Minutes

Groundwater Management Plan (GMP) Committee

April 13, 2017

12pm – 2pm @ Cedar City Council Chambers

Committee Members

Joe Melling	Brent Hunter	Spencer Jones	Paul Bittmenn
Paul Cozzens	Paul Nelson	Ramon Prestwich	Rob Dotson
Reed Erickson	Paul Monroe		

Members Excused:
Spencer Jones
Paul Nelson

Other Attendees:
Janae Carpenter
Shane Prestwich
Kenan Imlay
Dustin Prestwich
Sheldon Prestwich

Items of Discussion

1. **Review Minutes**
    a. Minutes were reviewed and approved from last month's meeting held March 9, 2017. Motion by Paul Bittmenn, second by Rob Dotson
2. **Aquifer Recharge**
    a. Prestwich suggested constructing a canal on the East side of Quichapa to collect water from the summer floods of Coal Creek and Shirts Canyon. He also asked that we be proactive in finding an area to install a system that will take high flows. Hunter explained that there were lots of other pits in the area that could potentially take water.

    b. Cozzens explained the issues with the Flood Mitigation pit-being in the flight path of the runway and the FAA's concern with migratory birds flying near the landing area. He has viewed historical photos which show water in the pit during wet years where the local airport staff has not managed these bodies of water. He suggested hiring a retired wildlife biologist to manage the waterfowl. Cozzens and Bittmenn are planning to visit with the FAA to resolve some of these issues.

3. **How do we manage unused water rights?**

Melling discussed a conversation that he had with the State Engineer during the Utah Water Users Conference. Melling suggested to Kent that we needed better data to move forward with an effective GMP. We need to know where the unused water is and the status of those water rights. Kent suggested that he had the staff to be able to compile that information.

Attached: Northern Utah GMP, Las Vegas GMP

Bittmenn asked what information we expected to gain from the State Engineer. Dotson explained why we needed additional information on the status of all water rights. When the water was put to beneficial use and the location it is associated with.

Dotson explained the hydrographic area and how we needed to better understand the inflows outflows and where they are occurring. He also expressed the importance of stabilizing those areas.

Monroe discussed the idea of a conservation pool for water rights. The conservation pool would act as a protectant for junior rights or those subject to forfeiture. One example for a junior water right holder would be for them to subscribe to the West Desert Project and when that water was available they would then have to stop using Cedar Valley water and utilize West Desert Water.

This was first implemented in the Las Vegas Valley where demand for water was greater than the supply. "State officials knew that the Las Vegas Valley eventually would have access to surface water from the Colorado River and Lake Mead, once facilities were built to move that water. Consequently, temporary permits were issued with the understanding that the permit holders would use groundwater until the time when their properties could be served with Lake Mead water from a municipal purveyor." – Las Vegas Valley Groundwater Management Program

Melling suggested municipal systems need to expand north and bring water that is mounding back to the south end of the valley.

4. **Reaction of the State Engineers to the recharge efforts and site visit.**

   Erickson reported the State Engineer rode with him on the tour and that he was very impressed. He thought they were smart thoughtful projects. He commended this group and the local governments responsible for the engagement to help remedy the overdraft issue.

5. **Depletion. Does the duty of water need to be reevaluated?**

   This was discussed briefly and decided it would be reviewed at a later date.

6. **Recommendation for future direction and drafting of the GMP plan**

   Monroe suggested looking at developing a conservation pool for certain water rights as discussed. Also, review a policy in the Northern Utah Valley (Cedar Valley) Groundwater Management Plan where they have designated areas where water will not be transferred. In addition, surface water diversion may not be changed to underground points of diversion except in special circumstances. – Cedar Valley and Northern Utah Valley Groundwater Management Plan 4/8/2014 p.7.

   Melling suggested that the GMP document needs to be a living document that can be evaluated as water supply changes due to crops, climate, growth and other factors.

7. **Public Comment (Limit to 3 minutes each)**

   Dustin Prestwich had the following comments:

   a. Conserving water is more efficient
   b. Diversions up the creek to clean up and save water will be cheaper than the West Desert
   c. Surface water is self-regulating and changes in our appropriation policy on surface to ground water should be considered.

Attached: Northern Utah GMP, Las Vegas GMP

8. **Next Meeting Date**
    a. May 11, 2017 Cedar City Council Chambers at Noon.

Attached: Northern Utah GMP, Las Vegas GMP

Las Vegas Valley Water Law

The Las Vegas groundwater basin is the most comprehensively managed basin in Nevada – and with good reason. The basin has been over-appropriated for almost 50 years.

In 1941, the Office of the State Engineer used provisions of the Nevada Underground Water Act of 1939 to designate a portion of the Las Vegas Valley as an underground artesian water basin. This designated area was extended in 1944 and 1946, and a portion of the basin was closed to new irrigation rights in 1949, effectively halting growth. To accommodate the demand for growth, legislation was passed in 1955 that enabled the Office of the State Engineer to issue temporary permits for water, also known as revocable permits.

Temporary or Revocable Permits

Although the continued demand for water was greater than the supply of groundwater in the Las Vegas basin, state officials knew that the Las Vegas Valley eventually would have access to surface water from the Colorado River and Lake Mead, once facilities were built to move that water. Consequently, temporary permits were issued with the understanding that the permit holders would use groundwater until the time when their properties could be served with Lake Mead water from a municipal purveyor.

In the decades since that time, the Office of the State Engineer has issued a series of orders to restrict the issuance of revocable water permits within the Las Vegas Valley. These orders culminated with the issuance of Amended Order 1054 in April 1992. Under this order, with rare exception, all applications to appropriate water filed after March 23, 1992, will be denied.

Currently, there are three basic types of groundwater rights or permits in the Las Vegas groundwater basin: vested, non-revocable, and revocable. These rights or permits are managed and administered by the Office of the State Engineer.

- **Vested** – To be determined valid for a vested right, a well must have been in existence and beneficially using groundwater from an artesian or definable aquifer before March 22, 1913, or from a percolating aquifer before March 25, 1939.

- **Nonrevocable** – Nonrevocable water permits have a priority date before March 24, 1955. As indicated by their name, nonrevocable water permits cannot be revoked. However, they are subject to forfeiture and abandonment as outlined in NRS 534.090.

- **Revocable** – A revocable permit has a priority date on or after March 24, 1955 and is subject to revocation if and when water can be furnished by an entity such as a water district or municipality. Most community wells in the Las Vegas Valley have this type of groundwater permit.

When are permits revoked?
Under legislation passed in 1999, the Office of the State Engineer cannot revoke a temporary or revocable permit unless all three of the following conditions occur:

- A municipal water line is within 180 feet of the permit's place of use.
- The well fails and requires work that involves a drilling rig.
- Financial assistance is provided to the well user to help pay for the cost of connection.

Attached: Northern Utah GMP, Las Vegas GMP

GARY R. HERBERT
Governor
SPENCER J. COX
Lieutenant Governor

State of Utah

DEPARTMENT OF NATURAL RESOURCES
Division of Water Rights

MICHAEL R. STYLER
Executive Director

KENT L. JONES
State Engineer/Division Director

April 8, 2014

Dear Water Users:

The Cedar Valley and Northern Utah Valley Groundwater Management Plan was adopted on April 8, 2014. This plan amends the northern Utah Valley portions of the Utah/Goshen Valley Groundwater Management Plan and the Cedar Valley Ground-Water Policy, both dated November 15, 1995, and actions adopted in correspondence from Jerry D. Olds, State Engineer, dated November 2, 2004, regarding the management of groundwater in Cedar Valley.

We appreciate everyone who participated at public meetings and submitted comments during the development of this plan. We look forward to your continued support.

Sincerely,

Kent L. Jones, P.E.
State Engineer

1594 West North Temple, Suite 220, PO Box 146300, Salt Lake City, UT 84114-6300
telephone (801) 538-7240 • facsimile (801) 538-7467 • *www.waterrights.utah.gov*
Attached: Northern Utah GMP, Las Vegas GMP

CEDAR VALLEY AND NORTHERN UTAH VALLEY GROUNDWATER MANAGEMENT PLAN

Adoption Date: April 8, 2014

Introduction

The *Cedar Valley and Northern Utah Valley Groundwater Management Plan* amends the northern Utah Valley portions of the *Utah/Goshen Valley Groundwater Management Plan*, November 15, 1995, and the *Cedar Valley Ground-Water Policy*, November 15, 1995. This plan also amends actions adopted in correspondence from Jerry D. Olds, State Engineer, dated November 2, 2004 regarding the management of groundwater in Cedar Valley.

The objectives of this groundwater management plan are to ensure groundwater withdrawals do not exceed safe yield, to safeguard the physical integrity of the aquifer, and to protect water quality in northern Utah and Cedar Valleys. Studies and water right records indicate if all known water rights were fully exercised, groundwater withdrawals in Cedar and northern Utah Valleys would exceed recharge. Groundwater withdrawals do not currently exceed recharge.

The intent of this plan is to provide specific management guidelines for northern Utah and Cedar Valleys under Section 73-5-15 of the Utah Code. The 1995 *Utah/Goshen Valley Groundwater Management Plan* remains in effect for Goshen Valley and portions of Utah Valley not included in this plan.

Affected Area

This groundwater management plan applies to Cedar Valley and northern Utah Valley comprising Water Right Area 54 and a portion of Water Right Area 55 as shown in Figure 1. For purposes of this plan, Water Right Area 54 is divided into 54 East and 54 West. Area 54 West is defined in the November 15, 1995 *Cedar Valley Groundwater Policy* as the alluvial valley west of Utah Lake which is bounded on the north by the Traverse Range, on the west by the Oquirrh and East Tintic Mountains, and in the east by the Lake Mountains. Area 54 East is the remaining portions of Water Right Area 54 not included in Area 54 West. The *Cedar Valley and Northern Utah Valley Groundwater Management Area Boundaries* can be found on the Division of Water Rights webpage.

Background

The United States Geologic Survey (USGS) published two reports entitled "Hydrology of Northern Utah Valley, Utah County, Utah, 1975 – 2005" (Jay R. Cederberg, Phillip M. Gardner, Susan A. Thiros, 2009) and "Three-Dimensional Numerical Model of Ground-Water Flow in northern Utah Valley, Utah County, Utah" (Gardner, 2009). The Utah Geological Survey (UGS) analyzed the hydrogeology of Cedar Valley in a report "Hydrogeology and Simulation of Groundwater Flow in Cedar Valley, Utah County, Utah." (Jordan and Sabbah, 2012). These documents, used in conjunction, describe the hydrogeology in northern Utah Valley and Cedar Valley.

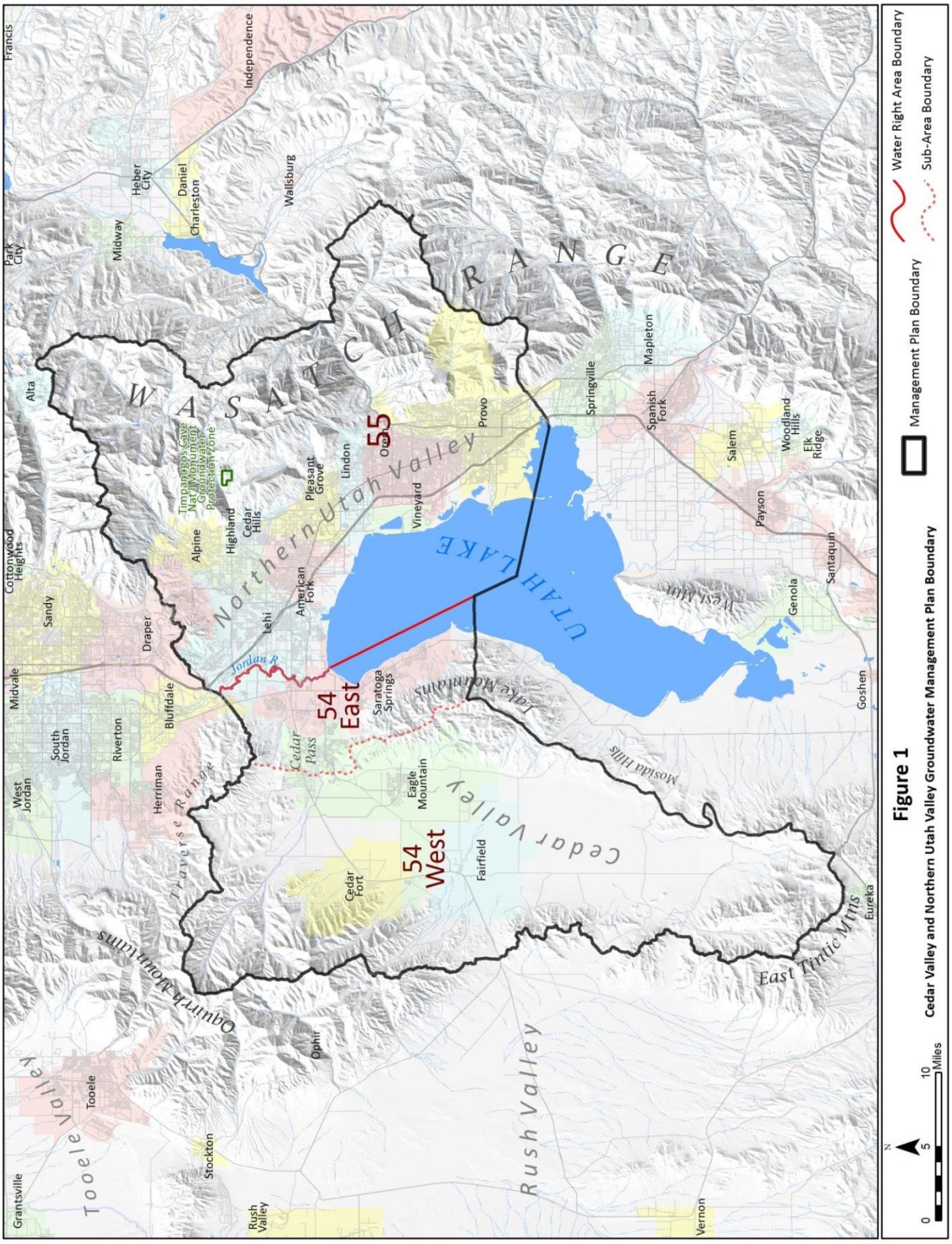

Figure 1

Cedar Valley and Northern Utah Valley Groundwater Management Plan Boundary

Attached: Northern Utah GMP, Las Vegas GMP

This groundwater management plan encompasses two hydrologic groundwater systems with distinct recharge sources, both naturally discharging towards Utah Lake and the Jordan River. These two systems are associated with water right administrative Area 54 and a portion of Area 55 (see Figure 1).

The Area 54 groundwater system is predominantly recharged from the Oquirrh Mountains. Groundwater moves generally from the west to the east, exiting Cedar Valley through the subsurface at Cedar Pass and Mosida Hills as illustrated on Figure 2. Approximately 10,000 acre-feet of groundwater leaves Cedar Valley by subsurface outflow through the Cedar Pass area and approximately 4,700 acre-feet leaves through the Mosida Hills area.[1] Groundwater in Area 54 eventually discharges to Utah Lake and the Jordan River.

The groundwater in the Area 55 system is predominantly recharged from the Wasatch Range. It moves generally from east to west, ultimately discharging to Utah Lake and the Jordan River. The estimated long-term average recharge to each flow system is tabulated in Table 1.

Table 1. Hydrologic System Recharge.

Recharge by Area	
Area 54	Quantity (ac-ft/yr)
54 West[1]	25,000
54 East[2]	1,000
Total Area 54	**26,000**
Area 55	Quantity (ac-ft/yr)
Utah Valley[3]	**145,000**

Current Conditions

Northern Utah County

The current estimate of average annual withdrawal from wells in northern Utah Valley is about 69,600 acre-feet.[4] In addition, an estimated 69,000 acre-feet[5] of water per year discharges to valley drains and springs and is fully utilized by existing rights. The total usage in northern Utah Valley from wells and discharges is projected to be 138,600 acre-feet per year. Approximately

[1] J. Lucy Jordan, Walid W. Sabbah, 2012, Utah Geological Survey (USG), "Hydrology and Simulation of Groundwater Flow in Cedar Valley, Utah County, Utah," page 2.
[2] Jay R. Cederberg, Phillip M. Gardner, Susan A. Thiros, 2009, United States Geologic Survey (USGS) "Hydrology of Northern Utah Valley, Utah County, Utah, 1975-2005," page 24, 33, and 35.
[3] Jay R. Cederberg, Phillip M. Gardner, Susan A. Thiros, 2009, United States Geologic Survey (USGS) "Hydrology of Northern Utah Valley, Utah County, Utah, 1975-2005," 145,000 acre-feet is estimated by reducing the amount of recharge from of Area 54 East from the recharge of all of northern Utah Valley, page 24 and 25.
[4] USGS, Utah Department of Natural Resources, and Utah Department of Environmental Quality. "Groundwater Conditions in Utah," 1995 – 2011, average withdrawal for Northern Utah Valley.
[5] Jay R. Cederberg, Phillip M. Gardner, Susan A. Thiros, 2009, United States Geologic Survey (USGS) "Hydrology of Northern Utah Valley, Utah County, Utah, 1975-2005," page 24, 33, and 35.

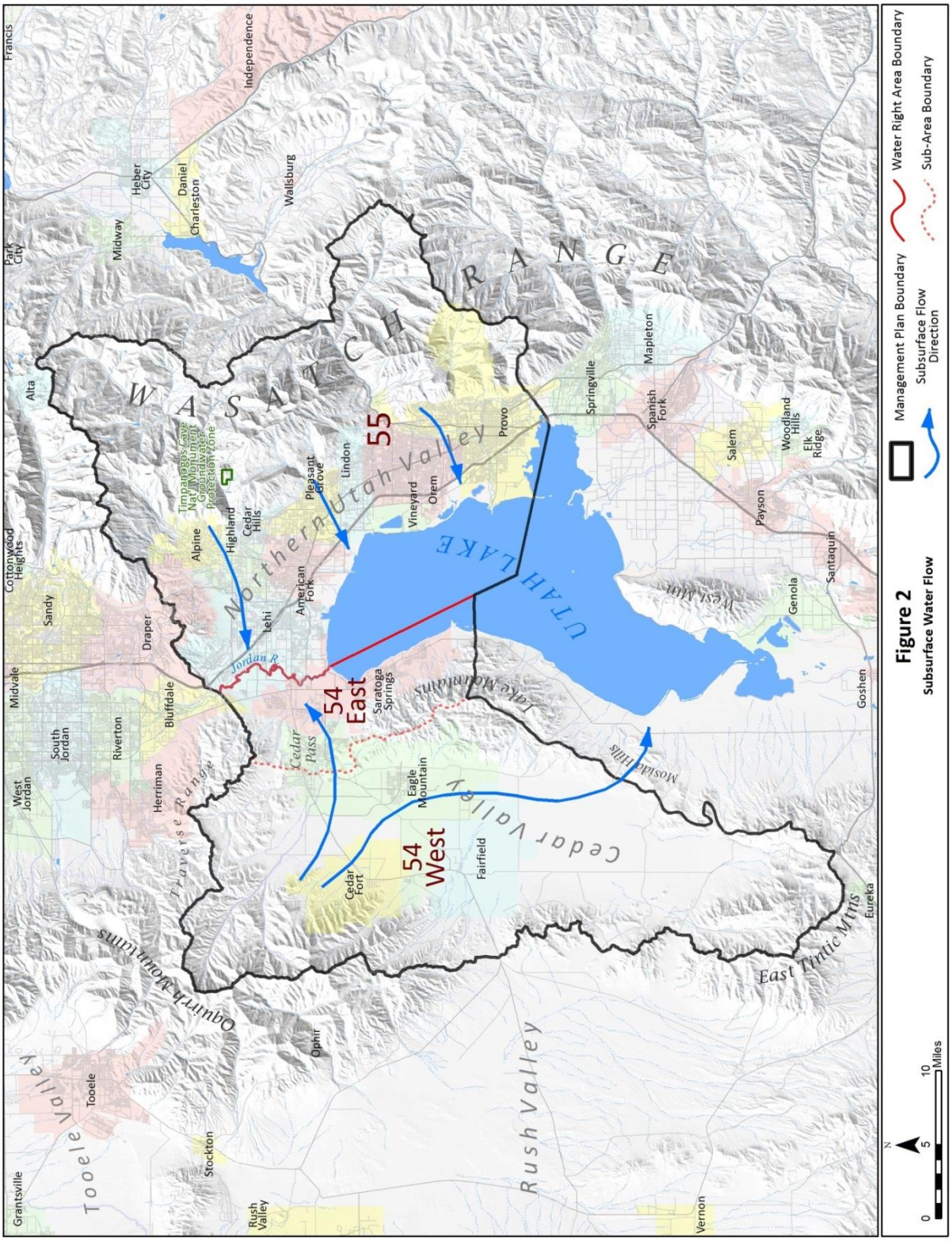

Figure 2
Subsurface Water Flow

Attached: Northern Utah GMP, Las Vegas GMP

1,000 acre-feet of well withdrawal in northern Utah Valley occurs within the area defined as Area 54 East; therefore, the calculated value of groundwater withdrawal in the Area 55 portion of northern Utah Valley is approximately 137,600 acre-feet.

Based on existing water rights, the amount of potential groundwater withdrawal from wells in northern Utah Valley was conservatively estimated by totaling quantities of water associated with perfected (developed) and approved (undeveloped or developing) groundwater rights of record with the Division of Water Rights. To provide the most accurate assessment of potential groundwater withdrawal, existing water rights were in some cases adjusted based on projections of future use. The potential groundwater withdrawal (including drains and springs) is estimated to be 265,000 acre-feet per year for northern Utah Valley; approximately 245,000 acre-feet for the Area 55 section of the valley; and approximately 20,000 acre-feet within the Area 54 East.

Table 2. Estimated Potential Groundwater Withdrawal in Northern Utah Valley.

Potential Groundwater Use	
Type	**Quantity (ac-ft/yr)**
Domestic and Stock	2,000
Irrigation	37,000
Municipal	209,000
Industrial/Other	17,000
Total (all of northern Utah Valley)	**265,000**
Total Potential in 54 East	(20,000)
Total (Potential in Area 55)	**245,000**

Cedar Valley

The current average annual withdrawal from wells in Area 54 West is about 5,700 acre-feet[6]. In addition, an estimated 3,700 acre-feet per year[7] discharges to valley drains, ditches and springs. The total estimates of usage from wells and discharges to valley drains, ditches and springs in Area 54 West are estimated to be 9,400 acre-feet per year.

Based on existing water rights, the amount of potential groundwater withdrawal from wells and springs in Area 54 West was estimated by totaling perfected (developed) and approved (undeveloped or developing) groundwater rights of record with the Division of Water Rights. To provide the most accurate assessment of potential groundwater withdrawal, existing water rights were compared and adjusted to reflect measured groundwater use data reported to the Division of Water Rights. The potential groundwater withdrawal (including drains and springs) is estimated to be 19,500 acre-feet per year as shown by use in Table 3.

[6] USGS, Utah Department of Natural Resources, and Utah Department of Environmental Quality. "Groundwater Conditions in Utah," 1995-2011, average withdrawal for Cedar Valley, Utah County.
[7] J. Lucy Jordan, Walid W. Sabbah, 2012, Utah Geological Survey (USG), "Hydrology and Simulation of Groundwater Flow in Cedar Valley, Utah County, Utah," page 100.

Table 3. Estimated Potential Groundwater Withdrawal in Area 54 West.

Potential Groundwater Withdrawal Area 54 West	
Type	**Quantity (ac-ft/yr)**
Domestic and Stock	500
Irrigation	11,700
Municipal/Domestic	7,300
Industrial/Other	negligible
Total	**19,500**

Summary

A summary of the hydrologic and water right data described in this plan is presented in Table 4. Groundwater use in Area 54 is less than half of the average annual projected long-term recharge; however, potential use in this area exceeds the long-term average recharge by 13,500 acre-feet per year. In Water Right Area 55 the estimated groundwater use is slightly under the long-term average recharge; however, potential use in this area exceeds long-term recharge by 100,000 acre-feet per year. A listing of groundwater rights within the groundwater management plan area can be found on the Division of Water Rights' webpage for this groundwater management plan.

Table 4. Summary of Hydrologic and Water Right Data.

Recharge, Potential and Actual Use by Area	
Area 54	
Recharge	**Quantity (ac-ft/yr)**
54 West	25,000
54 East	1,000
Total	26,000
Potential Use	
54 West	19,500
54 East	20,000
Total	39,500
Difference in Potential Use versus Recharge	**-13,500**
Actual Use	
54 West	9,400
54 East	1,000
Total	10,400
Difference in Actual Use versus Recharge	**15,600**
Area 55 Portion of Utah Valley	
Recharge	Quantity (ac-ft/yr)
Utah Valley	145,000
Potential Use	
Total	245,000
Difference in Potential Use versus Recharge	**-100,000**
Actual Use	
Total	137,600
Difference in Actual Use versus Recharge	**7,400**

Appropriation Policy

The following policy guidelines are hereby implemented to ensure groundwater withdrawals do not exceed a safe yield, to safeguard the physical integrity of the aquifer, and to protect water quality in northern Utah and Cedar Valleys.

1) The appropriation of groundwater in northern Utah Valley and Cedar Valley was administratively suspended by the State Engineer in 1995. These areas will remain closed to new consumptive use appropriations.

2) All change or exchange applications that represent a new groundwater withdrawal from Area 54 East or the portion of Area 55 within the groundwater management plan area that were filed after September 30, 2010 will not be approved.

3) Surface water diversions may not be changed to underground point(s) of diversion unless:

    a. The new well is to replace a spring or drain impacted by new groundwater development, where flow is insufficient to supply historical beneficial use. A water user is required to file a change application setting forth a claim of reduced flow due to new groundwater development. The claim of reduced flow must show the reduction is not related to an alteration of the conveyance works of surface rights that may affect the historical return flows or seepage losses from conveyance facilities; or

    b. The well is for the recovery of water from an approved Aquifer Storage and Recovery project; or

    c. The surface source proposed to be changed is within area 54 West (see Figure 1.) and the proposed well remains within area 54 West; or

    d. The surface source proposed to be changed is within a canyon area and the proposed well remains within the same canyon area.

4) Change applications proposing to move groundwater rights anywhere within a given water right area within the management plan boundary, including applications that propose to move water rights from area 54 East to 54 West, will be reviewed on their individual merits and may be approved.

5) Change applications proposing to move underground points of diversion from Water Right Area 54 to Area 55, or Area 55 to Area 54, will not be approved except under the following conditions:

    a. The underground point of diversion to be changed is an approved location as of June 4, 2013 within the Central Zone[8] shown on Figure 3, and;

    b. The proposed hereafter point of diversion remains within the Central Zone.

6) Applications to develop groundwater will not be approved in the Timpanogos Cave National Monument Protection Zone as defined in the Timpanogos Cave National Monument Water Right Settlement Agreement dated March 22, 2004.

Safe Yield

An objective of this plan is to set a safe yield for northern Utah and Cedar Valleys. Based on the recharge information presented, the safe yield for the portion of Area 55 discussed in this plan is estimated to be 145,000 acre-feet and the safe yield for Area 54 is estimated to be 26,000 acre-feet. It is vital for the protection of the groundwater resource to ensure the safe yield is not exceeded.

Inasmuch as potential withdrawals exceed safe yield, future water use will be monitored and further measures will be implemented as necessary to assure safe yield is maintained. All diversions of groundwater within northern Utah and Cedar Valley that are approved to divert 100 acre-feet or more per year are required to install, operate and maintain flow-measuring devices, and report withdrawals annually to the State Water Use Program. Prior to implementation of the monitoring and recording requirements, the State Engineer will notify affected water users. Measuring and reporting withdrawals of groundwater in conjunction with other data collection and monitoring will aid the State Engineer and water users in protecting the resource and implementing the objectives of the groundwater management plan.

Priority Regulation

In the future if the State Engineer determines safe yield is exceeded in all or part of the groundwater management plan area, groundwater withdrawals may be regulated by priority date. Utah statutes provide that each application filed with the State Engineer (Application to Appropriate, Change, or Exchange) has a priority date which is the date the application was received by the State Engineer's office. A regulated area may be the entire basin or may be a much smaller area. The priority date used for regulation in a given area will be the date of the application that first approves the diversion of water from the source within the regulated area. Any proposed regulation of withdrawals in all or part of the groundwater management plan area will be handled as an amendment to this groundwater management plan. At any time water users may agree to participate in a voluntary arrangement to manage withdrawals, including before a determination that groundwater withdrawals exceed safe yield.

[8] The Central Zone is a one-mile buffer on either side of the administrative boundary between Areas 54 and 55.

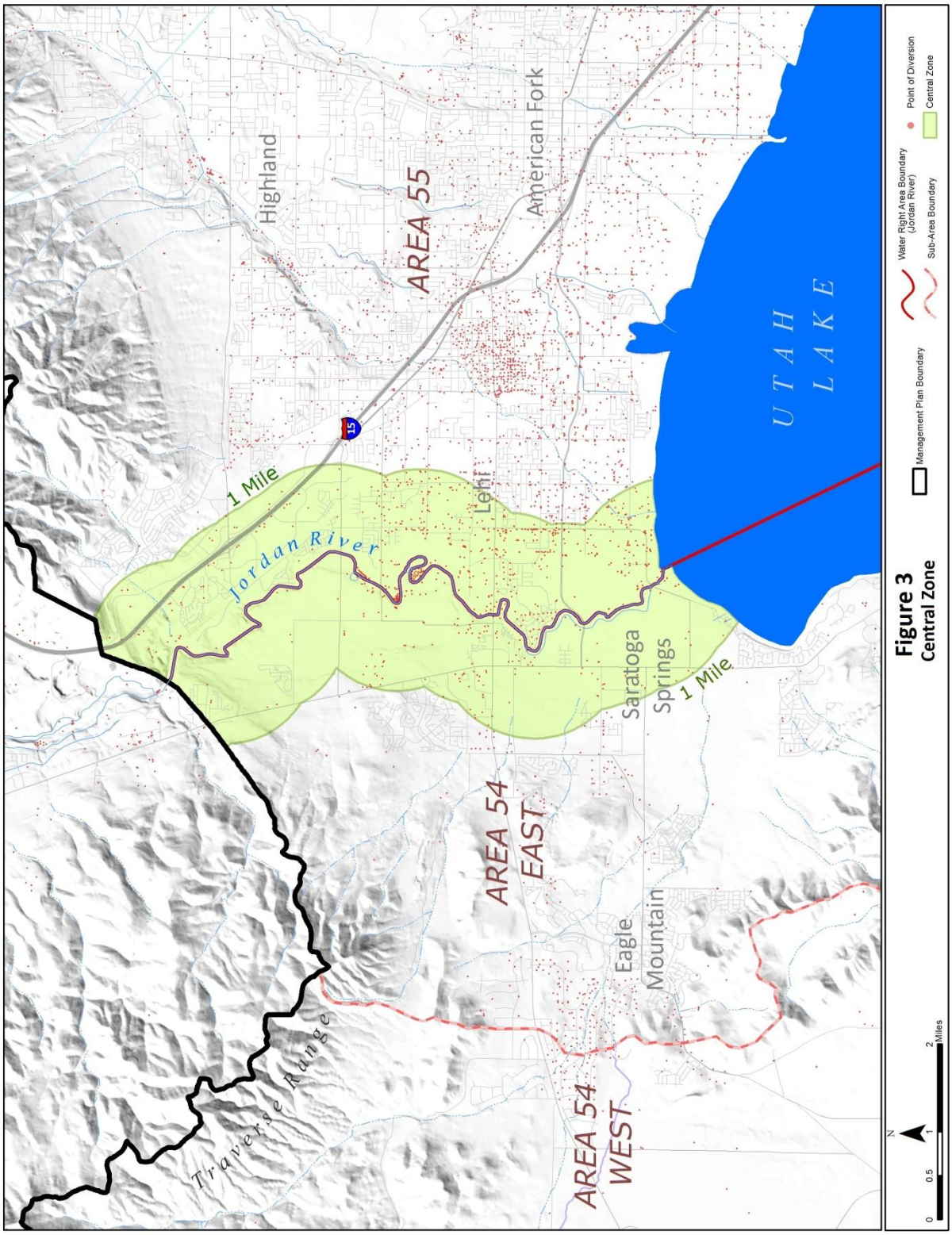

Figure 3
Central Zone

Attached: Northern Utah GMP, Las Vegas GMP