Institutional Use	Industrial/ Stockwater Use	Total Secondary Use
Mona	150.0	0.0	0.0	0.0	**150.0**
Nephi	300.0	0.0	50.0	0.0	**350.0**
Rocky Ridge Town	0.0	0.0	0.0	0.0	**0.0**
JUAB COUNTY TOTALS	**450.0**	**0.0**	**50.0**	**0.0**	**500.0**

Note: Separate irrigation companies provide secondary water.

Various per capita water use rates for the public community water systems are given in the following **Table 5**.

TABLE 5
JUAB COUNTY
Average GPCD Water Use
For Public Community Systems

Water Supplier	Service Population	Residential Water Use			CII Water Use*			TOTAL WATER USE		
		Potable	Non-Potable	Sub Total	Potable	Non-Potable	Sub Total	Potable	Non-Potable	TOTAL
Mona	1,010	159	133	**292**	18	0	**18**	177	133	**309**
Nephi	5,320	171	50	**221**	76	8	**85**	247	59	**306**
Rocky Ridge Town	580	67	0	**67**	6	0	**6**	73	0	**73**
JUAB COUNTY TOTALS	**6,910**	**160**	**58**	**218**	**62**	**6**	**68**	**222**	**65**	**287**

*Commmercial, Institutional, and Industrial

Table 6, on the following page, shows the water use for public non-community system and private domestic systems. There are two self-supplied industries and several private domestic wells. Collectively, these water systems annually use 217 acre-feet of potable water use and 400 acre-feet of secondary water use.

TABLE 6
JUAB COUNTY
Water Use for Public Non-Community Systems,
Self-Supplied Industries and Private Domestic Systems
(Acre-Feet/Year)

JUAB COUNTY WATER SUPPLIER	POTABLE USAGE					Total Secondary Water Use
	Residential Use	Commercial Use	Institutional Use	Industrial Use	Total Potable Use	
Forest Service Systems:						
Bear Canyon Campground	0.0	0.0	1.5	0.0	**1.5**	**0.0**
Ponderosa Campground	0.0	0.0	0.5	0.0	**0.5**	**0.0**
Total Non-Community	**0.0**	**0.0**	**2.0**	**0.0**	**2.0**	**0.0**
Self-Supplied Industries[1]	0.0	0.0	0.0	15.0	**15.0**	**190.0**
Private Domestic Systems	200.0	0.0	0.0	0.0	**200.0**	**0.0**
JUAB COUNTY TOTALS	**200.0**	**0.0**	**2.0**	**15.0**	**217.0**	**190.0**

[1]Includes Ash Grove Cement West, Inc.

The combined total potable M&I water use of all categories of water systems in the county is 1,937 acre-feet, while secondary water use is 900 acre-feet; giving an overall total M&I water use of 2,837 acre-feet.

SUMMIT COUNTY M&I WATER SUPPLIES AND USES

The extreme northeast corner of the Utah Lake Basin encompasses a small part of Summit County and includes the communities of Francis and Woodland. In addition to these two public community water systems, there are six public non-community systems, but no self-supplied industries. The locations of most of these systems in Summit County are shown in **Figure 3** on page 9.

Table 7 shows that the maximum annual potable water supply for public community systems in Summit County is 700 acre-feet: 388 acre-feet from springs and 312 acre-feet from wells. Currently, there are no developed surface supplies of potable water in Summit County.

TABLE 7
SUMMIT COUNTY
Maximum Potable Water Supplies for Public Community Systems
(Acre-Feet/Year)

WATER SUPPLIER	Springs	Wells	Surface	TOTAL
Francis Town Water System	344.0	294.0	0.0	**638.0**
Woodland Mutual Water Co.	44.2	17.6	0.0	**61.8**
SUMMIT COUNTY TOTALS	**388.2**	**311.6**	**0.0**	**699.8**

Note: All values represent maximum system source capacities limited by water rights, hydrologic constraints, and/or system constraints.

The reliable potable water supply for public community systems in Summit County is 401 acre-feet or about 57 percent of the maximum annual water supply. The breakdown of this supply is presented in the following **Table 8**.

TABLE 8
SUMMIT COUNTY
Reliable Potable Water Supplies for Public Community Systems
(Acre-Feet/Year)

WATER SUPPLIER	Springs	Wells	Surface	TOTAL*
Francis Town Water System	176.6	172.0	0.0	**348.6**
Woodland Mutual Water Co.	44.2	8.4	0.0	**52.6**
SUMMIT COUNTY TOTALS	**220.8**	**180.4**	**0.0**	**401.2**

* Wells are limited to 50% of their "maximum" capacity for reliable supply when well/pump capacity is the limiting factor. Surface supplies are considered reliable at their maximum amount. Absent specific information, springs are considered reliable at 60% of their maximum flow rate.

Table 9 shows a breakdown of the potable water use for each public community system. This table shows that for Summit County the current annual potable water use of public community water systems is 230 acre-feet, about 57 percent of the current reliable annual potable water supply.

TABLE 9
SUMMIT COUNTY
WATER USE FOR PUBLIC COMMUNITY SYSTEMS

UTAH COUNTY WATER SUPPLIER	POTABLE USAGE (Ac-Ft/Yr)						Service Population	Gallons Per Capita Per Day
	Residential Indoor	Residential Outdoor	Commercial Total	Institutional Total	Industrial Total	Total M & I		
Francis Town Water System	54.0	100.0	0.4	5.6	0.0	**160.0**	690	207.0
Woodland Mutual Water Co.	15.0	40.0	5.0	5.0	5.0	**70.0**	180	347.2
SUMMIT COUNTY TOTALS	**69.0**	**140.0**	**5.4**	**10.6**	**5.0**	**230.0**	**870**	**236.0**
A	B	C	D	E	F	G	H	J

B, C, D, E, F, and H — These values are all input data.
G=B+C+D+E+F — This value represents only Potable M&I Water Use.
J=G*(325,851 gallons per acre-foot)/(365 days per year)/H — Average per capita potable water use.

Secondary water is another important aspect of municipal and industrial (M&I) water use. **Table 10** gives the annual amount of secondary water used for various categorical uses within the boundaries of the public community systems. In the town of Francis, three separate irrigation companies provide secondary water to customers within the community. Woodland Mutual Water Company supplies both culinary and secondary water to the town of Woodland. Total secondary water use for the public community water systems is 65 acre-feet.

TABLE 10
SUMMIT COUNTY
SECONDARY WATER USE WITHIN PUBLIC COMMUNITY SYSTEMS
(Acre-Feet/Year)

SUMMIT COUNTY WATER SUPPLIER	Residential Use	Commercial Use	Institutional Use	Industrial/ Stockwater Use	Total Secondary Use
Francis Town Water System					
Washington Irrigation Co.	30.0	0.0	10.0	0.0	**40.0**
South Kamas Irrigation Co.	10.0	0.0	0.0	0.0	**10.0**
Beaver-Shingle Creek Irrig. Co.	10.0	0.0	0.0	0.0	**10.0**
Woodland Mutual Water Co.*	5.0	0.0	0.0	0.0	**5.0**
SUMMIT COUNTY TOTALS	**55.0**	**0.0**	**10.0**	**0.0**	**65.0**

Note: Separate irrigation companies provide secondary water to the water supplier unless indicated by an '*'.

Various per capita rates for the public community systems of Summit County are shown in the following **Table 11**.

TABLE 11
SUMMIT COUNTY
Average GPCD Water Use
For Public Community Systems

Water Supplier	Service Population	Residential Water Use			CII Water Use*			TOTAL WATER USE		
		Potable	Non-Potable	Sub Total	Potable	Non-Potable	Sub Total	Potable	Non-Potable	TOTAL
Francis Town Water System	690	199	65	**264**	8	13	**21**	207	78	**285**
Woodland Mutual Water Co.	180	273	25	**298**	74	0	**74**	347	25	**372**
SUMMIT COUNTY TOTALS	**870**	**214**	**56**	**271**	**22**	**10**	**32**	**236**	**67**	**303**

*Commmercial, Institutional, and Industrial

Table 12, on the following page, shows the annual water use for public non-community systems, self-supplied industries, and private domestic systems. The total water use of these water systems is 14 acre-feet of potable water and 10 acre-feet of secondary water use.

TABLE 12
SUMMIT COUNTY
Water Use for Public Non-Community Systems,
Self-Supplied Industries and Private Domestic Systems
(Acre-Feet/Year)

SUMMIT COUNTY WATER SUPPLIER	POTABLE USAGE					Total Secondary Water Use
	Residential Use	Commercial Use	Institutional Use	Industrial Use	Total Potable Use	
Camperworld Knotty Pine	0.3	0.0	0.0	0.0	**0.3**	**0.0**
Diamond Bar X	0.0	0.0	0.0	0.0	**0.0**	**0.0**
Forest Service Systems:	0.0	0.0	0.0	0.0	**0.0**	**0.0**
Lost Creek-Lily Lake CG	0.0	0.0	0.2	0.0	**0.2**	**0.0**
Shady Dell/Soapstone CG	0.0	0.0	0.1	0.0	**0.1**	**0.0**
Trial Lake CG	0.0	0.0	0.5	0.0	**0.5**	**0.0**
Lemon Grove	3.0	0.0	0.0	0.0	**3.0**	**10.0**
Total Non-Community	**3.3**	**0.0**	**0.8**	**0.0**	**4.1**	**10.0**
Self Supplied Industries[1]	0.0	0.0	0.0	0.0	**0.0**	**0.0**
Private Domestic Use	10.0	0.0	0.0	0.0	**10.0**	**0.0**
SUMMIT COUNTY	**13.3**	**0.0**	**0.8**	**0.0**	**14.1**	**10.0**

[1]There are no self supplied industries

Total potable M&I water use for all categories of water systems in the county is about 244 acre-feet, while non-potable use is 75 acre-feet. The overall total annual M&I water use is about 319 acre-feet.

UTAH COUNTY M&I WATER SUPPLIES AND USES

With the exception of the southeast tip of Utah County, the county is entirely contained within the Utah Lake Basin. Additionally, the county comprises most of the land area of the basin. Within Utah County there are 35 community water systems, 40 non-community water systems, 9 self-supplied industries and over 4,000 private wells. Locations of most of these systems are shown in **Figure 3** on page 9.

Table 13, on the following page, shows that the maximum annual potable water supply for public community systems in Utah County is 319,407 acre-feet; 49,284 acre-feet from springs, 154,423 acre-feet from wells, and 115,700 acre-feet from surface supplies. Additional future supplies are anticipated to be over 70,000 acre-feet, bringing total future supplies to almost 400,000 acre-feet annually.

The reliable potable water supply for Utah County is currently figured to be about 149,564 acre-feet. **Table 14** on page 43 indicates that of this total, 32,204 acre-feet are from springs, 91,010 acre-feet from wells, and 26,350 acre-feet from surface supplies. The reliability of the additional future supplies is not yet known.

Following, **Table 15** on pages 44 and 45 shows a breakdown of the total potable water use for each public community water system. The table indicates that for Utah County the current annual potable water use for public community water systems is 89,441 acre-feet. This current annual use is about 59 percent of the estimated reliable water supply.

TABLE 13
UTAH COUNTY
Maximum Potable Water Supplies for Public Community Systems
(Acre-Feet/Year)

WATER SUPPLIER	Springs	Wells	Surface	Total
Alpine	2,172.0	2,845.3	0.0	**5,017.3**
Alpine Cove Water SSD	0.0	91.2	0.0	**91.2**
American Fork City	2,000.0	31,000.0	0.0	**33,000.0**
Bradford Acres Water Assoc.	0.0	83.9	0.0	**83.9**
Cedar Fort	362.0	0.0	0.0	**362.0**
Cedar Hills	0.0	858.0	0.0	**858.0**
Central Utah WCD - Utah Valley[1]	0.0	0.0	89,600.0	**89,600.0**
Covered Bridge Canyon	0.0	98.0	0.0	**98.0**
Eagle Mountain Town	0.0	1,145.4	0.0	**1,145.4**
Elberta	0.0	50.8	0.0	**50.8**
Elk Ridge	0.0	1,071.4	0.0	**1,071.4**
Fairfield Irrigation Company	96.7	0.0	0.0	**96.7**
Genola	0.0	871.0	0.0	**871.0**
Goosenest Water Company	43.6	84.9	0.0	**128.5**
Goshen	645.2	0.0	0.0	**645.2**
Hidden Creek Water Company	0.0	724.0	0.0	**724.0**
Highland Water Company	0.0	5,645.5	0.0	**5,645.5**
Lehi	524.2	3,903.5	0.0	**4,427.7**
Lindon	204.9	5,532.6	0.0	**5,737.5**
Manila Culinary Water Company	282.4	1,556.2	0.0	**1,838.6**
Mapleton	1,903.3	4,718.0	0.0	**6,621.3**
Metropolitan Water District of Orem[2]	0.0	0.0	17,350.0	**17,350.0**
Metropolitan Water District of Provo[3]	300.0	150.0	8,750.0	**9,200.0**
North Fork SSD	620.8	0.0	0.0	**620.8**
Orem City	2,984.0	18,306.0	0.0	**21,290.0**
Payson	1,500.0	5,800.0	0.0	**7,300.0**
Pleasant Grove City	1,500.0	13,000.0	0.0	**14,500.0**
Provo City	12,000.0	37,500.0	0.0	**49,500.0**
Salem	905.0	2,235.8	0.0	**3,140.8**
Santaquin City	1,500.0	1,600.0	0.0	**3,100.0**
Saratoga Spring Municipal	0.0	905.0	0.0	**905.0**
Spanish Fork	12,762.4	1,935.6	0.0	**14,698.0**
Spring Lake	144.8	528.5	0.0	**673.3**
Springdell Plat A & B	206.5	0.0	0.0	**206.5**
Springville City	6,290.7	8,426.4	0.0	**14,717.1**
Utah State Hospital	250.0	725.9	0.0	**975.9**
White Hills Subdivision	0.0	2,783.0	0.0	**2,783.0**
Woodland Hills	85.0	247.4	0.0	**332.4**
UTAH COUNTY TOTALS	**49,283.5**	**154,423.3**	**115,700.0**	**319,406.8**

Notes:

1. The supply shown is the current design capacity of the treatment plant (expandable to 112,000). Current plant deliveries total about 24,250 acre feet. Additional future water supplies will include 30,000 acre feet from the Utah Lake System and 42,000 acre feet of recently purchased water rights from the former Geneva Steel site.
2. Metropolitan Water District of Orem wholesales water to Orem City. The supply shown is their current Provo River water rights.
3. Metropolitan Water District of Provo wholesales water to Provo City. The supply shown is their current total water rights.
4. All values represent maximum system source capacities limited by water rights, hydrologic constraints, and/or system constraints.

TABLE 14
UTAH COUNTY
Reliable Potable Water Supplies for Public Community Systems
(Acre-Feet/Year)

WATER SUPPLIER	Springs	Wells	Surface	TOTAL
Alpine	2,172.0	1,629.2	0.0	**3,801.2**
Alpine Cove Water SSD	0.0	91.2	0.0	**91.2**
American Fork City	2,000.0	20,000.0	0.0	**22,000.0**
Bradford Acres Water Assoc.	0.0	83.9	0.0	**83.9**
Cedar Fort	227.5	0.0	0.0	**227.5**
Cedar Hills	0.0	858.0	0.0	**858.0**
Central Utah WCD - Utah Valley[2]	0.0	0.0	13,300.0	**13,300.0**
Covered Bridge Canyon	0.0	98.0	0.0	**98.0**
Eagle Mountain Town	0.0	1,145.4	0.0	**1,145.4**
Elberta	0.0	50.8	0.0	**50.8**
Elk Ridge	0.0	920.0	0.0	**920.0**
Fairfield Irrigation Company	96.7	0.0	0.0	**96.7**
Genola	0.0	435.5	0.0	**435.5**
Goosenest Water Company	43.6	84.9	0.0	**128.5**
Goshen	387.1	0.0	0.0	**387.1**
Hidden Creek Water Company	0.0	724.0	0.0	**724.0**
Highland Water Company	0.0	2,823.0	0.0	**2,823.0**
Lehi	524.2	1,952.0	0.0	**2,476.2**
Lindon	123.0	2,766.3	0.0	**2,889.3**
Manila Culinary Water Company	120.0	778.1	0.0	**898.1**
Mapleton	1,142.0	2,359.0	0.0	**3,501.0**
Metropolitan Water District of Orem[3]	0.0	0.0	8,675.0	**8,675.0**
Metropolitan Water District of Provo[4]	150.0	75.0	4,375.0	**4,600.0**
North Fork SSD	581.7	0.0	0.0	**581.7**
Orem City	1,790.0	12,540.0	0.0	**14,330.0**
Payson	900.0	2,900.0	0.0	**3,800.0**
Pleasant Grove City	1,500.0	6,500.0	0.0	**8,000.0**
Provo City	7,000.0	18,750.0	0.0	**25,750.0**
Salem	543.0	2,110.0	0.0	**2,653.0**
Santaquin City	900.0	800.0	0.0	**1,700.0**
Saratoga Spring Municipal	0.0	905.0	0.0	**905.0**
Spanish Fork	7,782.7	967.8	0.0	**8,750.5**
Spring Lake	86.9	329.0	0.0	**415.9**
Springdell Plat A & B	123.9	0.0	0.0	**123.9**
Springville City	3,774.4	6,390.0	0.0	**10,164.4**
Utah State Hospital	150.0	362.9	0.0	**512.9**
White Hills Subdivision	0.0	1,391.5	0.0	**1,391.5**
Woodland Hills	85.0	189.5	0.0	**274.5**
UTAH COUNTY TOTALS	**32,203.7**	**91,010.0**	**26,350.0**	**149,563.7**

Notes:

1. Wells are limited to 50% of their "maximum" capacity for reliable supply when well/pump capacity is the limiting factor. Surface supplies are considered reliable at their maximum capacity. Absent specific information, springs were considered reliable at 60% of their maximum flow rate.
2. Central Utah WCD currently wholesales 3,000 a.f. and 10,300 a.f. of water to Provo and Orem Cities, respectively, through their Utah Valley Water Treatment Plant. Additional future supplies include 30,000 acre feet from the Utah Lake System and 42,000 acre feet of recently purchased water rights from the former Geneva Steel site.
3. Metropolitan Water District of Orem wholesales water to the City of Orem.
4. Metropolitan Water District of Provo wholesales water to the City of Provo.

TABLE 15
UTAH COUNTY
WATER USE FOR PUBLIC COMMUNITY SYSTEMS

UTAH COUNTY WATER SUPPLIER	POTABLE USAGE (Ac-Ft/Yr)						Service Population	Gallons Per Capita Per Day
	Residential Indoor	Residential Outdoor	Commercial Total	Institutional Total	Industrial Total	Total M & I		
Alpine	650.0	200.0	30.0	20.0	25.0	**925.0**	8,880	93.0
Alpine Cove Water SSD	20.0	53.0	0.0	0.0	2.0	**75.0**	250	267.8
American Fork City	1,908.5	2,817.6	896.1	2,166.6	0.0	**7,788.8**	25,430	273.4
Bradford Acres Water Assoc.	3.0	0.0	0.0	0.0	0.0	**3.0**	40	67.0
Cedar Fort	25.0	55.0	2.0	20.0	0.0	**102.0**	370	246.1
Cedar Hills	600.0	400.0	10.0	20.0	0.0	**1,030.0**	7,980	115.2
Covered Bridge Canyon	23.5	38.6	0.0	5.0	0.0	**67.1**	300	199.7
Eagle Mountain Town	900.0	900.0	142.0	262.0	0.0	**2,204.0**	13,000	151.4
Elberta	20.0	20.0	0.0	5.0	0.0	**45.0**	300	133.9
Elk Ridge	201.5	274.3	0.0	0.0	0.0	**475.8**	2,570	165.3
Fairfield Irrigation Company	8.1	4.0	0.0	2.0	2.0	**16.1**	110	130.7
Genola	90.0	50.0	1.0	2.0	130.0	**273.0**	1,250	195.0
Goosenest Water Company	10.0	30.0	0.0	0.0	0.0	**40.0**	110	324.6
Goshen	80.0	100.0	2.6	34.2	52.0	**268.8**	920	260.8
Hidden Creek Water Company	2.5	6.5	0.0	0.0	0.0	**9.0**	30	267.8
Highland City	800.0	167.8	55.4	200.0	20.0	**1,243.2**	12,560	88.4
Lehi	2,225.4	0.0	50.0	100.0	20.0	**2,395.4**	34,710	61.6
Lindon	675.0	50.5	317.2	20.2	162.6	**1,225.5**	9,800	111.6
Manila Culinary Water Company	240.0	1,100.0	30.0	20.0	0.0	**1,390.0**	3,040	408.2
Mapleton	570.0	740.0	10.0	20.0	5.0	**1,345.0**	7,250	165.6

(table continued on following page

TABLE 15(Cont.)
UTAH COUNTY
WATER USE FOR PUBLIC COMMUNITY SYSTEMS

UTAH COUNTY WATER SUPPLIER	POTABLE USAGE (Ac-Ft/Yr)						Service Population	Gallons Per Capita Per Day
	Residential Indoor	Residential Outdoor	Commercial Total	Institutional Total	Industrial Total	Total M & I		
North Fork SSD	50.0	100.0	110.0	30.0	0.0	**290.0**	200	1,294.5
Orem City	6,600.0	7,400.0	3,000.0	1,500.0	500.0	**19,000.0**	91,180	186.0
Payson	1,157.3	50.0	200.0	200.0	386.3	**1,993.6**	17,800	100.0
Pleasant Grove City	1,800.0	2,200.0	147.8	350.0	3.0	**4,500.8**	26,730	150.3
Provo City	7,000.0	5,573.8	9,123.3	2,826.8	485.9	**25,009.8**	109,180	204.5
Salem	400.0	736.5	62.2	105.8	0.3	**1,304.8**	5,100	228.4
Santaquin City	488.0	386.1	50.3	410.0	190.3	**1,524.7**	6,500	209.4
Saratoga Spring Municipal	764.0	36.0	5.0	45.0	0.0	**850.0**	10,180	74.5
Spanish Fork	1,986.0	1,760.0	608.6	1,867.2	373.0	**6,594.8**	27,000	218.1
Spring Lake	36.0	75.0	5.0	5.0	12.0	**133.0**	460	258.1
Springdell Plat A & B	7.5	12.5	0.0	1.5	0.0	**21.5**	100	191.9
Springville City	1,926.5	1,978.2	648.7	263.1	1,865.8	**6,682.3**	24,570	242.8
Utah State Hospital	0.0	0.0	0.0	175.0	0.0	**175.0**	500	312.5
White Hills Subdivision	36.4	36.8	6.0	0.0	0.0	**79.2**	500	141.4
Woodland Hills	110.7	234.0	5.0	10.0	0.0	**359.7**	1,520	211.3
UTAH COUNTY TOTALS	**31,414.9**	**27,586.2**	**15,518.2**	**10,686.4**	**4,235.2**	**89,440.9**	**450,420**	**177.3**
A	B	C	D	E	F	G	H	J

B, C, D, E, F, and H — These values are all input data.
G=B+C+D+E+F — This value represents only Potable M&I Water Use.
J=G*(325,851 gallons per acre-foot)/(365 days per year)/H — Average per capita potable water use.

Secondary (non-potable) water is another important aspect of total M&I water use. **Table 16** shows the amount of secondary water use within the public community water systems boundaries. Total secondary water use in Utah County is 27,700 acre-feet.

TABLE 16
UTAH COUNTY
Secondary Water Use Within Public Community Systems
(Acre-Feet/Year)

UTAH COUNTY WATER SUPPLIER	Residential Use	Commercial Use	Institutional Use	Industrial/ Stockwater Use	Total Secondary Use
Alpine	2,000.0	40.0	300.0	0.0	**2,340.0**
Alpine Cove Water SSD	0.0	0.0	0.0	0.0	**0.0**
American Fork City	200.0	300.0	0.0	0.0	**500.0**
Bradford Acres Water Assoc.	15.0	0.0	0.0	0.0	**15.0**
Cedar Fort	20.0	0.0	0.0	0.0	**20.0**
Cedar Hills	600.0	250.0	50.0	0.0	**900.0**
Covered Bridge Canyon	0.0	0.0	0.0	0.0	**0.0**
Eagle Mountain Town	0.0	300.0	0.0	0.0	**300.0**
Elberta	20.0	0.0	5.0	0.0	**25.0**
Elk Ridge	0.0	0.0	0.0	0.0	**0.0**
Fairfield Irrigation Co.	6.0	0.0	20.0	2.0	**28.0**
Genola	250.0	0.0	80.0	0.0	**330.0**
Goosenest Water Co.	0.0	0.0	0.0	0.0	**0.0**
Goshen	100.0	0.0	20.0	0.0	**120.0**
Hidden Creek Water Co.	0.0	0.0	0.0	0.0	**0.0**
Highland City	2,000.0	300.0	200.0	0.0	**2,500.0**
Lehi	6,191.9	500.0	250.0	0.0	**6,941.9**
Lindon	1,100.0	50.0	300.0	0.0	**1,450.0**
Manila Culinary Water Co.	0.0	0.0	0.0	0.0	**0.0**
Mapleton	800.0	0.0	0.0	0.0	**800.0**
North Fork SSD	0.0	0.0	0.0	0.0	**0.0**
Orem City	150.0	150.0	0.0	0.0	**300.0**
Payson	2,500.0	250.0	200.0	0.0	**2,950.0**
Pleasant Grove City	250.0	0.0	100.0	50.0	**400.0**
Provo City	1,000.0	600.0	675.0	50.0	**2,325.0**
Salem	100.0	0.0	0.0	0.0	**100.0**
Santaquin City	300.0	0.0	100.0	0.0	**400.0**
Saratoga Spring Municipal	800.0	250.0	0.0	0.0	**1,050.0**
Spanish Fork	2,500.0	100.0	500.0	100.0	**3,200.0**
Spring Lake	20.0	0.0	10.0	0.0	**30.0**
Springdell Plat A & B	0.0	0.0	0.0	0.0	**0.0**
Springville City	300.0	0.0	250.0	50.0	**600.0**
Utah State Hospital	0.0	0.0	75.0	0.0	**75.0**
White Hills Subdivision	0.0	0.0	0.0	0.0	**0.0**
Woodland Hills	0.0	0.0	0.0	0.0	**0.0**
UTAH COUNTY TOTALS	**21,222.9**	**3,090.0**	**3,135.0**	**252.0**	**27,699.9**

Note: Separate irrigation companies provide secondary water to the water supplier unless indicated by an '*'.

The following **Table 17** gives various gallons per capita per day water use rates for the public community systems.

TABLE 17
UTAH COUNTY
Average GPCD Water Use for Public Community Systems

Water Supplier	Service Population	Residential Water Use			CII Water Use*			TOTAL WATER USE		
		Potable	Non-Potable	Sub Total	Potable	Non-Potable	Sub Total	Potable	Non-Potable	TOTAL
Alpine	8,880	85	201	**287**	8	34	**42**	93	235	**328**
Alpine Cove Water SSD	250	261	0	**261**	7	0	**7**	268	0	**268**
American Fork City	25,430	166	7	**173**	108	11	**118**	273	18	**291**
Bradford Acres Water Assoc.	40	67	335	**402**	0	0	**0**	67	335	**402**
Cedar Fort	370	193	48	**241**	53	0	**53**	246	48	**294**
Cedar Hills	7,980	112	67	**179**	3	34	**37**	115	101	**216**
Covered Bridge Canyon	300	185	0	**185**	15	0	**15**	200	0	**200**
Eagle Mountain Town	13,000	124	0	**124**	28	21	**48**	151	21	**172**
Elberta	300	119	60	**179**	15	15	**30**	134	74	**208**
Elk Ridge	2,570	165	0	**165**	0	0	**0**	165	0	**165**
Fairfield Irrigation Co.	110	98	49	**147**	32	179	**211**	131	227	**358**
Genola	1,250	100	179	**279**	95	57	**152**	195	236	**431**
Goosenest Water Co.	110	325	0	**325**	0	0	**0**	325	0	**325**
Goshen	920	175	97	**272**	86	19	**106**	261	116	**377**
Hidden Creek Water Co.	30	268	0	**268**	0	0	**0**	268	0	**268**
Highland City	12,560	69	142	**211**	20	36	**55**	88	178	**266**
Lehi	34,710	57	159	**216**	4	19	**24**	62	179	**240**
Lindon	9,800	66	100	**166**	46	32	**77**	112	132	**244**
Manila Culinary Water Co.	3,040	394	0	**394**	15	0	**15**	408	0	**408**
Mapleton	7,250	161	99	**260**	4	0	**4**	166	99	**264**
North Fork SSD	200	670	0	**670**	625	0	**625**	1,294	0	**1,294**
Orem City	91,180	137	1	**139**	49	1	**50**	186	3	**189**
Payson	17,800	61	125	**186**	39	23	**62**	100	148	**248**
Pleasant Grove City	26,730	134	8	**142**	17	5	**22**	150	13	**164**
Provo City	109,180	103	8	**111**	102	11	**113**	205	19	**224**
Salem	5,100	199	18	**216**	29	0	**29**	228	18	**246**
Santaquin City	6,500	120	41	**161**	89	14	**103**	209	55	**264**
Saratoga Spring Municipal	10,180	70	70	**140**	4	22	**26**	75	92	**167**
Spanish Fork	27,000	124	83	**207**	94	23	**117**	218	106	**324**
Spring Lake	460	215	39	**254**	43	19	**62**	258	58	**316**
Springdell Plat A & B	100	179	0	**179**	13	0	**13**	192	0	**192**
Springville City	24,570	142	11	**153**	101	11	**112**	243	22	**265**
Utah State Hospital	500	0	0	**0**	312	134	**446**	312	134	**446**
White Hills Subdivision	500	131	0	**131**	11	0	**11**	141	0	**141**
Woodland Hills	1,520	202	0	**202**	9	0	**9**	211	0	**211**
UTAH COUNTY TOTALS	**450,420**	**117**	**42**	**159**	**60**	**13**	**73**	**177**	**55**	**232**

*Commmercial, Institutional, and Industrial

Table 18, on the following page, indicates the water use for public non-community systems and private domestic systems. Utah Lake State Park facilities, several summer and year-round developments, campgrounds, and other park facilities are among the 40 non-community systems. There are nine self-supplied industries in Utah County. All these uses amount to 5,938 acre-feet of potable water and 9,724 acre-feet of non-potable water.

TABLE 18
UTAH COUNTY
Water Use for Public Non-Community Systems, Self-Supplied Industries and Private Domestic Systems (Acre-Feet/Year)

UTAH COUNTY WATER SUPPLIER	POTABLE USAGE (Ac-Ft/Yr)					Total Secondary Water Use (Ac-Ft/Yr)
	Residential Use	Commercial Use	Institutional Use	Industrial Use	Total Potable Use	
Brickerhaven Subdivision	2.0	0.0	0.0	0.0	**2.0**	**0.0**
Christian Assembly	0.0	0.0	1.0	0.0	**1.0**	**0.0**
Diamond Fork Creek-CG	0.0	0.5	0.0	0.0	**0.5**	**0.0**
Forest Service Systems:						
American Fork Recreation Site	0.0	0.0	3.0	0.0	**3.0**	**0.0**
Balsam Campground	0.0	0.0	0.5	0.0	**0.5**	**0.0**
Blackhawk Campground	0.0	0.0	1.0	0.0	**1.0**	**0.0**
Cherry Picnic Site	0.0	0.0	0.5	0.0	**0.5**	**0.0**
Granite Flat Campground	0.0	0.0	3.0	0.0	**3.0**	**0.0**
Hope Campground	0.0	0.0	0.3	0.0	**0.3**	**0.0**
Maple Bench Campground	0.0	0.0	0.3	0.0	**0.3**	**0.0**
Payson Lakes Campground	0.0	0.0	5.0	0.0	**5.0**	**0.0**
Theater In Pines & Mt. Timp.	0.0	0.0	0.2	0.0	**0.2**	**0.0**
Timpooneke Campground/GS	0.0	0.0	1.0	0.0	**1.0**	**0.0**
Tinney Flat Campground	0.0	0.0	0.5	0.0	**0.5**	**0.0**
Whiting Campground	0.0	0.0	1.0	0.0	**1.0**	**0.0**
Jehovahs' Witness Church	0.0	0.0	1.0	0.0	**1.0**	**0.0**
Jolley Park	0.0	0.0	2.0	0.0	**2.0**	**5.0**
LDS Church Facilities:						
Benjamin Ward	0.0	0.0	2.5	0.0	**2.5**	**0.0**
Bennion Creek Campground	0.0	0.0	0.5	0.0	**0.5**	**0.0**
Deseret Feed Lot	0.0	0.0	0.0	150.0	**150.0**	**0.0**
Lake Shore Ward	0.0	0.0	2.5	0.0	**2.5**	**0.0**
Mutual Dell Recreation	0.0	0.0	2.0	0.0	**2.0**	**0.0**
Palmyra LDS Ward	0.0	0.0	2.0	0.0	**2.0**	**0.0**
Payson W Stake 12/13 Wards	0.0	0.0	1.0	0.0	**1.0**	**8.0**
Loafer Water Users Association	1.0	0.0	0.0	0.0	**1.0**	**0.0**
New Haven Girls East Home	0.0	2.0	0.0	0.0	**2.0**	**2.5**
New Haven Girls Saratoga	0.0	2.0	0.0	0.0	**2.0**	**2.5**
New Haven Girls West Home	0.0	2.0	0.0	0.0	**2.0**	**2.5**
Silver Lake Summer Homes	1.0	0.0	0.0	0.0	**1.0**	**0.0**
Soldier Summit SSD	1.0	0.5	0.0	0.0	**1.5**	**0.0**
State of Utah:						
Tucker Rest Area	0.0	0.0	0.5	0.0	**0.5**	**1.0**
Utah Lake State Park	0.0	0.0	6.0	0.0	**6.0**	**0.0**
Tibble Fork Summer Homes	2.0	0.0	0.0	0.0	**2.0**	**0.0**
Timpanogos Visitor Center	0.0	0.0	3.0	0.0	**3.0**	**0.0**
Upper Whittemore Water Co.	3.0	0.0	0.0	0.0	**3.0**	**0.0**
Utah County Facilities:						
Benjamin Park	0.0	0.0	10.0	0.0	**10.0**	**0.0**
Lincoln Beach	0.0	0.0	3.0	0.0	**3.0**	**0.0**
Willow Park	0.0	0.0	2.5	0.0	**2.5**	**0.0**
Vivian Park Homeowners	5.0	0.0	0.0	0.0	**5.0**	**0.0**
Wildwood Subdivision	35.0	0.0	0.0	0.0	**35.0**	**0.0**
Non-Community Sub-Total	**50.0**	**7.0**	**55.8**	**150.0**	**262.8**	**21.5**
Self-Supplied Industries[1]	0.0	0.0	0.0	675.0	**675.0**	**9,702.0**
Private Domestic Use	5,000.0	0.0	0.0	0.0	**5,000.0**	**0.0**
UTAH COUNTY TOTALS	**5,050.0**	**7.0**	**55.8**	**825.0**	**5,937.8**	**9,723.5**

[1] Includes Air Liquide American Corp., Dyno Nobel, Inc., Ensign-Bickford Co., Geneva Rock Products, Rebecca R. Hammond, Micron Technology, Inc., Pacific States Cast Iron Pipe Co., Payson Fruit Grower's, Inc., and Utah Refractories Corp.

Total potable M&I water use for all categories of water systems in the county is then 95,379 acre-feet, while total non-potable water use is 37,423 acre-feet, giving a total overall M&I water use in 2005 of about 132,802 acre-feet for Utah County. Since the current total population of Utah County is about 454,000, the total M&I per capita water use in Utah County is then 261 gallons per capita per day.

WASATCH COUNTY M&I WATER SUPPLIES AND USES

The Utah Lake Basin encompasses the land area of northwestern Wasatch County, generally the Heber Valley. Within this area are 15 public community systems and 26 public non-community systems. There are no self-supplied industries in this part of the county. Locations of most of these water systems are shown in **Figure 3** on page 9.

As shown in the following **Table 19**, the maximum annual potable water supply for the public community systems of Wasatch County in the Utah Lake Basin is 14,595 acre-feet; 6,718 acre-feet from springs, 3,377 acre-feet from wells, and 4,500 acre-feet from surface sources.

TABLE 19
WASATCH COUNTY
Maximum Potable Supplies for Public Community Systems
(Acre-Feet/Year)

WATER SUPPLIER	Springs	Wells	Surface	TOTAL
Canyon Meadows	161.0	72.0	0.0	**233.0**
Center Creek Water System	80.7	0.0	0.0	**80.7**
Charleston WCD	72.6	97.7	0.0	**170.3**
Country Estates Mobile Homes	0.0	64.6	0.0	**64.6**
Daniel Domestic Water Company	235.5	0.0	0.0	**235.5**
Heber City Water System	2,887.3	2,259.3	0.0	**5,146.6**
Interlaken Mutual Water Company	0.0	364.5	0.0	**364.5**
Jordanelle SSD	0.0	300.0	4,000.0	**4,300.0**
Midway City Water System	2,843.0	54.8	0.0	**2,897.8**
Storm Haven	0.0	60.0	0.0	**60.0**
Swiss Alpine Water Co.	31.2	0.0	0.0	**31.2**
Timber Lakes Water SSD	320.0	0.0	0.0	**320.0**
Twin Creeks SSD	0.0	0.0	500.0	**500.0**
Wallsburg Town Water System	87.1	66.9	0.0	**154.0**
Woodland South Hills Irrigation	0.0	37.0	0.0	**37.0**
WASATCH COUNTY TOTALS	**6,718.4**	**3,376.8**	**4,500.0**	**14,595.2**

Note: All values represent maximum system source capacities limited by water rights, hydrologic constraints, and/or system constraints.

The reliable potable water supply shown in the following **Table 20** is 10,492 acre-feet, about 75 percent of the maximum supply.

TABLE 20
WASATCH COUNTY
Reliable Potable Water Supplies for Public Community Systems
(Acre-Feet/Year)

WATER SUPPLIER	Springs	Wells	Surface	TOTAL*
Canyon Meadows	114.4	72.0	0.0	**186.4**
Center Creek Water System	48.4	0.0	0.0	**48.4**
Charleston WCD	43.6	97.7	0.0	**141.3**
Country Estates Mobile Homes	0.0	32.3	0.0	**32.3**
Daniel Domestic Water Company	141.3	0.0	0.0	**141.3**
Heber City Water System	1,732.4	1,130.0	0.0	**2,862.4**
Interlaken Mutual Water Company	0.0	182.2	0.0	**182.2**
Jordanelle SSD	0.0	150.0	4,000.0	**4,150.0**
Midway City Water System	1,815.0	27.4	0.0	**1,842.4**
Storm Haven	0.0	44.0	0.0	**44.0**
Swiss Alpine Water Co.	31.2	0.0	0.0	**31.2**
Timber Lakes Water SSD	192.0	0.0	0.0	**192.0**
Twin Creeks SSD	0.0	0.0	500.0	**500.0**
Wallsburg Town Water System	52.3	66.9	0.0	**119.2**
Woodland South Hills Irrigation	0.0	18.5	0.0	**18.5**
WASATCH COUNTY TOTALS	**4,170.6**	**1,821.0**	**4,500.0**	**10,491.6**

* Wells are limited to 50% of their "maximum" capacity for reliable supply when well/pump capacity is the limiting factor. Springs and surface water supplies are equal to their respective "maximum" capacities.

Table 21 on the following page presents the breakdown of the potable water use for each public community system of the county. As indicated by the table, the current total annual potable water use is 3,376 acre-feet, which is about 32 percent of the current reliable potable water supply.

TABLE 21
WASATCH COUNTY
WATER USE FOR PUBLIC COMMUNITY SYSTEMS

WASATCH COUNTY WATER SUPPLIER	POTABLE USAGE (Ac-Ft/Yr)						Service Population	Gallons Per Capita Per Day
	Residential Indoor	Residential Outdoor	Commercial Total	Institutional Total	Industrial Total	Total M & I		
Canyon Meadows	4.0	7.0	0.0	5.0	0.0	**16.0**	40	357.1
Center Creek Culinary Water Co.	12.5	15.5	0.0	0.0	0.0	**28.0**	160	156.2
Charleston WCD	45.0	65.0	10.0	10.0	15.0	**145.0**	680	190.4
Country Estates Mobile Homes	12.0	0.0	0.0	0.0	0.0	**12.0**	200	53.6
Daniel Domestic Water Company	27.8	40.0	0.0	0.0	0.6	**68.4**	370	165.0
Heber City Water System	693.9	835.1	269.7	150.0	34.4	**1,983.1**	9,530	185.8
Interlaken Mutual Water Company	35.0	30.0	0.0	0.0	0.0	**65.0**	550	105.5
Jordanelle Special Service District	96.8	90.9	10.2	0.0	0.0	**197.9**	1,330	132.8
Midway City Water System	200.0	200.0	60.0	100.0	40.0	**600.0**	2,740	195.5
Storm Haven	8.0	6.8	0.0	0.0	0.0	**14.8**	110	120.1
Swiss Alpine Water Co.	20.0	10.0	0.0	0.0	0.0	**30.0**	300	89.3
Timber Lakes Water SSD	83.5	0.0	0.0	0.0	0.0	**83.5**	940	79.3
Twin Creeks SSD	58.9	0.0	0.0	0.0	0.0	**58.9**	1,000	52.6
Wallsburg Town Water System	40.0	20.0	0.5	5.0	0.0	**65.5**	500	116.9
Woodland South Hills Irrigation	5.0	3.0	0.0	0.0	0.0	**8.0**	60	119.0
WASATCH COUNTY TOTALS	**1,342.4**	**1,323.3**	**350.4**	**270.0**	**90.0**	**3,376.1**	**18,510**	**162.8**
A	B	C	D	E	F	G	H	J

B, C, D, E, F, and H — These values are all input data.
G=B+C+D+E+F — This value represents only Potable M&I Water Use.
J=G*(325,851 gallons per acre-foot)/(365 days per year)/H — Average per capita potable water use.

Secondary water is another important aspect of municipal and industrial (M&I) water use. **Table 22** shows the secondary water use within the public community water systems service areas. The total secondary water use for this portion of Wasatch County is 1,153 acre-feet.

TABLE 22
WASATCH COUNTY
Secondary Water Use Within Public Community Water Systems
(Acre-Feet/Year)

WASATCH COUNTY WATER SUPPLIER	Residential Use	Commercial Use	Institutional Use	Industrial/ Stockwater Use	Total Secondary Use
Canyon Meadows	0.0	0.0	0.0	0.0	**0.0**
Center Creek Water System	25.0	0.0	0.0	0.0	**25.0**
Charleston WCD	60.0	0.0	0.0	0.0	**60.0**
Country Estates Mobile Homes	3.0	0.0	0.0	0.0	**3.0**
Daniel Domestic Water Company	65.0	0.0	0.0	0.0	**65.0**
Heber City Water System	200.0	0.0	50.0	0.0	**250.0**
Interlaken Mutual Water Company	0.0	0.0	0.0	0.0	**0.0**
Jordanelle Special Service District	0.0	0.0	0.0	0.0	**0.0**
Midway City Water System	300.0	250.0	0.0	0.0	**550.0**
Storm Haven	20.0	0.0	0.0	0.0	**20.0**
Swiss Alpine Water Co.	0.0	0.0	0.0	0.0	**0.0**
Timber Lakes Water SSD	0.0	0.0	0.0	0.0	**0.0**
Twin Creeks SSD	100.0	0.0	0.0	0.0	**100.0**
Wallsburg Town Water System	40.0	0.0	20.0	0.0	**60.0**
Woodland South Hills Irrigation	20.0	0.0	0.0	0.0	**20.0**
WASATCH COUNTY TOTALS	**833.0**	**250.0**	**70.0**	**0.0**	**1,153.0**

Note: Separate irrigation companies provide secondary water to the water supplier unless indicated by an '*'.

Table 23 gives various gpcd use rates for the public community water systems of the county.

TABLE 23
WASATCH COUNTY
Average GPCD Water Use for Public Community Systems

Water Supplier	Service Population	Residential Water Use			CII Water Use*			TOTAL WATER USE		
		Potable	Non-Potable	Sub Total	Potable	Non-Potable	Sub Total	Potable	Non-Potable	TOTAL
Canyon Meadows	40	246	0	**246**	112	0	**112**	357	0	**357**
Center Creek Culinary Water Co.	160	156	139	**296**	0	0	**0**	156	139	**296**
Charleston WCD	680	144	79	**223**	46	0	**46**	190	79	**269**
Country Estates Mobile Homes	200	54	13	**67**	0	0	**0**	54	13	**67**
Daniel Domestic Water Co.	370	164	157	**320**	1	0	**1**	165	157	**322**
Heber City Water System	9,530	143	19	**162**	43	5	**47**	186	23	**209**
Interlaken Mutual Water Co.	550	106	0	**106**	0	0	**0**	106	0	**106**
Jordanelle Special Service Dist.	1,330	126	0	**126**	7	0	**7**	133	0	**133**
Midway City Water System	2,740	130	98	**228**	65	81	**147**	195	179	**375**
Storm Haven	110	120	162	**282**	0	0	**0**	120	162	**282**
Swiss Alpine Water Co.	300	89	0	**89**	0	0	**0**	89	0	**89**
Timber Lakes Water SSD	940	79	0	**79**	0	0	**0**	79	0	**79**
Twin Creeks SSD	1,000	53	89	**142**	0	0	**0**	53	89	**142**
Wallsburg Town Water System	500	107	71	**179**	10	36	**46**	117	107	**224**
Woodland South Hills Irrigation	60	119	298	**417**	0	0	**0**	119	298	**417**
WASATCH COUNTY TOTALS	**18,510**	**129**	**40**	**169**	**34**	**15**	**50**	**163**	**56**	**218**

*Commmercial, Institutional, and Industrial

Table 24 on the following page gives the water use for public non-community, self-supplied industries, and private domestic water systems. There are several campgrounds, both private and public, summer home developments, private businesses, as well as state parks including Deer Creek Lake, Jordanelle, and Wasatch Mountain State Parks. There are no self-supplied industries in this area of Wasatch County. There are, however, a large number of private wells for mostly individual summer homes.

TABLE 24
WASATCH COUNTY
Water Use for Public Community Systems, Self-Supplied Industries and Private Domestic Systems (Acre-Feet/Year)

WASATCH COUNTY WATER SUPPLIER	POTABLE USAGE					Total Secondary Water Use
	Residential Use	Commercial Use	Institutional Use	Industrial Use	Total Potable Use	
Camp Cloud Rim (Utah Girl Scouts)	0.0	0.0	2.5	0.0	**2.5**	**0.0**
Camp Roger YMCA	0.0	0.0	1.0	0.0	**1.0**	**0.0**
Daniel Summit Estates	4.0	0.0	0.0	0.0	**4.0**	**0.0**
Deer Creek Park	0.0	3.5	0.0	0.0	**3.5**	**5.0**
Diamond Hills Association	1.5	0.0	0.0	0.0	**1.5**	**0.0**
Forest Service Systems:						
Cascade Springs	0.0	0.0	0.5	0.0	**0.5**	**0.0**
Heber Ranger Station	0.0	0.0	2.0	0.0	**2.0**	**0.0**
Mill Hollow Campground	0.0	0.0	0.5	0.0	**0.5**	**0.0**
Heber City Kingdom Hall	0.0	0.0	0.6	0.0	**0.6**	**0.0**
Heber Valley RV Park	0.0	4.0	0.0	0.0	**4.0**	**0.0**
Holladay-Mt. Olympus Camp	0.0	1.5	0.0	0.0	**1.5**	**0.0**
Homestead Resort - Golf Course	0.0	0.0	0.0	0.0	**0.0**	**250.0**
LDS Church Facilities:						
Heber East Stake Center	0.0	0.0	0.5	0.0	**0.5**	**0.0**
Lake Creek Rec. Properties	0.0	0.0	1.0	0.0	**1.0**	**0.0**
Oakcrest LDS Girls Camp	0.0	0.0	8.0	0.0	**8.0**	**0.0**
Mill Hollow Education Center	0.0	0.0	1.5	0.0	**1.5**	**0.0**
Oak Haven	5.0	0.0	0.0	0.0	**5.0**	**0.0**
The Other End	0.0	0.8	0.0	0.0	**0.8**	**0.0**
Snake Creek Mutual Water	2.0	0.0	0.0	0.0	**2.0**	**0.0**
Soapstone Summer Homes	10.0	0.0	0.0	0.0	**10.0**	**0.0**
State Of Utah:						
Deer Creek Lake State Park	0.0	0.0	3.0	0.0	**3.0**	**0.0**
Island Beach	0.0	0.0	3.0	0.0	**3.0**	**0.0**
Jordanelle State Park	0.0	0.0	5.0	0.0	**5.0**	**0.0**
Little Deer Creek Camp	0.0	0.0	3.0	0.0	**3.0**	**0.0**
Wasatch Mountain State Park	0.0	0.0	50.0	0.0	**50.0**	**600.0**
Wasatch County Facilities:						
Solid Waste Transfer Station	0.0	0.0	1.0	0.0	**1.0**	**0.0**
Total Non-Community	**22.5**	**9.8**	**83.1**	**0.0**	**115.4**	**855.0**
Self Supplied Industries[1]	0.0	0.0	0.0	0.0	**0.0**	**0.0**
Private Domestic Use	500.0	0.0	0.0	0.0	**500.0**	**0.0**
WASATCH COUNTY TOTALS	**522.5**	**9.8**	**83.1**	**0.0**	**615.4**	**855.0**

[1]There are no self supplied industries

Total M&I potable water use for all water systems in the Wasatch County portion of the Utah Lake Basin is about 3,992 acre-feet, while non-potable use is 2,008 acre-feet for a total overall M&I water use of 6,000 acre-feet. With a current population of about 20,000 people, this portion of the county has an overall water use rate of 268 gallons per capita per day.

APPENDIX A

OREM MUNICIPAL WATER SYSTEM

WATER USE DATA FORM

AR: 1 4-26-04 G

Information jointly requested by:
Utah Division of Water Resources, 538-7264
Division of Drinking Water, 538-4200, and
Division of Water Rights, 538-7392

UTAH WATER USE DATA FORM
DATA FOR 2003

Return completed form to:
Utah Division of Water Rights
P.O. Box 146300
Salt Lake City, Utah 84114-6300

System Name: Orem Municipal Water System
Address: 56 North State
Orem, Utah 84057

Population served: 88,897 DEQ #: 25020
Total No. Connections: 20,330 County: Utah
Average Lot Size Served: 1/4 Acre (s)
Estimated Percent of Lot Irrigated 50 %
Phone Number: 801-229-7552
Phone Number: 801-229-7555

RECEIVED
APR 23 2004
WATER RIGHTS
SALT LAKE

Contact Person: Bruce W. Chesnut, Director of Public Works
E-Mail Address: bwchesnut@orem.org
Form Filled Out By: Lane Gray & Elden Olsen
I. STORAGE INVENTORY: Total treated storage capacity: 12,440,000 In gallons. Number of tanks: 6
II. SOURCE INVENTORY:

1. Source Name: Utah Valley Water Treatment Plant Type: RS Location: Sec 1, T6S, R2E, B&M, WR Number:
Method of measurement: [X] Master Meter, [ ] Individual Meter, [ ] Estimate, [ ] Other _____
Units of Measurement: Gal. X 1,000

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Yearly Total
149,856	126,672	121,299	135,720	309,148	51,691	760,655	693,940	401,694	354,066	110,838	140,240	3,355,819

2. Source Name: Alta Springs Type: SP Location: Sec 33,T5S, R3E, SLB&M WR Number: 55-4160, 55-7063
Method of measurement: [X] Master Meter, [ ] Individual Meter, [ ] Estimate, [ ] Other _____
Units of Measurement: Gal. X 1,000

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Yearly Total
36,379	30,551	30,401	27,574	29,732	42,114	104139	125,267	100,719	81,222	61,432	52,049	721,579

3. Source Name: Canyon Springs Type: Spring Location: Sec 6, T6S, R3E, SLB&M WR Number: 55-3767
Method of measurement: [X] Master Meter, [ ] Individual Meter, [ ] Estimate, [ ] Other _____
Units of Measurement: Gal. X 1,000

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Yearly Total
15,671	13,423	12,643	15,088	14,361	13,881	15,284	13,862	13,993	14,760	12,833	14,148	169,947

4. Source Name: Well No. 1 (1500 S. 800 E.) Type: Well Location: Sec 25, T6S, R2E, SLB&M WR Number: 55-290, 55-321, 55-654, 55-690, 55-752, 55-954
Method of measurement: [X] Master Meter, [ ] Individual Meter, [ ] Estimate, [ ] Other _____
Date of Last Pump Test: 5-94 Yield of Well: 3,300 gpm Rated Pump Capacity _____ [ ] gpm, [ ] cfs
Units of Measurement: Gal. X 1,000

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Yearly Total
21,707				28,958	84,436	97,647	89,956	96,535	88,997	11,888		520,124

5. Source Name: Well No. 2 (715 N. 980 W.) Type: Well Location: Sec 9, T6S, R2E, SLB&M WR Number: 55-290, 55-321, 55-654, 55-690, 55-752, 55-954
Method of measurement: [X] Master Meter, [ ] Individual Meter, [ ] Estimate, [ ] Other _____
Date of Last Pump Test: 5-94 Yield of Well: 3,000 gpm Rated Pump Capacity _____ [ ] gpm, [ ] cfs
Units of Measurement: Gal. X 1,000

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Yearly Total
			32,722	33,473	61,185	63,625	41,087	61,755	14,300			308,147

6. Source Name: Well No. 3 (475 N. 400 E.) Type: Well Location: Sec 11, T6S, R2E, SLB&M WR Number: 55-290, 55-321, 55-654, 55-690, 55-752, 55-954

Method of measurement: [X] Master Meter, [ ] Individual Meter, [ ] Estimate, [ ] Other _____

Date of Last Pump Test: _____ Yield of Well: 1,400 gpm Rated Pump Capacity _____ [ ] gpm, [ ] cfs

Units of Measurement: Gal. X 1,000

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Yearly Total
2,683			41,879	42,319	43,757	51,820	37,570	43,070	53,934	64,576	32,532	414,140

7. Source Name: Well No. 4 (1000 E. 93 S.) Type: Well Location: Sec 13, T6S, R2E, SLB&M WR Number: 55-290, 55-321, 55-654, 55-690, 55-752, 55-954

Method of measurement: [X] Master Meter, [ ] Individual Meter, [ ] Estimate, [ ] Other _____

Date of Last Pump Test: _____ Yield of Well: 3,300 gpm Rated Pump Capacity _____ [ ] gpm, [ ] cfs

Units of Measurement: Gal. X 1,000

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Yearly Total
43,394	37,647	60,198	42,170	126,134	80,661	104,652	88,180	91,851	546			675,433

8. Source Name: Well No. 5 (250 E. 50 N.) Type: Well Location: Sec 14, T6S, R2E, SLB&M WR Number: 55-290, 55-321, 55-654,55-690, 55-752, 55-954

Method of measurement: [X] Master Meter, [ ] Individual Meter, [ ] Estimate, [ ] Other _____

Date of Last Pump Test: _____ Yield of Well: 3,500 gpm Rated Pump Capacity _____ [ ] gpm, [ ] cfs

Units of Measurement: Gal. X 1,000

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Yearly Total
28,654	48,904	60,377	39,914	88,949	72,752	88,978	82,119	77,004	84,759	20,456	39,946	732,812

SOURCE COMMENTS: Water Supply conditions were: [ ] Above normal, [X] Below normal

Water table levels are dropping at each Well location, and Springs are producing less water in comparison to other years. Both issues are attributed to the sixth straight year of drought conditions.

III. WATER USE BREAKDOWN: (If quantities are not known, please estimate percentages. See instructions for definition of uses shown in bold.)
Units of Measurement: Gallons
Source of data: [ ] Meter readings at the source; [X] Meter readings at individual connections; or [ ] Estimated

Residential:	Annual quantity of water delivered for residential purposes -	5,087,547,000	Total number of residential connections -	18,388
Commercial:	Annual quantity of water delivered for commercial purposes -	1,811,051,000	Total number of commercial connections -	1942
Industrial:	Annual quantity of water delivered for industrial purposes -	N/A	Total number of industrial connections -	N/A
Institutional:	Annual quantity of water delivered for institutional purposes -	N/A	Total number of institutional connections -	N/A
Stock watering:	Annual quantity of water delivered for stock watering purposes -	N/A	Total number of stock watering connections -	N/A
Un-metered:	Annual quantity of water delivered for un-metered purposes -	N/A	Total number of un-metered connections -	N/A
Wholesale:	Annual quantity of water delivered for wholesale purposes -	N/A	Total number of wholesale connections -	N/A
Other uses:	Annual quantity of water delivered for other uses purposes -	N/A	Total number of other uses connections -	N/A

Describe other uses N/A

Total annual quantity of water delivered for all purposes: 6,898,598,000 , Total number of all connections: 20,330

IV. Irrigation System (Separate lawn and garden irrigation system, whether controlled by the drinking water supplier or not)
Is your area served by a separate irrigation water system? [X] Yes, [] No If yes please provide the following information:
What percent of your customers are served by a separate irrigation system? >1% The water delivered 100% by ditch _____ % by pressurized irrigation system _____
Number of Stock holders _____ Total shares of stock _____ Total acres irrigated 115

Please enter quantity of water delivered by the irrigation system: Institutional acreage _____ Quantity of water _____
Method of Measurement: [X] Master Meter, [ ] Individual meter, [ ] Estimate, [ ] Other
Units of Measurement: Acre Feet

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Yearly Total
			5 AF	25 AF	53 AF	63 AF	55 AF	45 AF	46 AF			292 AF

Do these quantities reflect water delivered to the municipal service area only? [X] Yes, [ ] No If no, percent delivered to municipal service area? _____

APPENDIX B

2005 UTAH LAKE BASIN

M&I DELIVERIES AND DEPLETIONS

2005 UTAH LAKE BASIN M&I DELIVERIES AND DEPLETION TABLE

(Acre-Feet/Year)

WATER SUPPLIER	Potable Residential Indoor Use	Potable Residential Outdoor Use	Potable Commercial Use	Potable Institutional Use	Potable Industrial/ Stockwater Use	Total Potable Use	Total Secondary Water Use	Total Indoor Use	Total Outdoor Use	Residential Indoor Return Flow	Commercial Indoor Return Flow	Institutional Indoor Return Flow	Industrial/ Stockwater Indoor Return Flow	Total Indoor Return Flow To Treatment Facility	Pond Evaporation	Treatment Facility Outflow (Indoor Return Flow)	Outdoor Return Flow	Total Return Flow	Total Deliveries	Total Depletions
Juab County																				
Mona	80.0	100.0	5.0	15.0	0.0	**200.0**	150.0	87.0	263.0	78.4	3.9	2.9	0.0	85.3	0.0	***83.6***	87.7	171.2	350.0	178.8
Nephi	417.1	600.0	5.0	100.0	350.0	**1,472.1**	350.0	791.1	1,031.0	408.8	3.9	19.6	0.0	432.3	183.3	**240.3**	343.7	584.0	1,822.1	1,238.1
Rocky Ridge Town	23.2	20.5	0.5	3.0	0.5	**47.7**	0.0	24.7	23.0	22.7	0.4	0.6	0.0	23.7	0.0	***23.2***	7.7	30.9	47.7	16.8
TOTAL COMMUNITY SYSTEMS	**520.3**	**720.5**	**10.5**	**118.0**	**350.5**	**1,719.8**	**500.0**	**902.8**	**1,317.0**	**509.9**	**8.2**	**23.1**	**0.0**	**541.3**	**183.3**	**347.1**	**439.0**	**786.1**	**2,219.8**	**1,433.7**
Non-community systems	0.0	0.0	0.0	2.0	0.0	2.0	0.0	0.4	1.6	0.0	0.0	0.4	0.0	0.4	0.0	***0.4***	0.5	0.9	2.0	1.1
Self-Supplied Industries	0.0	0.0	0.0	0.0	15.0	15.0	190.0	205.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	***0.0***	0.0	0.0	205.0	205.0
Private Domestic Systems	67.0	133.0	0.0	0.0	0.0	200.0	0.0	67.0	133.0	65.7	0.0	0.0	0.0	65.7	0.0	***62.4***	44.3	106.7	200.0	93.3
COUNTY TOTALS	**587.3**	**853.5**	**10.5**	**120.0**	**365.5**	**1,936.8**	**690.0**	**1,175.2**	**1,451.6**	**575.6**	**8.2**	**23.5**	**0.0**	**607.3**	**183.3**	**409.8**	**483.9**	**893.7**	**2,626.8**	**1,733.1**
Summit County																				
Francis Town Water System	54.0	100.0	0.4	5.6	0.0	**160.0**	60.0	55.4	164.6	52.9	0.3	1.1	0.0	54.3	0.0	***51.6***	54.9	106.5	220.0	113.5
Woodland Mutual Water Co.	15.0	40.0	5.0	5.0	5.0	**70.0**	5.0	25.0	50.0	14.7	3.9	1.0	0.0	19.6	0.0	***18.6***	16.7	35.3	75.0	39.7
Subtotal Community Systems	**69.0**	**140.0**	**5.4**	**10.6**	**5.0**	**230.0**	**65.0**	**80.4**	**214.6**	**67.6**	**4.2**	**2.1**	**0.0**	**73.9**	**0.0**	**70.2**	**71.5**	**141.8**	**295.0**	**153.2**
Non-community systems	1.1	2.2	0.0	0.8	0.0	4.1	10.0	1.3	12.8	1.1	0.0	0.2	0.0	1.2	0.0	***1.2***	4.3	5.5	14.1	8.6
Self-Supplied Industries	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	***0.0***	0.0	0.0	0.0	0.0
Private Domestic Systems	3.3	6.7	0.0	0.0	0.0	10.0	0.0	3.3	6.7	3.2	0.0	0.0	0.0	3.2	0.0	***3.1***	2.2	5.3	10.0	4.7
COUNTY TOTALS	**73.4**	**148.9**	**5.4**	**11.4**	**5.0**	**244.1**	**75.0**	**85.0**	**234.1**	**71.9**	**4.2**	**2.2**	**0.0**	**78.4**	**0.0**	**74.5**	**78.0**	**152.5**	**319.1**	**166.6**
Utah County																				
Alpine	650.0	200.0	30.0	20.0	25.0	**925.0**	2,340.0	703.0	2,562.0	637.0	23.5	3.9	0.0	664.4	0.0	651.2	854.0	1,505.2	3,265.0	1,759.8
Alpine Cove Water SSD	20.0	53.0	0.0	0.0	2.0	**75.0**	0.0	22.0	53.0	19.6	0.0	0.0	0.0	19.6	0.0	19.2	17.7	36.9	75.0	38.1
American Fork City	1,908.5	2,817.6	896.1	2,166.6	0.0	**7,788.8**	500.0	3,058.7	5,230.1	1,870.3	702.5	424.7	0.0	2,997.5	0.0	2,937.6	1,743.4	4,680.9	8,288.8	3,607.9
Bradford Acres Water Assoc.	3.0	0.0	0.0	0.0	0.0	**3.0**	15.0	3.0	15.0	2.9	0.0	0.0	0.0	2.9	0.0	***2.8***	5.0	7.8	18.0	10.2
Cedar Fort	25.0	55.0	2.0	20.0	0.0	**102.0**	20.0	30.6	91.4	24.5	1.6	3.9	0.0	30.0	0.0	***28.5***	30.5	59.0	122.0	63.0
Cedar Hills	600.0	400.0	10.0	20.0	0.0	**1,030.0**	900.0	612.0	1,318.0	588.0	7.8	3.9	0.0	599.8	0.0	587.8	439.3	1,027.1	1,930.0	902.9
Covered Bridge Canyon	23.5	38.6	0.0	5.0	0.0	**67.1**	0.0	24.5	42.6	23.0	0.0	1.0	0.0	24.0	0.0	***22.8***	14.2	37.0	67.1	30.1
Eagle Mountain Town	900.0	900.0	142.0	262.0	0.0	**2,204.0**	300.0	1,066.0	1,438.0	882.0	111.3	51.4	0.0	1,044.7	0.0	1,023.8	479.3	1,503.1	2,504.0	1,000.9
Elberta	20.0	20.0	0.0	5.0	0.0	**45.0**	25.0	21.0	49.0	19.6	0.0	1.0	0.0	20.6	0.0	***19.6***	16.3	35.9	70.0	34.1
Elk Ridge	201.5	274.3	0.0	0.0	0.0	**475.8**	0.0	201.5	274.3	197.5	0.0	0.0	0.0	197.5	0.0	193.5	91.4	285.0	475.8	190.8
Fairfield Irrigation Company	8.1	4.0	0.0	2.0	2.0	**16.1**	28.0	10.5	33.6	7.9	0.0	0.4	0.0	8.3	0.0	***7.9***	11.2	19.1	44.1	25.0
Genola	90.0	50.0	1.0	2.0	130.0	**273.0**	330.0	221.2	381.8	88.2	0.8	0.4	0.0	89.4	0.0	***84.9***	127.3	212.2	603.0	390.8
Goosenest Water Company	10.0	30.0	0.0	0.0	0.0	**40.0**	0.0	10.0	30.0	9.8	0.0	0.0	0.0	9.8	0.0	***9.3***	10.0	19.3	40.0	20.7
Goshen	80.0	100.0	2.6	34.2	52.0	**268.8**	120.0	140.9	247.9	78.4	2.0	6.7	0.0	87.1	0.0	***82.8***	82.6	165.4	388.8	223.4
Hidden Creek Water Company	2.5	6.5	0.0	0.0	0.0	**9.0**	0.0	2.5	6.5	2.5	0.0	0.0	0.0	2.5	0.0	***2.3***	2.2	4.5	9.0	4.5
Highland Water Company	800.0	167.8	55.4	200.0	20.0	**1,243.2**	2,500.0	904.3	2,838.9	784.0	43.4	39.2	0.0	866.6	0.0	849.3	946.3	1,795.6	3,743.2	1,947.6
Lehi	2,225.4	0.0	50.0	100.0	20.0	**2,395.4**	6,941.9	2,305.4	7,031.9	2,180.9	39.2	19.6	0.0	2,239.7	0.0	2,194.9	2,344.0	4,538.9	9,337.3	4,798.4
Lindon	675.0	50.5	317.2	20.2	162.6	**1,225.5**	1,450.0	1,095.4	1,580.1	661.5	248.7	4.0	0.0	914.1	0.0	895.9	526.7	1,422.6	2,675.5	1,252.9
Manila Culinary Water Company	240.0	1,100.0	30.0	20.0	0.0	**1,390.0**	0.0	268.0	1,122.0	235.2	23.5	3.9	0.0	262.6	0.0	257.4	374.0	631.4	1,390.0	758.6
Mapleton	570.0	740.0	10.0	20.0	5.0	**1,345.0**	800.0	587.0	1,558.0	558.6	7.8	3.9	0.0	570.4	0.0	559.0	519.3	1,078.3	2,145.0	1,066.7
North Fork SSD	50.0	100.0	110.0	30.0	0.0	**290.0**	0.0	144.0	146.0	49.0	86.2	5.9	0.0	141.1	0.0	***134.1***	48.7	182.7	290.0	107.3
Orem City	6,600.0	7,400.0	3,000.0	1,500.0	500.0	**19,000.0**	300.0	9,800.0	9,500.0	6,468.0	2,352.0	294.0	0.0	9,114.0	0.0	8,931.7	3,166.7	12,098.4	19,300.0	7,201.6
Payson	1,157.3	50.0	200.0	200.0	386.3	**1,993.6**	2,950.0	1,743.6	3,200.0	1,134.2	156.8	39.2	0.0	1,330.2	0.0	1,303.6	1,066.7	2,370.2	4,943.6	2,573.4
Pleasant Grove City	1,800.0	2,200.0	147.8	350.0	3.0	**4,500.8**	400.0	1,991.2	2,909.6	1,764.0	115.9	68.6	0.0	1,948.5	0.0	1,909.5	969.9	2,879.4	4,900.8	2,021.4
Provo City	7,000.0	5,573.8	9,123.3	2,826.8	485.9	**25,009.8**	2,325.0	15,349.9	11,984.9	6,860.0	7,152.7	554.1	0.0	14,566.7	0.0	14,275.4	3,995.0	18,270.4	27,334.8	9,064.4
Salem	400.0	736.5	62.2	105.8	0.3	**1,304.8**	100.0	471.2	933.6	392.0	48.8	20.7	0.0	461.5	46.5	**405.8**	311.2	717.0	1,404.8	687.8
Santaquin City	488.0	386.1	50.3	410.0	190.3	**1,524.7**	400.0	800.5	1,124.2	478.2	39.4	80.4	0.0	598.0	52.0	**534.0**	374.7	908.8	1,924.7	1,015.9
Saratoga Spring Municipal	764.0	36.0	5.0	45.0	0.0	**850.0**	1,050.0	777.0	1,123.0	748.7	3.9	8.8	0.0	761.5	0.0	746.2	374.3	1,120.6	1,900.0	779.4
Spanish Fork	1,986.0	1,760.0	608.6	1,867.2	373.0	**6,594.8**	3,200.0	3,219.3	6,575.5	1,946.3	477.1	366.0	0.0	2,789.4	0.0	2,733.6	2,191.8	4,925.4	9,794.8	4,869.4
Spring Lake	36.0	75.0	5.0	5.0	12.0	**133.0**	30.0	53.0	110.0	35.3	3.9	1.0	0.0	40.2	0.0	***38.2***	36.7	74.8	163.0	88.2
Springdell Plat A & B	7.5	12.5	0.0	1.5	0.0	**21.5**	0.0	7.8	13.7	7.4	0.0	0.3	0.0	7.6	0.0	7.5	4.6	12.1	21.5	9.4
Springville City	1,926.5	1,978.2	648.7	263.1	1,865.8	**6,682.3**	600.0	4,363.9	2,918.4	1,888.0	508.6	51.6	0.0	2,448.1	0.0	2,399.2	972.8	3,372.0	7,282.3	3,910.3
Utah State Hospital	0.0	0.0	0.0	175.0	0.0	**175.0**	75.0	35.0	215.0	0.0	0.0	34.3	0.0	34.3	0.0	33.6	71.7	105.3	250.0	144.7
White Hills Subdivision	36.4	36.8	6.0	0.0	0.0	**79.2**	0.0	41.2	38.0	35.7	4.7	0.0	0.0	40.4	0.0	***38.4***	12.7	51.0	79.2	28.2
Woodland Hills	110.7	234.0	5.0	10.0	0.0	**359.7**	0.0	116.7	243.0	108.5	3.9	2.0	0.0	114.4	0.0	***108.6***	81.0	189.6	359.7	170.1
Subtotal Community Systems	**31,414.9**	**27,586.2**	**15,518.2**	**10,686.4**	**4,235.2**	**89,440.9**	**27,699.9**	**50,201.9**	**66,938.9**	**30,786.6**	**12,166.3**	**2,094.5**	**0.0**	**45,047.4**	**98.5**	**44,029.6**	**22,313.0**	**66,342.6**	**117,140.8**	**50,798.2**
Non-community systems	16.7	33.3	7.0	55.8	150.0	262.8	21.5	183.5	100.8	16.4	5.5	10.9	0.0	32.8	0.0	***31.2***	33.6	64.8	284.3	219.5
Self-Supplied Industries	0.0	0.0	0.0	0.0	675.0	675.0	9,702.0	9,502.0	875.0	0.0	0.0	0.0	0.0	0.0	0.0	***0.0***	855.0	855.0	10,377.0	9,522.0
Private Domestic Systems	1,667.0	3,333.0	0.0	0.0	0.0	5,000.0	0.0	1,667.0	3,333.0	1,633.7	0.0	0.0	0.0	1,633.7	0.0	***1,552.0***	1,111.0	2,663.0	5,000.0	2,337.0
COUNTY TOTALS	**33,098.6**	**30,952.5**	**15,525.2**	**10,742.2**	**5,060.2**	**95,378.7**	**37,423.4**	**61,554.4**	**71,247.7**	**32,436.6**	**12,171.8**	**2,105.5**	**0.0**	**46,713.9**	**98.5**	**45,612.8**	**24,312.6**	**69,925.3**	**132,802.1**	**62,876.8**

(table continued on following page)

2005 UTAH LAKE BASIN M&I DELIVERIES AND DEPLETION TABLE (cont.)

(Acre-Feet/Year)

WATER SUPPLIER	Potable Residential Indoor Use	Potable Residential Outdoor Use	Potable Commercial Use	Potable Institutional Use	Potable Industrial/ Stockwater Use	Total Potable Use	Total Secondary Water Use	Total Indoor Use	Total Outdoor Use	Residential Indoor Return Flow	Commercial Indoor Return Flow	Institutional Indoor Return Flow	Industrial/ Stockwater Indoor Return Flow	Total Indoor Return Flow To Treatment Facility	Pond Evaporation	Treatment Facility Outflow (Indoor Return Flow)	Outdoor Return Flow	Total Return Flow	Total Deliveries	Total Depletions
Wasatch County																				
Canyon Meadows	4.0	7.0	0.0	5.0	0.0	**16.0**	0.0	5.0	11.0	3.9	0.0	1.0	0.0	4.9	0.0	***4.7***	3.7	8.3	16.0	7.7
Center Creek Culinary Water Co.	12.5	15.5	0.0	0.0	0.0	**28.0**	25.0	12.5	40.5	12.3	0.0	0.0	0.0	12.3	0.0	***11.6***	13.5	25.1	53.0	27.9
Charleston WCD	45.0	65.0	10.0	10.0	15.0	**145.0**	60.0	70.0	135.0	44.1	7.8	2.0	0.0	53.9	0.0	***51.2***	45.0	96.2	205.0	108.8
Country Estates Mobile Homes	12.0	0.0	0.0	0.0	0.0	**12.0**	3.0	12.0	3.0	11.8	0.0	0.0	0.0	11.8	0.0	***11.2***	1.0	12.2	15.0	2.8
Daniel Domestic Water Company	27.8	40.0	0.0	0.0	0.6	**68.4**	65.0	28.4	105.0	27.2	0.0	0.0	0.0	27.2	0.0	***25.9***	35.0	60.9	133.4	72.5
Heber City Water System	693.9	835.1	269.7	150.0	34.4	**1,983.1**	250.0	974.1	1,259.0	680.0	211.4	29.4	0.0	920.9	78.6	***796.2***	419.7	1,215.9	2,233.1	1,017.2
Interlaken Mutual Water Company	35.0	30.0	0.0	0.0	0.0	**65.0**	0.0	35.0	30.0	34.3	0.0	0.0	0.0	34.3	0.0	***32.6***	10.0	42.6	65.0	22.4
Jordanelle Special Service District	96.8	90.9	10.2	0.0	0.0	**197.9**	0.0	105.0	92.9	94.9	8.0	0.0	0.0	102.9	0.0	***97.7***	31.0	128.7	197.9	69.2
Midway City Water System	200.0	200.0	60.0	100.0	40.0	**600.0**	550.0	308.0	842.0	196.0	47.0	19.6	0.0	262.6	78.6	***170.9***	280.7	451.5	1,150.0	698.5
Storm Haven	8.0	6.8	0.0	0.0	0.0	**14.8**	20.0	8.0	26.8	7.8	0.0	0.0	0.0	7.8	0.0	***7.4***	8.9	16.4	34.8	18.4
Swiss Alpine Water Co.	20.0	10.0	0.0	0.0	0.0	**30.0**	0.0	20.0	10.0	19.6	0.0	0.0	0.0	19.6	0.0	***18.6***	3.3	22.0	30.0	8.0
Timber Lakes Water SSD	83.5	0.0	0.0	0.0	0.0	**83.5**	0.0	83.5	0.0	81.8	0.0	0.0	0.0	81.8	0.0	***77.7***	0.0	77.7	83.5	5.8
Twin Creeks SSD	58.9	0.0	0.0	0.0	0.0	**58.9**	100.0	58.9	100.0	57.7	0.0	0.0	0.0	57.7	0.0	***54.8***	33.3	88.2	158.9	70.7
Wallsburg Town Water System	40.0	20.0	0.5	5.0	0.0	**65.5**	60.0	41.4	84.1	39.2	0.4	1.0	0.0	40.6	0.0	***38.5***	28.0	66.6	125.5	58.9
Woodland South Hills Irrigation	5.0	3.0	0.0	0.0	0.0	**8.0**	20.0	5.0	23.0	4.9	0.0	0.0	0.0	4.9	0.0	***4.7***	7.7	12.3	28.0	15.7
Subtotal Community Systems	**1,342.4**	**1,323.3**	**350.4**	**270.0**	**90.0**	**3,376.1**	**1,153.0**	**1,766.7**	**2,762.4**	**1,315.6**	**274.7**	**52.9**	**0.0**	**1,643.2**	**157.3**	**1,403.8**	**920.8**	**2,324.6**	**4,529.1**	**2,204.5**
Non-community systems	7.5	15.0	9.8	83.1	0.0	115.4	855.0	32.0	938.4	7.4	7.7	16.3	0.0	31.3	0.0	***29.8***	312.8	342.6	970.4	627.8
Self-Supplied Industries	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	***0.0***	0.0	0.0	0.0	0.0
Private Domestic Systems	167.0	333.0	0.0	0.0	0.0	500.0	0.0	167.0	333.0	163.7	0.0	0.0	0.0	163.7	0.0	***155.5***	111.0	266.5	500.0	233.5
COUNTY TOTALS	**1,516.9**	**1,671.3**	**360.2**	**353.1**	**90.0**	**3,991.5**	**2,008.0**	**1,965.7**	**4,033.8**	**1,486.6**	**282.4**	**69.2**	**0.0**	**1,838.2**	**157.3**	**1,589.0**	**1,344.6**	**2,933.6**	**5,999.5**	**3,065.9**

	Potable Residential Indoor Use	Potable Residential Outdoor Use	Potable Commercial Use	Potable Institutional Use	Potable Industrial/ Stockwater Use	Total Potable Use	Total Secondary Water Use	Total Indoor Use	Total Outdoor Use	Residential Indoor Return Flow	Commercial Indoor Return Flow	Institutional Indoor Return Flow	Industrial/ Stockwater Indoor Return Flow	Total Indoor Return Flow To Treatment Facility	Pond Evaporation	Treatment Facility Outflow (Indoor Return Flow)	Outdoor Return Flow	Total Return Flow	Total Deliveries	Total Depletions
Basin Community Systems	**33,346.6**	**29,770.0**	**15,884.5**	**11,085.0**	**4,680.7**	**94,766.8**	**29,417.9**	**52,951.9**	**71,232.8**	**32,679.7**	**12,453.4**	**2,172.7**	**0.0**	**47,305.8**	**439.1**	**45,850.8**	**23,744.3**	**69,595.0**	**124,184.7**	**54,589.7**
Total Non-Community Systems	25.3	50.5	16.8	141.7	150.0	384.3	886.5	217.1	1,053.7	24.8	13.2	27.8	0.0	65.7	0.0	62.5	351.2	413.7	1,270.8	857.1
Self-Supplied Industries	0.0	0.0	0.0	0.0	690.0	690.0	9,892.0	9,707.0	875.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	855.0	855.0	10,582.0	9,727.0
Private Domestic Systems	1,904.3	3,805.7	0.0	0.0	0.0	5,710.0	0.0	1,904.3	3,805.7	1,866.2	0.0	0.0	0.0	1,866.2	0.0	1,772.9	1,268.6	3,041.5	5,710.0	2,668.5
UTAH LAKE BASIN TOTALS	**35,276.2**	**33,626.2**	**15,901.3**	**11,226.7**	**5,520.7**	**101,551.1**	**40,196.4**	**64,780.3**	**76,967.2**	**34,570.7**	**12,466.6**	**2,200.4**	**0.0**	**49,237.7**	**439.1**	**47,686.1**	**26,219.1**	**73,905.2**	**141,747.5**	**67,842.3**

Color Code:
- **Potable Use Data**
- **Secondary Use Data**
- **Indoor/Outdoor Use Data**
- **Return Flow Data**
- **Delivery Data**
- **Depletion Data**

Treatment Facility Key:
Regular = Sewage Treatment Plant
Bold = Facultative Ponds/ Lagoons
Bold/Italics= Septic System/Tanks