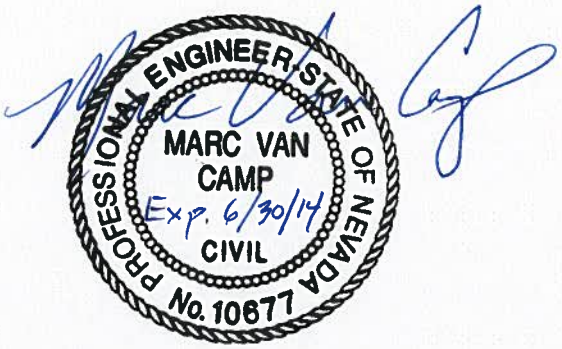
WRID, Lyon County and Bowman Protestants

EXHIBIT

196

Report of Marc Van Camp entitled “Summary of Pertinent Water rights and Conflict With Water Rights Resulting From the Proposed Changes Under NFWF Application 80700”
dated February 14, 2013

Summary of Pertinent Water Rights and Conflict with Water Rights Resulting from the Proposed Changes Under NFWF Application 80700



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February 14, 2013

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SUMMARY OF PERTINENT WATER RIGHTS AND CONFLICT WITH WATER RIGHTS RESULTING FROM THE PROPOSED CHANGES UNDER NFWF APPLICATION 80700

I. EXECUTIVE SUMMARY

The Walker River Decree adjudicates the flow of the Walker River and its tributaries. The United States (U.S.) District Court for the District of Nevada approved the 1953 Rules and Regulations in order to provide for the operation of the Walker River in a manner consistent with the Walker River Decree. A key factor of the Walker River Decree is that the most senior water right, having an 1859 priority and held by the United States for the Walker River Tribe must be delivered to and is measured downstream of all other decreed water rights. Pursuant to the Walker River Decree and the 1953 Rules and Regulations, the Watermaster is required to account for and use the return flow, the non-consumptive use portion of the Water Rights, to satisfy water rights adjudicated within the Walker River Decree. The National Fish and Wildlife Foundation (NFWF) filed Application 80700 to change numerous Walker River decreed natural flow rights for instream purposes with the primary purpose of benefitting Walker Lake. A review of the Watermaster's records indicates there is inadequate water available to meet the full rate of diversion over the entire irrigation season (Face Value) of the water rights associated with Application 80700 in most years. Conflict with existing water rights will occur if the Nevada State Engineer (NSE) were to authorize the full rate of diversion (consumptive and non-consumptive) for instream flows as sought by Application 80700. NFWF has undertaken significant technical work and presented material which indicates or suggests concurrence with the need to limit the water right changes to the consumptive use portion of the water rights. In order to avoid conflict with other water rights, the NSE should authorize the change for only the consumptive use portion of the individual water rights pursuant to Application 80700, and only at a time determined by the Watermaster that the entire Face Value (consumptive and non-consumptive use) is available at the original (existing) point of diversion. The quantity approved for change should not exceed the consumptive use amount (3.0 acre-feet per acre) in an irrigation season.

II. INTRODUCTION

Through a series of public laws, the United States has appropriated funds for restoring and maintaining Walker Lake. Those laws include: (i) Section 2507, Farm and Security Rural Investment Act of 2002, P.L. 107-171 ("Desert Terminal Lake I"), which transferred $200,000,000 from the Secretary of Agriculture to the Bureau of Reclamation to be used "to provide water to at-risk natural desert terminal lakes"; (ii) Section 207 of P.L. 108-7 ("Desert Terminal Lakes II"), which identified the natural desert terminal lakes eligible for benefits from the funding from Desert Terminal Lakes I as Pyramid, Summit, and Walker Lakes in Nevada, and authorized the Bureau of Reclamation to provide financial assistance to various governmental and other organizations to carry out the purposes of Desert Terminal Lakes I; (iii) Section 208 of the

Energy and Water Development Appropriations Act of 2006, P.L. 109-103 ("Desert Terminal Lakes III"), which authorized the Secretary of the Interior to provide up to $70,000,000 of the desert terminal lakes funding to the University of Nevada (Nevada System of Higher Education [the "NSHE"]) to do various things, including acquire "from willing sellers land, water appurtenant to land, and related interests in the Walker River Basin, Nevada" for, among other things, "environmental restoration in the Walker River Basin"; (iv) Section 2807 of P.L. 110-246 ("Desert Terminal Lakes IV"), which "replenished" the $200,000,000 by transferring $175,000,000 from the Secretary of Agriculture to the Bureau of Reclamation in 2008 to be used to lease water, or purchase land, water appurtenant to land and related interests in accordance with Section 208(a)(1)(A) of Desert Terminal Lakes III; and (v) Sections 206 through 208 of P.L. 111-851 ("Desert Terminal Lakes V"), which authorized the Bureau of Reclamation to provide $66,200,000 to NFWF for various purposes related to Walker Lake, and authorized NFWF to replace the NSHE in connection with its activities under Desert Terminal Lakes III.

In October 2009, the Walker Basin Restoration Program (Restoration Program) was established by Desert Terminal Lakes V, which provides that Federal funding for the Restoration Program be used for the primary purpose of restoring and maintaining Walker Lake, while protecting agriculture, environmental, and habitat interests in the Walker River Basin. NFWF assumed leadership of the $206 million Restoration Program in January 2010 (NFWF, 2012). In an effort to provide an increased inflow to Walker Lake, NFWF is using the Restoration Program funding for, (1) a voluntary water rights acquisition program; (2) a three-year leasing demonstration program with the Walker River Irrigation District (District); (3) research, evaluation, modeling, and decision support activities at the University of Nevada, Reno (UNR) and Desert Research Institute (DRI); and (4) conservation and stewardship (nfwf.org/walkerbasin).

NFWF has purchased land and water rights within the Walker River Basin through the Restoration Program. In March 2011, NFWF filed an Application for Permission to Change certain water rights defined in the Walker River Decree. The application was amended and refiled on May 10, 2011, and subsequently was assigned Application 80700 by the NSE. Application 80700 requests to change the place and manner of use for a portion of decreed natural flow rights appurtenant to lands served by the West Hyland Ditch within the District. Application 80700 requests changes to allow water originally authorized for irrigation of lands from the West Hyland Ditch to flow in the Walker River for wildlife purposes with the primary purpose of restoring and maintaining Walker Lake. NFWF did not purchase the land to which the water rights included in Application 80700 are appurtenant.

The purpose of this report is to provide a general summary of the water rights within the Walker River Basin in adequate detail to understand the conflict with existing rights from changes in water rights as requested in Application 80700. More specifically, the understanding of the

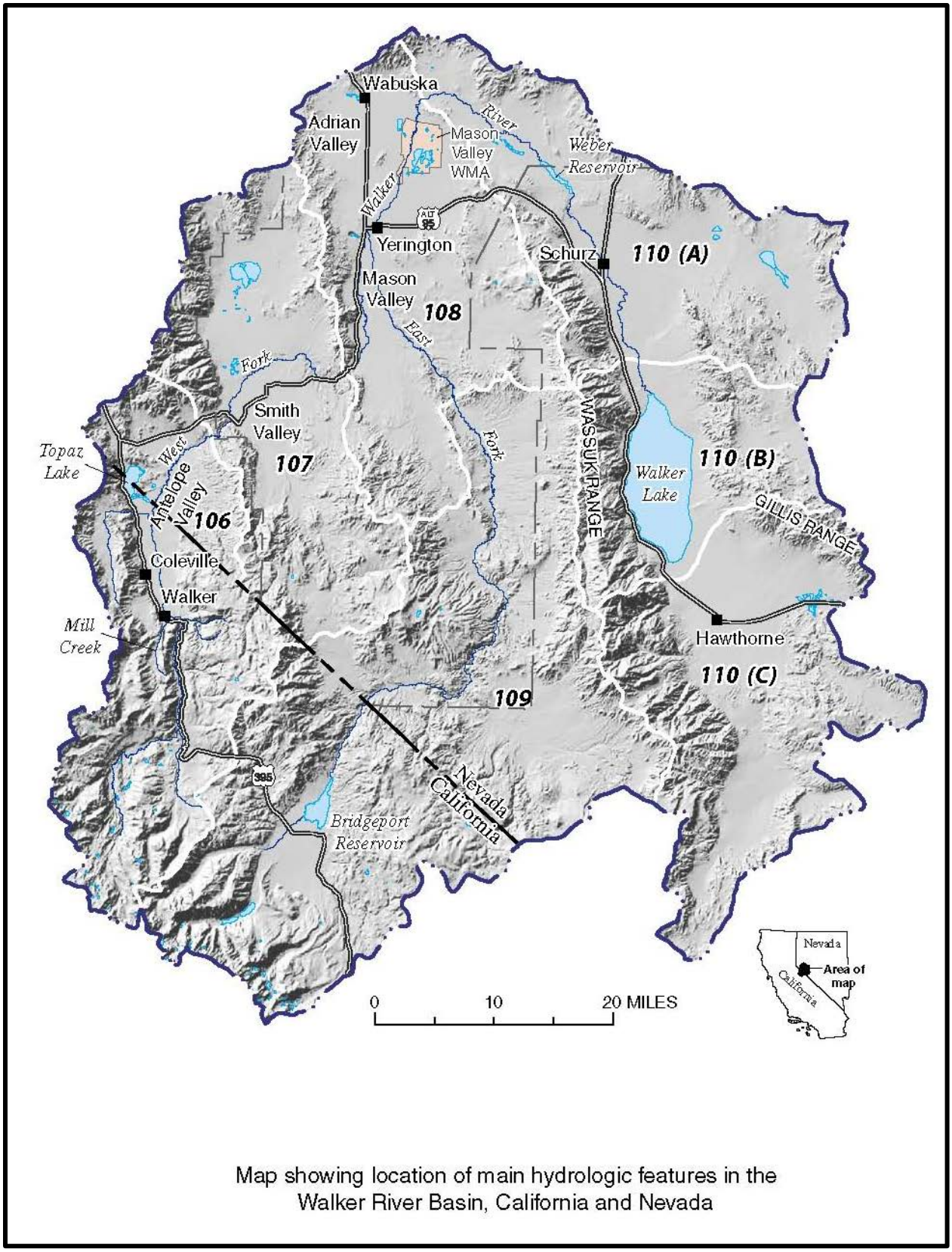
water rights that are being requested for change pursuant to Application 80700 and the associated supplemental water rights, together with the water available to meet these rights, is an important factor when considering conflict with existing rights. Further, this report provides information relative to the purpose and need for using the consumptive use portion associated with a water right as a measure of the quantity of water that may be changed so as to avoid conflict with other existing rights.

III. BACKGROUND

The Walker River Basin is essentially a closed basin in Eastern California and Western Nevada (Figure 1). Beginning in the Sierra Nevadas in California, the East and West Walker Rivers converge approximately 7 miles north of the town of Yerington, Nevada. Walker Lake is the terminus of the Walker River and the lowest point in the basin. The majority of streamflow is from snowmelt, with peak flow being in late May to early June. The Walker River is the main source of inflow for Walker Lake, but there is also a small amount of inflow from nearby small streams and sub-surface inflow of groundwater (Lopes and Allander, 2009).

The first significant diversions from the Walker River began in the mid-1800's. By the beginning of the 1900's, disputes began over water rights. Several small lakes and reservoirs, including Upper and Lower Twin Lakes, East Lake, West Lake, Green Lake, Poor Lake, and Black Lake were constructed, and the water made use of in the Upper Walker River Basin prior to 1914.

As a result of litigation initiated in 1902, Decree 731 was issued in 1919, by the U.S District Court for the District of Nevada, as the first regulatory control on the system as a whole. However, Decree 731 did not include rights for the Walker River Indian Reservation of the Walker River Paiute Tribe (Walker River Tribe) and other small irrigators in the basin which led to a new Federal court action in 1924 (Water Education Foundation, 2006). The demand for irrigation water was expanding and, in 1919, the Walker River Irrigation District ("District") was formed for the purpose of constructing Bridgeport and Topaz Reservoirs. In the 1920s, the District constructed those reservoirs to extend the growing season and supplement the available natural flow during the irrigation/growing season (Collopy and Thomas, 2010, and Horton, 1996). Decree C-125 (herein after referred to as the Walker River Decree) was issued by the U.S. District Court for the District of Nevada (Court) on April 14, 1936 (amended April 24, 1940) as the culmination of the suit *United States of America v. Walker River Irrigation District, et al*. For each water right owner, the Walker River Decree sets forth the source, priority date, the diversion rate at the point of diversion, the number of acres irrigated, and a general description of the place of use of the appropriation.



Map showing location of main hydrologic features in the Walker River Basin, California and Nevada

Figure 1. Walker River Basin (Source: USGS Website)

Pursuant to the Walker River Decree the Court retains jurisdiction for regulatory purposes and for the purpose of appointing a Watermaster to apportion and distribute "the waters of the Walker River, its forks and tributaries in the State of Nevada and in the State of California, including water for storage and stored water, in accordance with the provisions of [the] decree." On May 12, 1937, the Court entered an order appointing five persons to perform that function. Two of the persons were from Yerington, one was from Smith, one was from Antelope Valley, and one from Bridgeport. On June 27, 1940, the Court entered an order adding a representative of the Walker River Tribe to the "Board of Water Commissioners." The orders establishing the Board of Water Commissioners gave that Board the authority to appoint an assistant, Chief Deputy Water Commissioner, who has the day-to-day responsibility of apportioning and distributing the waters of the Walker River, its forks and tributaries in the State of Nevada and in the State of California, including water for storage and stored water, in accordance with the provisions of the Walker River Decree. The Board of Water Commissioners, with approval of the Court, may make such rules as may be necessary and proper for the enforcement of the Walker River Decree and for carrying out its purposes. The Court approved such rules on September 3, 1953 (The 1953 Rules and Regulations). The 1953 Rules and Regulations state that these duties are to be assigned to the Chief Deputy Water Commissioner. For the purpose of this report, the term "Watermaster" is used in most cases when referring to the distribution of the available water supply. Reference to the Chief Deputy Water Commissioner will be made in specific instances. For the purpose of this report, these two titles are one in the same.

The U.S. District Court for the District of Nevada, through the Board of Water Commissioners, has administered the Walker River in Nevada and California since entry of the Walker River Decree. The current operation of the Walker River water system required by the Walker River Decree is implemented through the 1953 Rules and Regulations.

IV. WATER RIGHTS

1. General Description

Within the Walker River Basin, many entities are involved in governing the control and use of water. The Board of Water Commissioners, through the Chief Deputy Water Commissioner, has the duty to apportion and distribute the waters of the Walker River subject to and in accordance with the Walker River Decree. Both the California State Water Resources Control Board (SWRCB) and the NSE have authority to issue new water rights within California and Nevada, respectively. Numerous local agencies, including the District and ditch companies, provide the infrastructure for management of the physical delivery of the water. Water rights within the Walker River Basin can generally be described or categorized as decreed natural flow, storage, certificated surface water, and certificated groundwater.

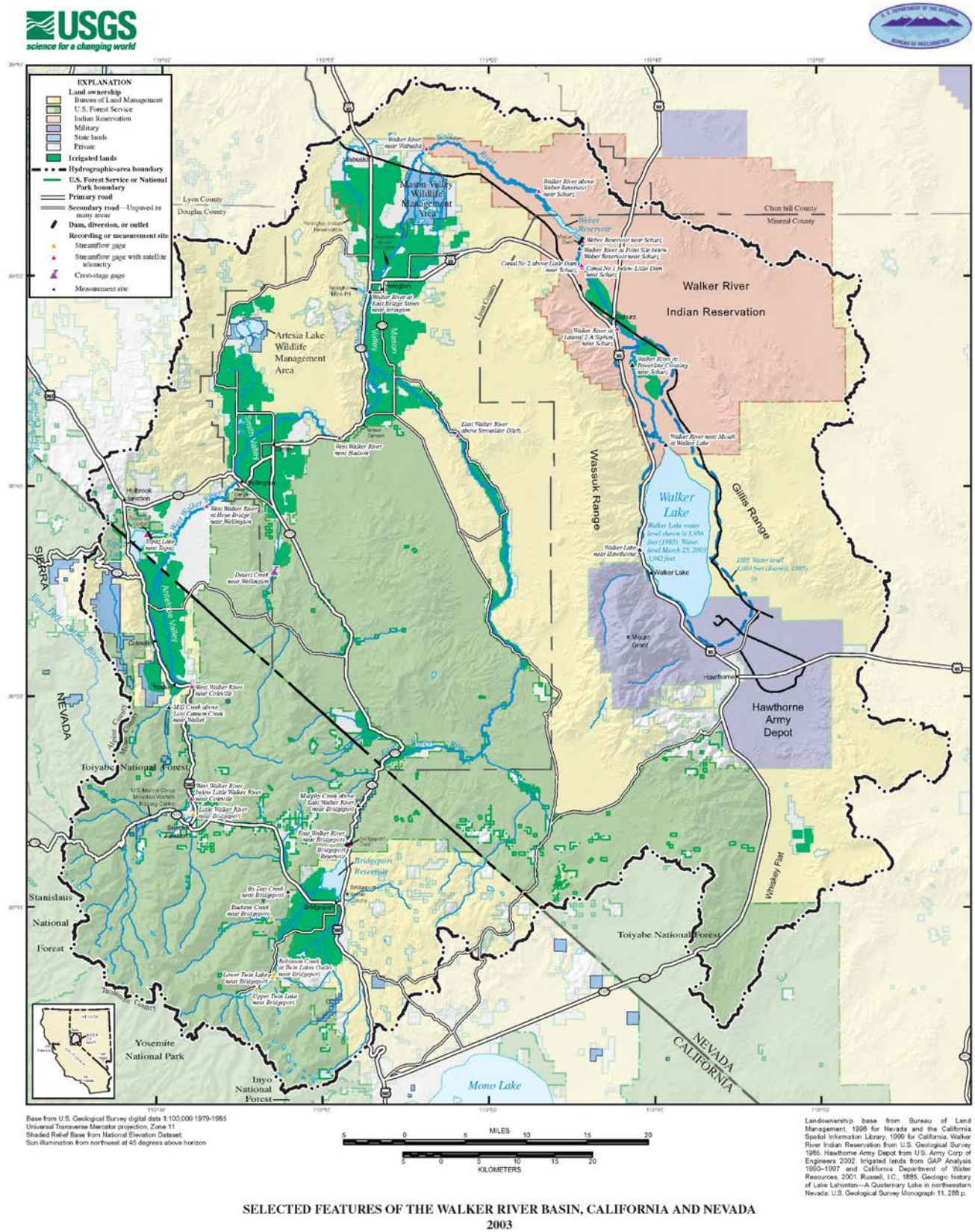
Decreed Natural Flow Rights

The Walker River Decree adjudicates the diversion of the Walker River and its tributaries for direct land application and diversion to storage facilities for subsequent use. The decreed rights were appropriated based upon and are entitled to the stream flow as it was when the appropriations were made. For the purpose of this report, we have referred to decreed natural flow rights in order to distinguish between other water rights such as storage, certificated surface water, and certificated groundwater. The reference to "natural flow" is not meant to be limited to initial runoff. It includes the tailwater from an upstream junior or senior water right holder which is relied upon to satisfy downstream junior or senior water right holders. In this manner the use of the available supply is optimized. The following are highlights of the Walker River Decree relative to the natural flow for direct land application:

- The United States, for the benefit of the Walker River Indian Reservation, has the earliest priority (most senior) right of 1859 for 26.25 cfs for use on 2,100 acres. Figure 2 shows selected features of the Walker River Basin and the general location of the Walker River Indian Reservation. The irrigation season for this water right is 180 days within the period March 1 to October 31. The decreed diversion rate is 1.25 cfs per 100 acres. Pursuant to the 1953 Rules and Regulations the flow available for this right is currently measured and monitored at the United States Geological Survey (USGS) Walker River gage near Wabuska (No. 10301500).

- The Walker River Decree defines the source of water, the priority date, the rate of diversion, the acreage, and a general description of the lands to which water is to be applied. The majority of decreed diversion rates are either 1.6 cfs for 100 acres of irrigated land or 1.2 cfs for 100 acres. The Walker River Decree does not set an acre-foot per irrigated acre water duty.

- The irrigation season for areas above Bridgeport Reservoir on the East Walker River and the Coleville gaging station on the West Walker River is from March 1 to September 15. The irrigation season for the remaining irrigated areas is March 1 to October 31.



SELECTED FEATURES OF THE WALKER RIVER BASIN, CALIFORNIA AND NEVADA
2003

Figure 2. Map Showing Selected Features of the Walker Basin (Source: USGS Website)

Paragraph XV of the Decree provides for a Watermaster to apportion and distribute the waters of the Walker River, its forks, and tributaries in the State of Nevada and in the State of California in accordance with provisions of the Walker River Decree. Rules and Regulations adopted by the Watermaster on August 25, 1953, and approved by the Court on September 3, 1953, set forth a formula for determining the total amount of water available to serve vested rights under the Walker River Decree. Every day between March 1 and October 31, the Watermaster determines the year of priority to be served. A full priority declaration means demand under all water rights, up to and including a priority year of 1921, may be served. The 1953 Rules and Regulations state:

> "In determining the year of priority to be served to the individual decreed users under the Walker River Stream System, the Chief Deputy Water Commissioner shall apply the following formula.
>
> He shall determine the total amount of water entering the Walker River Stream System through natural channels. He shall add to this accumulated total of natural flow water the amount of return flow he computes to be returning to the stream system through seepage, drain canals or any other sources. The sum total of water from the two sources shall be considered to be the total amount of water available to serve the vested rights under the decree and the year of priority to be served shall be determined daily by the Chief Deputy Water Commissioner from this information."

During the irrigation season, water users may call for all or part of their water at any time the right is in priority; therefore, the priority set is also dependent on the demand on the system at any point in time. When few irrigators need their water, low flows may serve all of the demand and result in a full priority declaration. While at other times in the irrigation season when more irrigators are calling for their water, the same flow will only serve more senior priority water rights. Deliveries are measured at the point of diversion from the source of water identified in the Walker River Decree. The Watermaster has the authority to refuse delivery of water if he determines water is not being put to beneficial use.

As indicated above, the decreed natural flow rights have a rate of diversion and a season. This rate of diversion over the entire season results in a duty of 5.83 acre-feet per acre for the 1.2 cfs per 100 acres decreed rights over the March 1 through October 31 season, and 6.31 acre-feet per acre for the 1.6 cfs per 100 acres decreed rights over the March 1 through September 15 season. These values can also be referred to as volumes when referring to a specific decreed natural flow right. It is not appropriate to assume these volumes represent a quantification of the decreed rights because of the Watermaster's authority to evaluate beneficial use and water availability. However, for purposes of this report, it is necessary to refer to this quantity and it will be referred to as the Face Value of the decreed natural flow right(s).

Storage Water Rights

Water rights for the storage of water in numerous reservoirs are adjudicated in the Walker River Decree. There are several small reservoirs on the tributaries upstream from Bridgeport and Topaz Reservoirs, used to serve Bridgeport and Antelope Valleys, which are identified in the Walker River Decree. For the purpose of this report, no further research or investigation was undertaken relative to these storage rights. However, it should be noted that the Walker River Decree includes no express recognition of a right of the United States to store water in Weber Reservoir for the Walker River Tribe even though construction was completed in 1934. The two major storage facilities and rights documented in the Walker River Decree are for Bridgeport and Topaz Reservoirs which are owned and operated by the District. These reservoirs are licensed by California SWRCB License 9407, for Bridgeport Reservoir, and Licenses 6000 and 3987, for Topaz Reservoir. The District also holds Certificate No. 4972 with the NSE for local inflow to Topaz Reservoir identified in the District water right section of this report. The District uses the available stored water to supplement decreed natural flow rights, and as a primary source of supply for "new lands" (lands with no other water right). The Walker River Decree defines storage quantities and priorities, but the distribution of the available stored water from Bridgeport and Topaz Reservoirs is determined by the District. This is further described in the Summary of Water Rights within the District section of this report.

Certificated Surface Water Rights

From as early as 1866 through 1913, uncertainty and conflict existed as to the regulatory framework and authority for water use and legal appropriation. The Office of the NSE was established in 1903; and in 1905, laws set up a system for applications for new appropriative water rights to be submitted to the NSE. Subsequent laws "gave the [NSE] the authority to provide for the appropriation, distribution, and use of water (1907), and established that all water in Nevada was owned by the public (1913)" (Water Education Foundation, 2006). Due to these uncertain times, there exist certificated water rights with a priority date before 1921 (the most junior Walker River Decree right); some of which are, and some of which are not, addressed in the Walker River Decree. There are also numerous certificated water rights issued by the NSE with a post-1921 priority.

Certificated Groundwater Rights

There are generally two types of groundwater rights, primary and supplemental, in the Walker River Basin based on terms within permits and certificates issued by the NSE. Primary groundwater rights are for the total duty of 4.0 acre-feet per acre. These water rights are held for lands with no other water supply or water right. Supplemental groundwater rights are for the amount of water not available from other sources with a duty not to exceed 4.0 acre-feet per acre from all sources.

2. Summary of Water Rights Within the District

The District, formed in 1919 by landowners in the Smith and Mason Valleys, encompasses approximately 132,000 acres in the Walker River Basin as shown on Figure 3. The water rights of the District include those defined by the Walker River Decree and administered by the Watermaster, Licensed water rights administered by the California SWRCB, and Certificated water rights administered by the NSE. The District manages these rights and allocates water to lands consistent with its Rules and Regulations. The following summarizes water rights held directly by the District.

Bridgeport and Topaz Reservoirs

The Walker River Decree states that the District is "the owner of the flow and use of the flood water of East Walker River…for storage in Bridgeport Reservoir" and "the owner of the flow and use of the flood water of West Walker River…for storage in Topaz Lake Reservoir." For Bridgeport Reservoir, the Walker River Decree sets a maximum diversion to storage of 42,000 acre-feet from November 1 to March 1, without regard to priority. It also states that when there is "water in excess of the total amount adjudicated," the District may store an additional 15,000 acre-feet at any time, providing there is no injury to other users. Similarly for Topaz Reservoir, the Walker River Decree sets a maximum diversion to storage of water from West Walker River of 50,000 acre-feet from November 1 to March 1, without regard to priority. It also states that when there is "water in excess of the total amount adjudicated," the District may store an additional 35,000 acre-feet at any time, providing there is no injury to other users. The District may also divert 200 acre-feet per year from an unnamed stream flowing into Topaz Reservoir. The Walker River Decree includes no limit on the amount of water which can be withdrawn from storage in any one year.

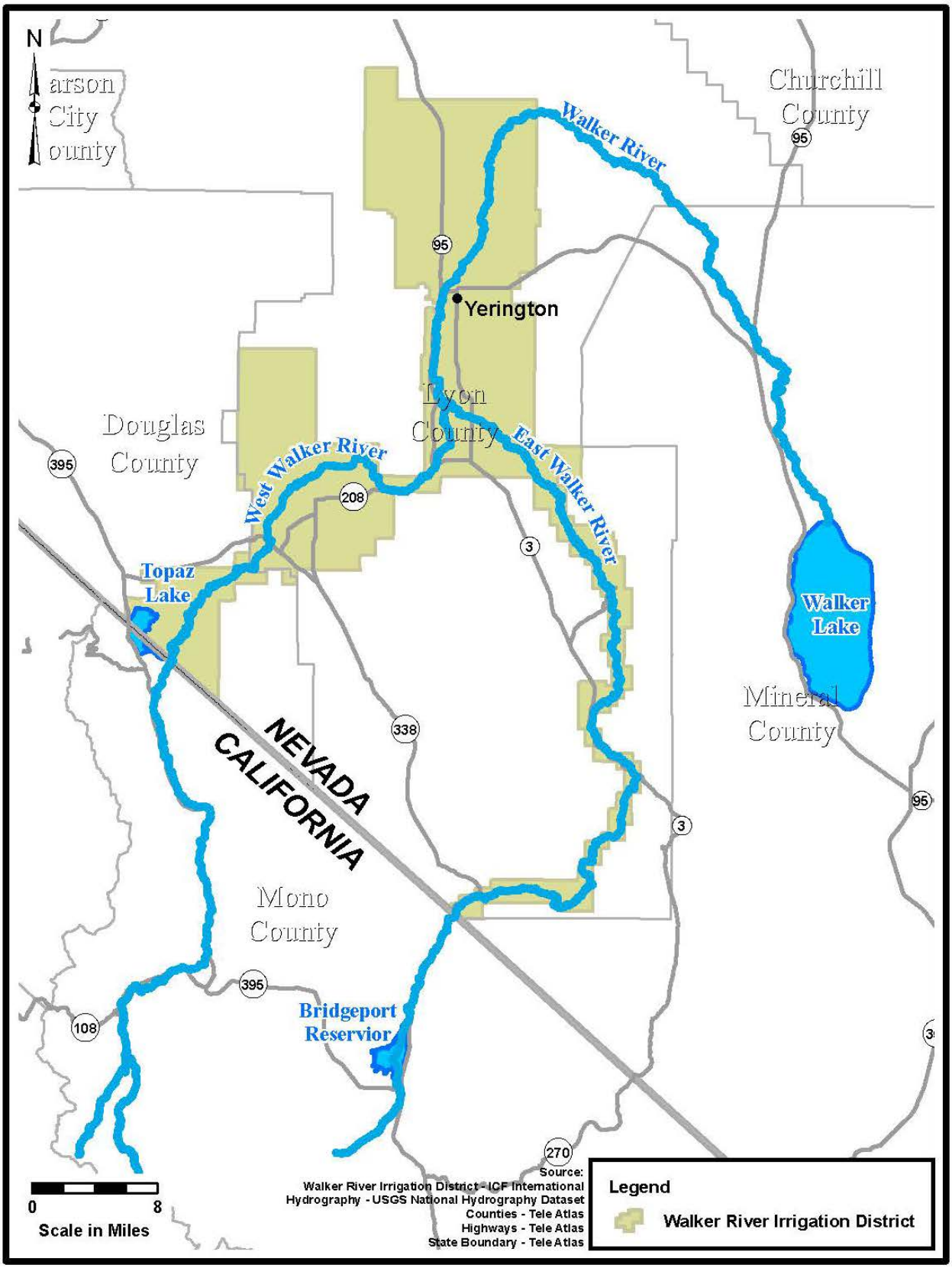


Figure 3. Walker River Irrigation District

Bridgeport and Topaz Reservoirs are also licensed by the State of California. The District holds License 9407 (Application 1389) for storage in Bridgeport Reservoir, having a priority date of August 8, 1919. The licensed season for collection to storage is about September 1 to about July 20 for up to 39,700 acre-feet annually, with maximum storage of 42,500 acre-feet. License 9407 for Bridgeport Reservoir notes that storage, in combination with the Licensee's water rights confirmed by the Walker River Decree, is not to exceed 57,000 acre-feet annually. The District holds Licenses 6000 and 3987 (Applications 2221 and 2615, respectively) for storage in Topaz Reservoir, having priority dates of February 21, 1921 and October 28, 1921, respectively. The season for collection to storage under License 6000 is about October 1 to about July 15 for up to 57,580 acre-feet annually. License 3987 is for collection to storage of up to 200 acre-feet (year round) from an unnamed steam tributary to Topaz Reservoir. The District also holds Certificate 4972 for storage in Topaz Reservoir, issued by the NSE which is further described below. The place of use under the water rights for Bridgeport and Topaz Reservoirs is lands within the District boundaries.

Certificated Water Rights

The District holds Certificated Water Rights (Certificate 8859 and 8860), administered by the NSE, to surface water in the East, West, and Main Walker River for use on lands within the District. Ruling 1749A by the NSE states the Certificated rights are "for those supplies over and above the decree…. subject, to all existing rights on the stream system." The diversions and use of these rights are subject to the terms of the NSE stating that the total duty from all sources shall not exceed 4.0 acre-feet per acre. The District holds Certificate 4972 for storage of the unnamed stream on which Topaz Reservoir is located. Table 1 summarizes the Nevada Certificated water rights.

Application	Certificate	Priority	Source	Season	Rate (cfs)	Quantity (AF)
5528	8859	June 6, 1919	West Walker River	May 1 – July 31	491.2	86,612
6538	4972	November 3, 1961	Unnamed Stream	April 1 – October 31	-	1,500
25017	8860	April 11, 1969	East and Main Walker Rivers	May 1 – July 31	349.1	63,688

Table 1. District Certificated Water Rights

The District also holds Certificate 8861 for supplemental groundwater use within the Mason Valley Basin. A condition of Certificate 8861 allows for exchanges such that the benefits of this water can be used on any water right lands with the District.

District Allocated Benefits of Storage

As noted, the District holds the water rights to the stored water in Bridgeport and Topaz Reservoirs. A historical methodology using an average number of days that natural flow rights were not available to a given priority was used to establish a maximum quantity of stored water available to landowners by priority date. A landowner within the District that holds a more junior decreed natural flow right has the opportunity to receive more stored water than a landowner that holds a senior decreed natural flow right. By April 1 of each year, the amount of stored water available to each landowner in the District is determined. The landowner can then call for this stored water at any time during the period April 1 and October 31 to supplement the decreed natural flow rights. Stored water is also assigned to "new lands" which are irrigated areas with no natural flow rights; these new lands have the opportunity to receive the most stored water on a per acre basis, up to approximately 2.0 acre-feet per acre.

Water Rights Held by Individuals Within the District

The "package" of water rights held by individual land owners within the District varies. Some lands have appurtenant decreed natural flow rights under the Walker River Decree only. Other lands have both appurtenant decreed natural flow rights and storage rights. Some lands, "new land," have only storage rights. In addition, some lands have appurtenant supplemental underground water rights, and some have only primary underground water rights.

3. West Hyland Ditch

The West Hyland Ditch is located in the northern end of Mason Valley (see Figure 4). Diversions to the West Hyland Ditch are made at the Yerington Weir, located approximately 2.5 miles downstream from where Highway 95 crosses the Walker River. The Yerington Weir also is used for diversions to other ditches. Based on my review of various map sources including USGS quad sheets, USGS National Hydrography Dataset, Google Earth, and based on discussions with District staff and the Watermaster, it is my conclusion that the return flow from diversions made at the West Hyland Ditch return to the Wabuska Drain and thence to the Walker River upstream of the Wabuska gage.

The Walker River Decree adjudicates 24 claims[1] on the West Hyland Ditch, many of which have multiple priority dates. Based on my review of the Walker River Decree and a database provided by Mr. Tim Minor of DRI, hereinafter referred to as the "DRI database,"

[1] Claim numbers are not identified in the final Walker River Decree. Claim numbers were assigned in order by owner beginning with Aeschlimann in a copy of the Walker River Decree relied on by many, including NFWF in Application 80700.

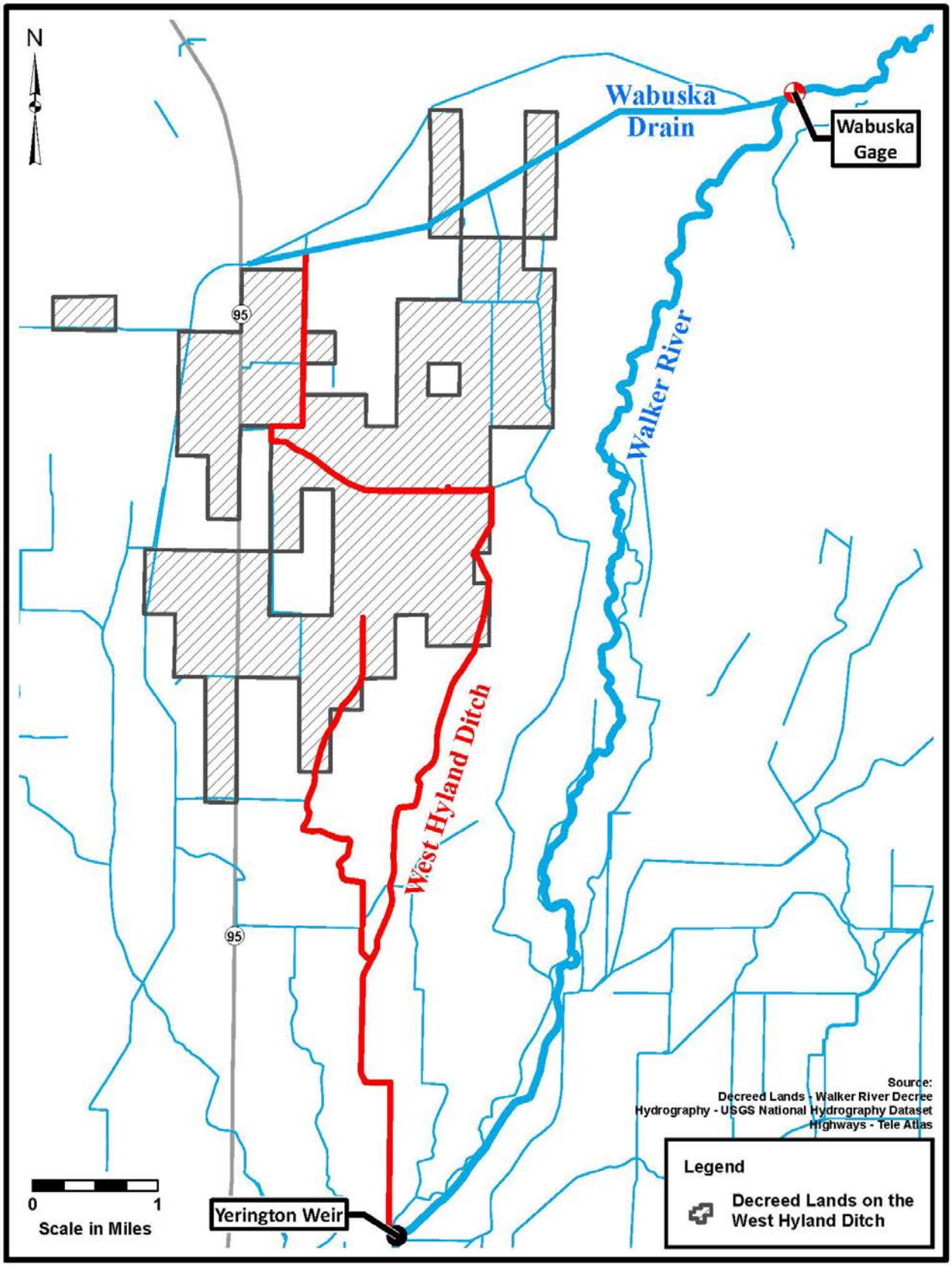


Figure 4. Map of West Hyland Ditch

priority dates served by West Hyland Ditch range from 1873 to 1906. The cumulative rate of diversion of all claims on the West Hyland Ditch is 36.01 cfs. Table 2 provides a summary of West Hyland Ditch decreed diversion rate and acreage irrigated by priority date.

Priority Date	Decreed Diversions (cfs)	Cumulative Diversions (cfs)	Decreed Lands (acres)	Cumulative Acreage (acres)
1873	3.0	3.0	250	250.0
1874	15.985	18.985	1333.2	1583.2
1877	0.86	19.845	72	1655.2
1880	7.765	27.61	647.5	2302.7
1881	0.48	28.09	40	2342.7
1887	0.78	28.87	65	2407.7
1888	0.96	29.83	80	2487.7
1891	1.87	31.7	155.8	2643.6
1894	0.18	31.88	15	2658.6
1896	1.1	32.98	92	2750.6
1899	0.14	33.12	12	2762.6
1900	1.68	34.8	140	2902.6
1901	0.18	34.98	15	2917.6
1904	0.31	35.29	26	2943.6
1905	0.48	35.77	40	2983.6
1906	0.24	36.01	20	3003.6

Table 2. West Hyland Ditch Decreed Diversions and Land by Priority Date

4. Summary of NFWF Water Rights Associated with Application 80700

NFWF filed its Amended Application for Permission to Change on May 10, 2011, and received Application No. 80700 (Application 80700). Application 80700 seeks to change the place and manner of use for a portion of certain decreed natural flow rights (Figure 5). The land to which these rights are appurtenant is served by diversions from the Walker River at the Yerington Weir into the West Hyland Ditch in Mason Valley. These lands within Mason Valley have a decreed diversion rate from the Walker River of 1.2 cfs per 100 acres. NFWF did not purchase the land appurtenant to these claims, only the appurtenant water rights.

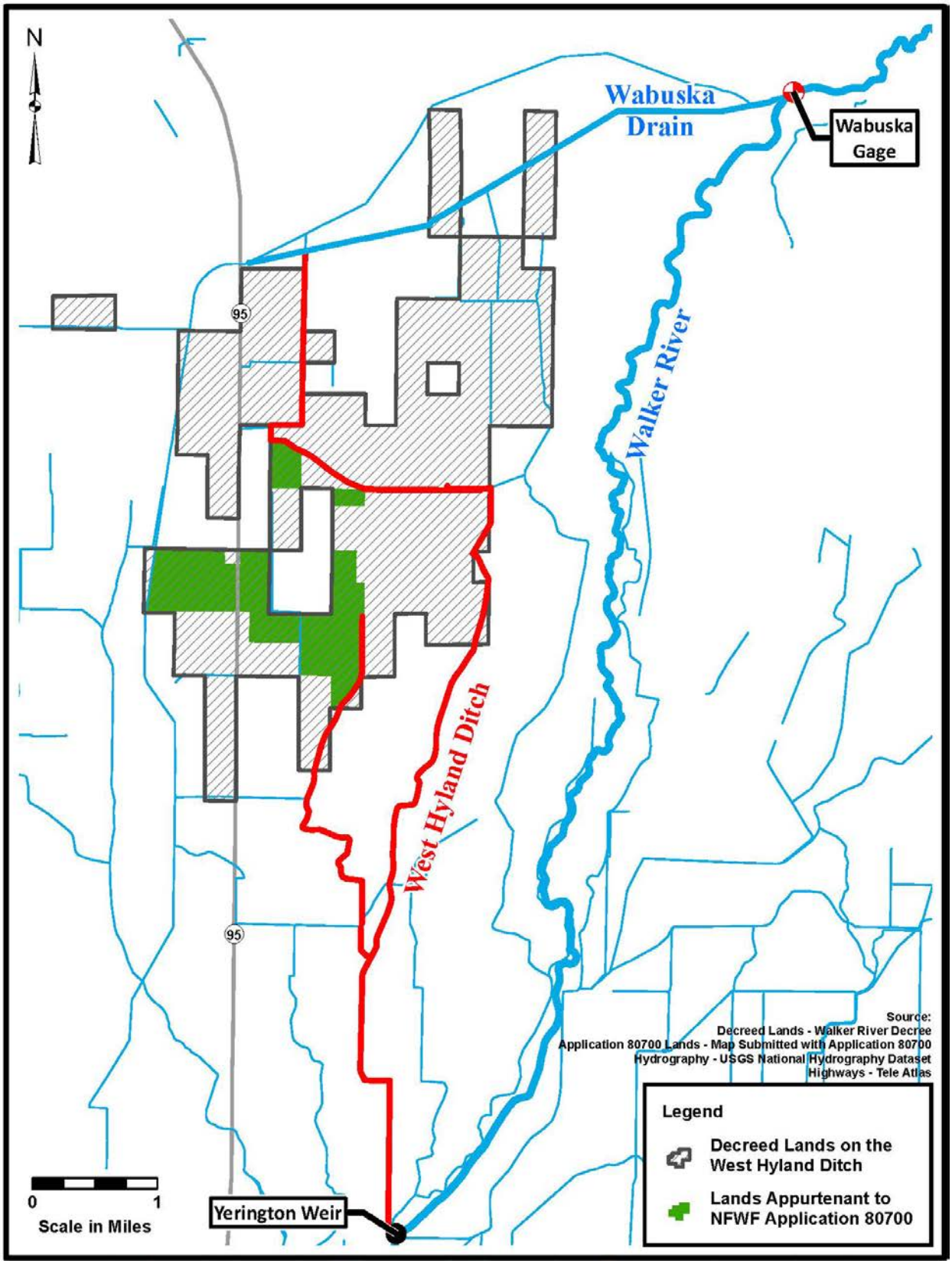


Figure 5. Lands Appurtenant to Application 80700

Table 3 summarizes the original claims, and the portions of each claim, to be changed pursuant to Application 80700. This data was obtained from NFWF Application 80700 and verified with the Walker River Decree and the DRI database.

Claim No.[1]	Date	Original Claim in Decree		Portion Purchased by NFWF	
		cfs	acres	cfs	Associated Acres
23[2]	1887	0.78	65	0.39	32.5
	1894	0.18	15	0.09	7.5
	1900	0.24	20	0.12	10
	1906	0.24	20	0.12	10
23A[3]	1880	1.08	90	1.035	86.28
	1888	0.96	80	0.96	80
	1900	1.44	120	1.38	115.04
35[4]	1881	0.48	40	0.24	20
44[5]	1880	0.6	50	0.6	50
	1901	0.18	15	0.18	15
67[6]	1877	0.86	72	0.86	72
	1896	1.1	92	1.1	92
	1904	0.05	4	0.05	4
89[7]	1874	2.69	224	0.4	33.36
	1880	0.77	64	0.11	9.55
	1891	0.72	60	0.11	8.93
Total		12.37	1,031	7.745	646.16

Table 3. Claims Pursuant to Application 80700

1. Claim numbers are not included in the original decree; the claim numbers were assigned in order, beginning with Aeschlimann, Ernest as No. 1. NFWF Application 80700 refers to decreed water rights by these claim numbers.
2. The owner of Claim No. 23 as entered into the Walker River Decree was "Conway, Estate of P.J., (Rallen Ranch)."
3. The owner of Claim No. 23A has entered into the Walker River Decree was "Conway, Estate of P.J., (Warren Ranch)."
4. The owner of Claim No. 35 as entered into the Walker River Decree was "Dickson, John, Successor to Mary E. Young."
5. The owner of Claim No. 44 as entered into the Walker River Decree was "Farrell, Mary Parker, Successor to John B. Gallagher, (per J.O. Parker)."
6. The owner of Claim No. 67 as entered into the Walker River Decree was "Guild, Penrose and West, Successors to John B. Gallagher (per Lena Roy)."
7. The owner of Claim No. 89 as entered into the Walker River Decree was "Lyon County Bank, (N.P. Neilson), Successor to Sarah Jane Rallens, et al."

The water rights included in Application 80700 range in priority from 1874 to 1906. Figure 6, below, shows the cumulative diversion rate of the portions of the claims sought to be changed by Application 80700.

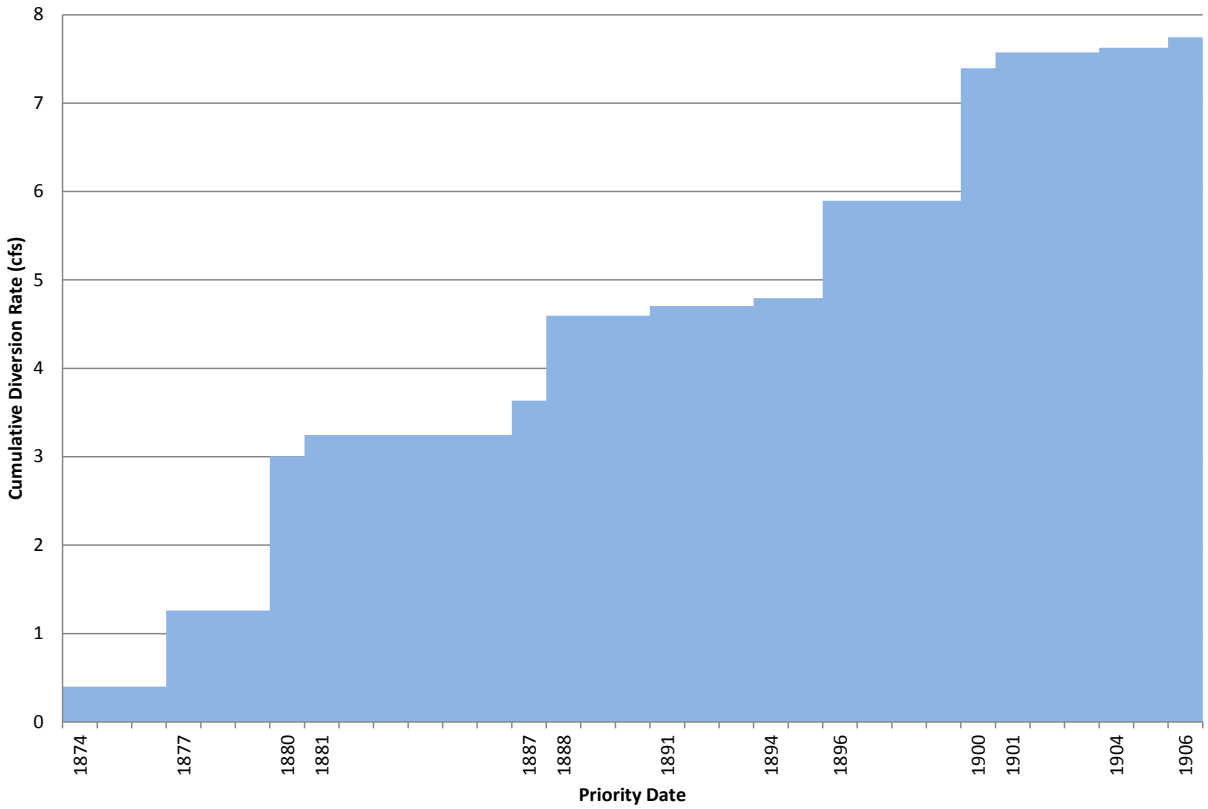


Figure 6. Cumulative Diversion Rate by Priority Year Pursuant to Application 80700

Stored water from the District and supplemental groundwater rights are also appurtenant to the lands covered by Application 80700. As described above, use of stored water is considered "supplemental" to the decreed natural flow rights. NFWF purchased the right to call for the stored water appurtenant to the lands to which the decreed natural flow rights under Application 80700 are also appurtenant; NFWF has identified this as a maximum allocation of 402 acre-feet in a given year. However, the underlying water rights for stored water are held by the District and the District's relevant Regulation does not allow for the permanent change of such rights to instream uses. The supplemental groundwater rights purchased by NFWF are subject to the terms of the NSE stating that the total duty from all sources shall not exceed 4.0 acre-feet per acre. Application 80700 states that NFWF "will withdraw 646.16 acres of associated supplemental groundwater rights in the existing place of use (Item 8) as a condition of exercise following approval by the Nevada State Engineer and the U.S. District Court."

5. Other Water Rights

Downstream Junior Rights

There are two existing recognized water rights from the Walker River which are downstream of the West Hyland Ditch diversion and which are junior to all of the water rights proposed to be changed by Application 80700. First, there is the water right recognized by the Walker River Decree (entry for George Parker) for what is now the Stanley Ranch as modified by the Order of the Court dated March 14, 2007. That water right is now owned by John David Stanley and Marlyse Reed Stanley, with a March 13, 1916 priority date, and identifies a diversion rate of 0.8226 cfs to irrigate 82.26 acres. The point of diversion of the Stanley Ranch water right is located on the Walker River approximately 2,000 feet upstream of the Wabuska gage. The existing point of diversion of the water rights proposed to be changed by Application 80700 is located upstream of the Wabuska gage, and upstream of the Stanley Ranch water right.

Second, there is the water right for Walker Lake held by the Nevada Department of Wildlife and recognized by Certificate 10860 for 795.2 cfs up to 575,870 acre-feet per year, with a priority date of September 17, 1970.

There are also some claimed rights to water from the Walker River downstream of the West Hyland Ditch, and which, if ultimately recognized to exist, are junior to the rights proposed to be changed by Application 80700. In litigation pending in the U.S. District Court for the District of Nevada, the United States and the Walker River Tribe seek recognition of a right from the Walker River to store water in Weber Reservoir for use on lands of the Walker River Indian Reservation, and of a Federal reserved water right from the Walker River for lands added to the Reservation in 1936. These claimed rights are alleged to be in addition to the 26.25 cfs water right awarded to the United States for the benefit of the Walker River Tribe by the Walker River Decree with a priority of 1859. It should be noted that claims are made for groundwater for the entire Walker River Indian Reservation.

6. Historic Natural Flow Available for Irrigation

This section of the report presents information on the hydrologic variability of the Walker River, how that variability affects water available to satisfy decreed natural flow rights, and specifically rights associated with Application 80700. Also included is a discussion of how seasonal patterns of water availability and the consumptive use of applied water combine to limit water that can be made available to Walker Lake through the changes to water rights as proposed by Application 80700 without conflict to existing rights.

Two USGS gages on the Walker River, East Walker River near Bridgeport (No. 10293000) and West Walker River near Coleville (No. 10296000), can be used to illustrate the variability and to estimate the volume of water available in the Walker River during the March 1 through October 31 irrigation season (irrigation season). These gages do not represent the natural flow of the Walker River as determined by the Watermaster for determining the available flow to distribute pursuant to the 1953 Rules and Regulations. The East Walker River near Bridgeport gage (No. 10293000) is below Bridgeport Reservoir and gage records include both natural flow and release of stored water. The West Walker River near Coleville gage (No. 10296000) does not include inflow from tributaries in Antelope Valley. Figure 7 shows the location of these gages.

Flow recorded at these two gages was added to estimate available Walker River flow during the irrigation season each year, for the period 1958 through 2012. The median irrigation season flow volume at these two gages was 260,000 acre-feet. However, the irrigation season flow volume is highly variable ranging from 68,000 acre-feet in 1977 to 625,000 acre-feet in 1983. Figure 8 illustrates the variability in the irrigation season flow volume for the period 1958 through 2012. The USGS recorded flows illustrated in Figure 8 were obtained as daily data from the USGS National Water Information System website.

Based on the Walker River Decree and the DRI database the Face Value (flow rate over the irrigation season) of the decreed natural flow rights downstream of these gages is approximately 470,000 acre-feet, which exceeds the available natural flow in 87% of the years shown on Figure 8. This demonstrates the difference between the irrigation season flow volume and the Face Value of the decreed natural flow rights and the reliance on return flow in the development of the Walker River Decree. It demonstrates the need to rely on return flow in order to attempt to satisfy decreed natural flow water rights recognized in the Walker River Decree.

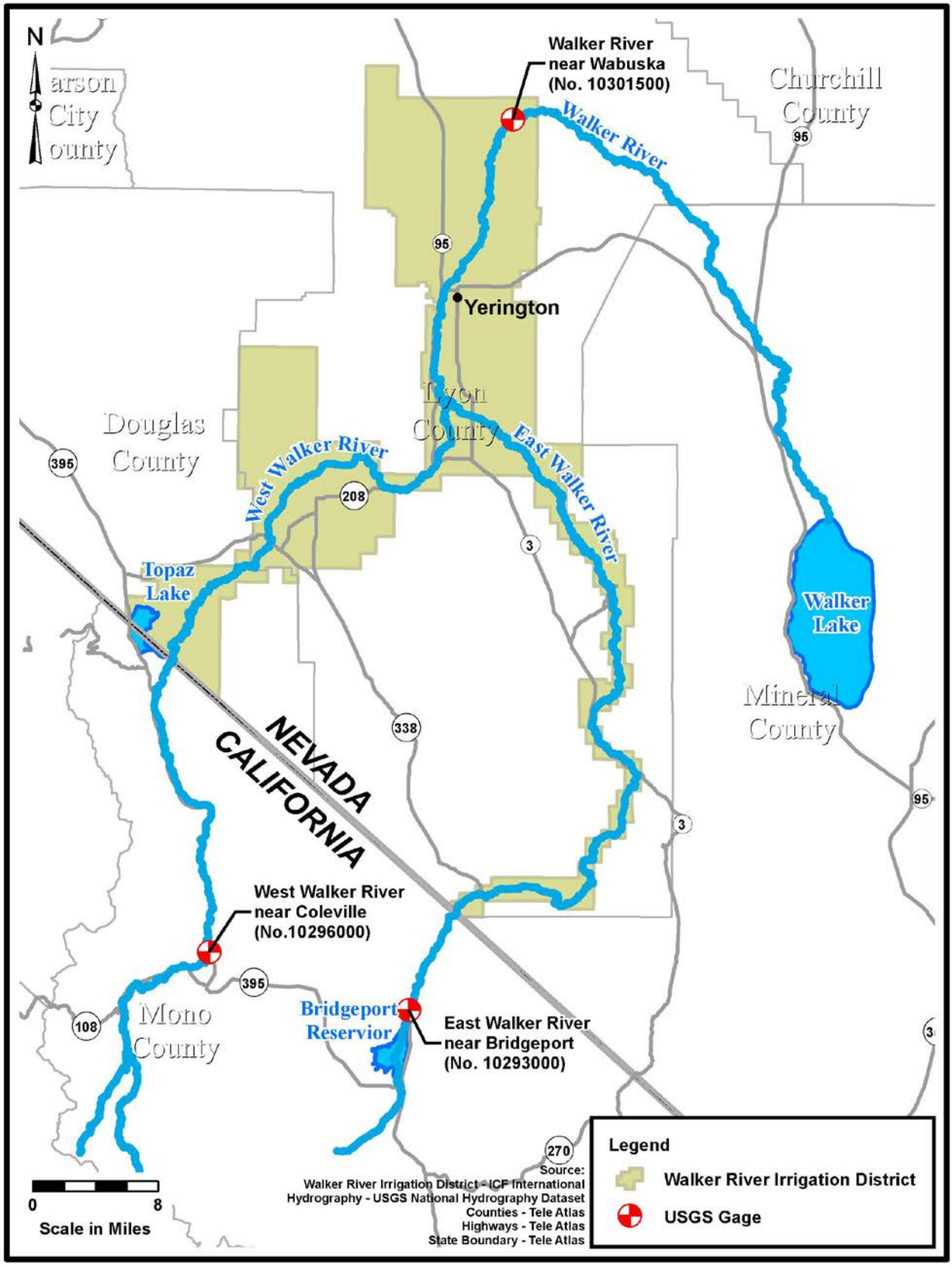


Figure 7. Location of Walker River USGS Gages 10293000 and 10296000

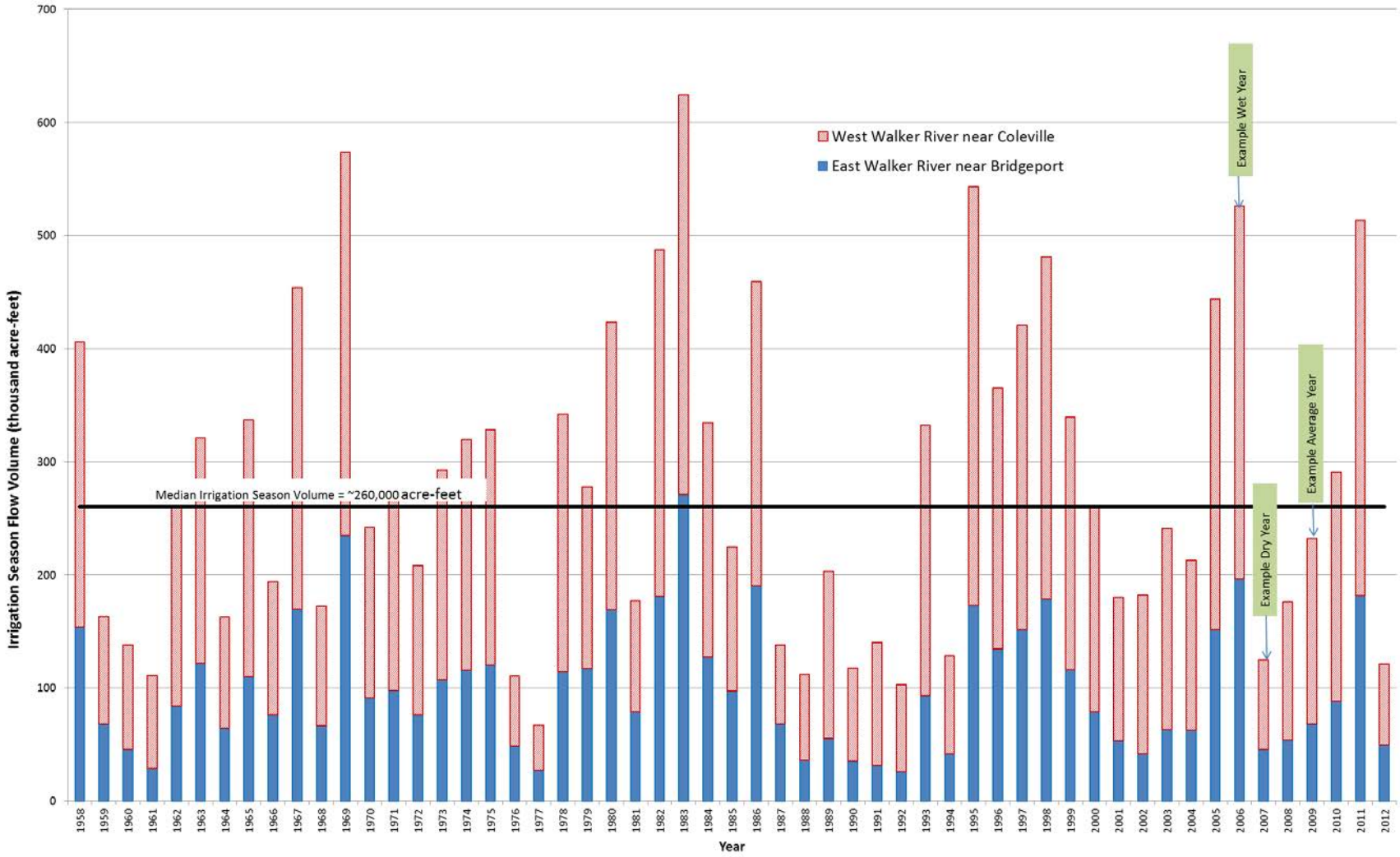


Figure 8. East and West Walker River Irrigation Season Flow Volume

Figure 9 provides the cumulative Face Value of decreed natural flow rights by priority date as determined from the DRI database. The cumulative total rate of diversion of all decreed natural flow rights in the Walker River Decree is 1,553 cfs.

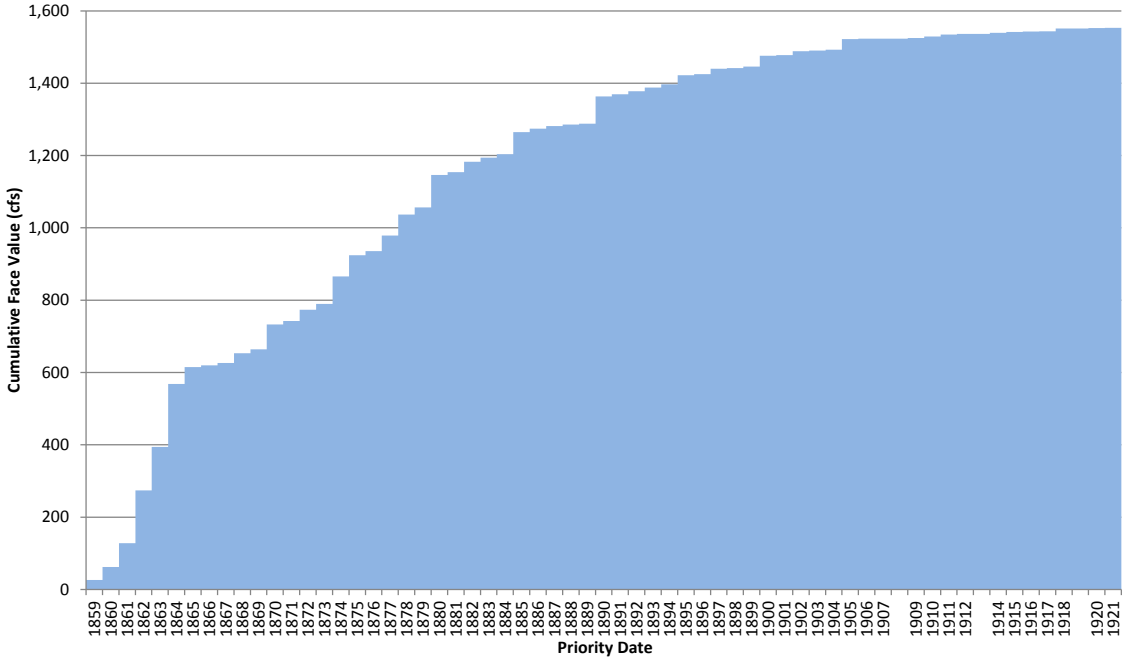


Figure 9. Cumulative Face Value of Decreed Natural Flow Rights by Priority

The Watermaster determines a year of priority that can be served each day according to the 1953 Rules and Regulations. This determination considers and is based on natural flow, return flow, and demand. If a particular decreed natural flow right has a priority equal to or earlier than the Watermaster's determination, water can be diverted under that right. Table 4 is a summary of priorities and flow rates for the rights associated with Application 80700. The priority in combination with the cumulative flow rate in Table 4 was used to determine the water available for diversion under rights associated with Application 80700. For example, if the Watermaster determines the priority to be 1881, a cumulative total of 3.245 cfs is available for diversion under the rights associated with Application 80700.

Priority	Flow Rate (cfs)	Cumulative Flow Rate (cfs)
1874	0.4	0.4
1877	0.86	1.26
1880	1.745	3.005
1881	0.24	3.245
1887	0.39	3.635
1888	0.96	4.595
1891	0.11	4.705
1894	0.09	4.795
1896	1.1	5.895
1900	1.5	7.395
1901	0.18	7.575
1904	0.05	7.625
1906	0.12	7.745

Table 4. Priority and Flow Rate for Rights Associated with Application 80700

Daily priority data provided by the District for the period 1978 through 2012 were reviewed to understand the water historically available for diversion under rights associated with Application 80700. These daily priorty data are a combination of the District's recording of priorities as set by the Watermaster and the Watermaster records. Appendix 1 contains the daily priority records. Figure 10 shows the percentage of the Face Value of all rights associated with Application 80700 available for diversion, based on the daily priority data.

Based on this daily priority data, the rights associated with Application 80700 would have been able to divert the entire Face Valve under all the different priorities throughout the irrigation season in only one year, 1983, out of the last 35 years. In 1992, rights associated with Application 80700 would have been able to divert the Face Value of all priorities on only 8 days during the entire 245-day irrigation season.

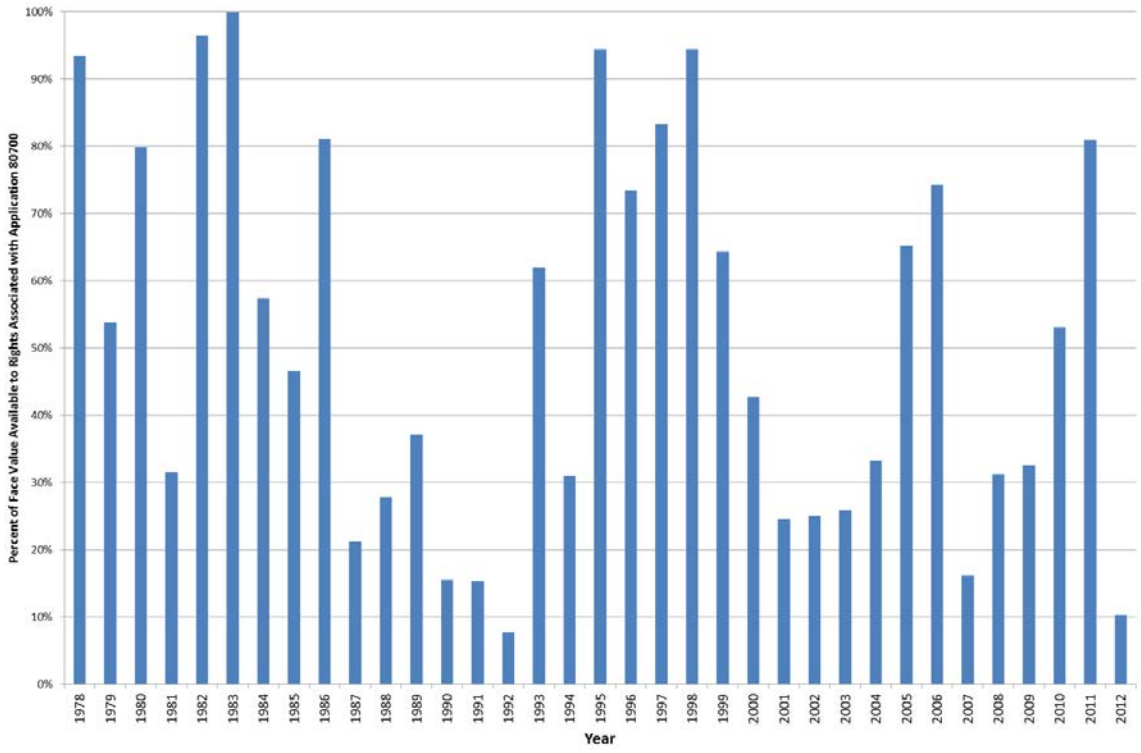


Figure 10. Percent of Face Value Available to Rights Associated with Application 80700

An alternative method, using the same daily priority data identified above, to summarize water availability to rights of a certain priority is to calculate the percent of years when water is available to those rights throughout the irrigation season. This analysis helps illustrate the seasonal interaction between the natural flow and demand for water. Figure 11 shows the percentage of years that water was historically available to satisfy decreed natural flow rights with priorities equal to the priorities for the rights associated with Application 80700.

As shown in Figure 11, natural flow is available for diversion in a higher percentage of years during the May through mid-June period. This period corresponds to the peak run-off, and when irrigation demand, estimated based on the pattern of consumptive use of applied water (CUAW), has not yet reached a peak. The percentage of years that natural flow is available declines as irrigation demand peaks in mid- to late-July while run-off also declines.

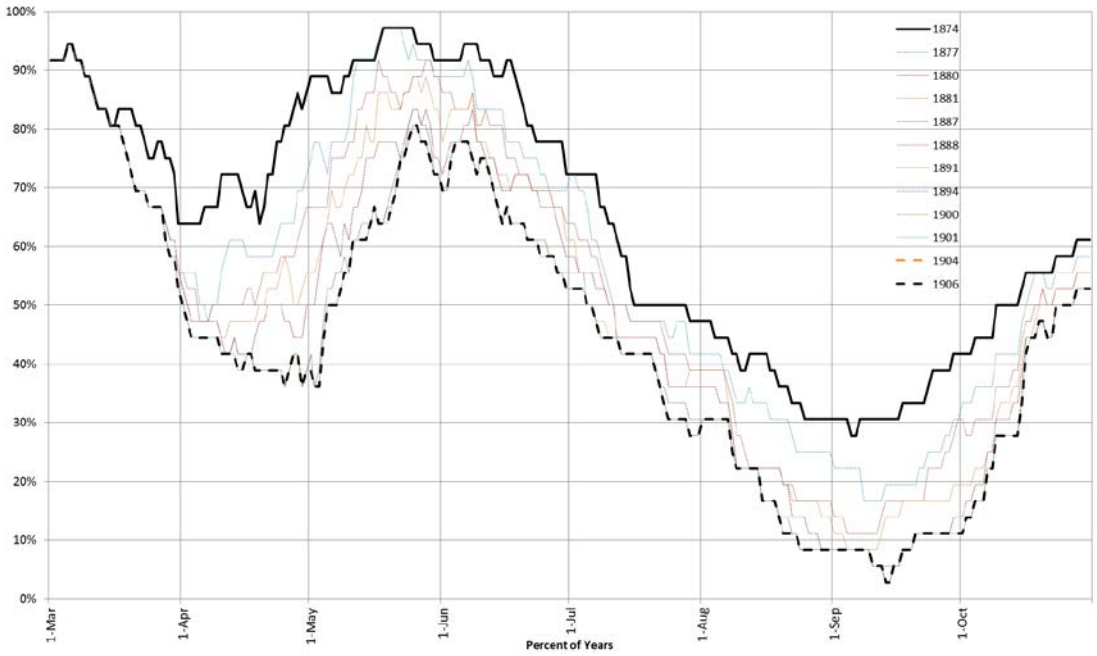


Figure 11. Percent of Years Water was Historically Available to Rights with Priorities Associated with Application 80700.

For the purpose of this report, three example years were selected to represent water available during average, dry, and wet years. Average, dry, and wet years were selected as 2009, 2007, and 2006, respectively. These three years are identified in Figure 8 to illustrate the irrigation season flow volume relative to other years.

During an average year, similar to 2009, water would be available to rights with priorities of those like Application 80700 during only a portion of the irrigation season. In 2009, water was available to all rights associated with Application 80700 from March 1 to March 6, May 11 to July 7, and October 23 to October 31. No water was available to any right associated with Application 80700 from March 7 to April 22, or July 15 to October 22. As shown on Figure 12, there are times during the irrigation season that water was available to only a portion of the rights proposed for change under Application 80700. The volume available for diversion in 2009 under the rights associated with Application 80700 was 1,225 acre-feet, or 33% of the total Face Value of 3,763 acre-feet (7.745 cfs x 1.983 acre-feet per cfs per day x 245 days). Figure 12 shows the 2009 water available under these rights as compared with the Face Value.

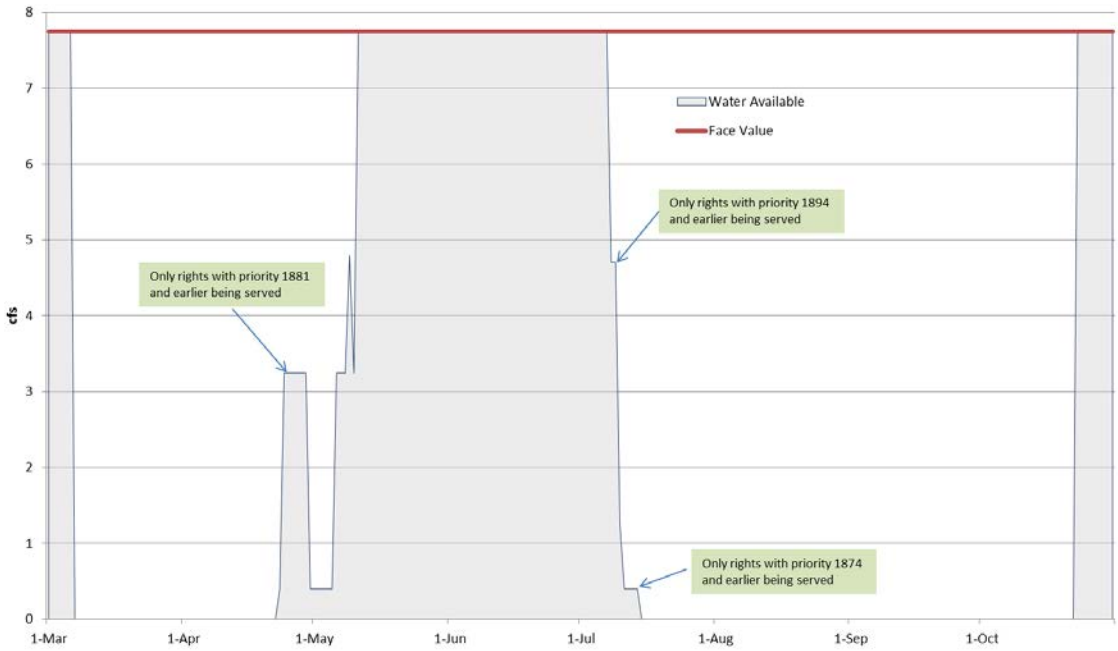


Figure 12. Water Available to Rights Associated with Application 80700 in 2009, an Average Year

To understand the significance of the seasonal pattern of available water, we must consider the water need of an irrigated crop. The CUAW for alfalfa is used to represent the water need. The average CUAW for alfalfa (3.0 acre-feet per acre) was taken from Mr. Lee Bergfeld's report titled, "Consumptive Use of Applied Water of Alfalfa in Mason Valley" (Bergfeld, 2013). Figure 13 overlays periods when water was available to rights associated with Application 80700 in 2009 with the average pattern of CUAW for alfalfa. In 2009, water was not available to these rights to meet the CUAW of alfalfa throughout the entire irrigation season.

Figure 13. Water Available to Rights Associated with Application 80700 in 2009 (Average Year) with Average CUAW of Alfalfa

In 2007, a representative dry year, the full 7.745 cfs diversion rate would have been available for diversion from March 1 to March 11, and May 21 to June 8. Water would not have been available to any rights under Application 80700 from March 12 to March 16, March 31 to April 5, April 16 to April 27, or after June 21. Figure 14 depicts the periods of water availability with the CUAW for alfalfa.

Even in wet years such as 2006, water is not available during the entire irrigation season. In 2006, the full 7.745 cfs diversion rate would have been available from March 1 to August 8, and October 16 to October 31. Water would not have been available to any rights under Application 80700 from August 17 to September 6. Figure 15 depicts the period of water availability with the CUAW for alfalfa.

Figure 14. Water Available to Rights Associated with Application 80700 in 2007 (Dry Year) with Average CUAW of Alfalfa

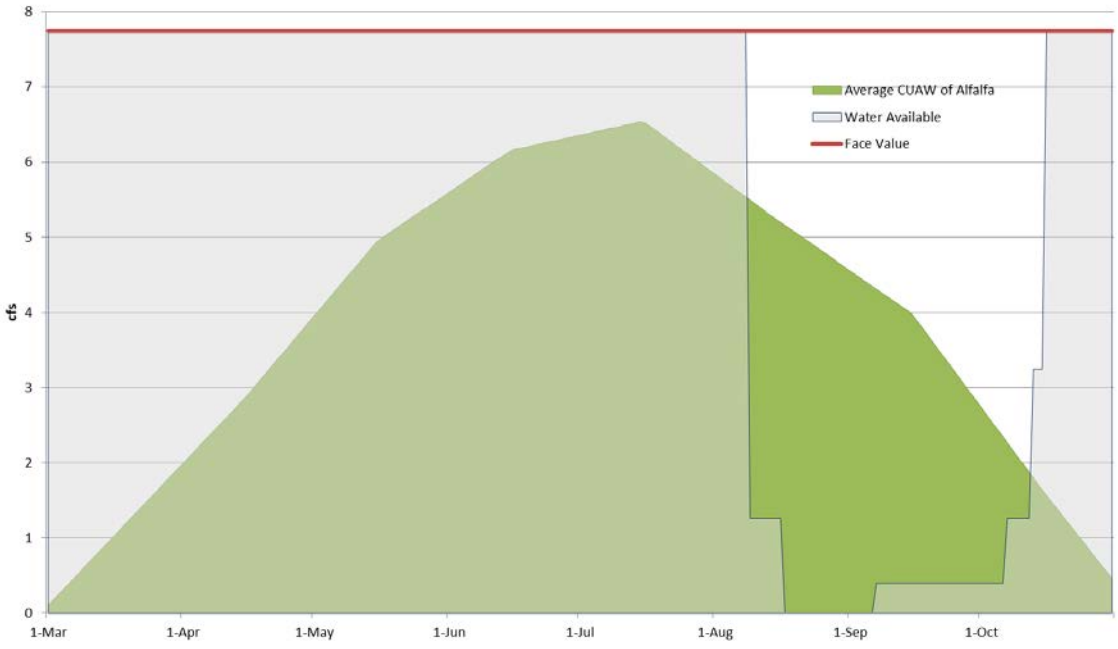


Figure 15. Water Available to Rights Associated with Application 80700 in 2006 (Wet Year) with Average CUAW of Alfalfa

These three example years illustrate the variability in water availability and how water availability compares with an average pattern of CUAW for alfalfa. Numerous factors affect water availability from one year to the next including snowpack, temperatures in the upper and lower watersheds, irrigation scheduling, and alfalfa cutting cycles. Additionally, the actual pattern of CUAW for alfalfa can vary based on many of these same factors and others. These two issues of water availability and CUAW must be combined to limit the water available for change under rights associated with Application 80700 to avoid conflict to other water rights. A limit of only the consumptive use of 3.0 acre-feet per acre may be reached in as little as 126 days, based on a 1.2 cfs per 100 acres right diverting continuously at Face Value. However, as illustrated in the previous figures water is typically not available to meet the CUAW throughout the irrigation season. Therefore, water available for change under Application 80700 must be limited by both the CUAW and availability as determined by the Watermaster.

7. Key Elements of a Water Right

A water right is a nonpossessory right to divert water from a watercourse for beneficial purposes on a specific place of use. Due to the watercourse being relied upon by other water right holders and reuse being such an integral part of water supply and use, water rights are further defined by purpose, rate, quantity, season, and point of diversion. This specificity in the definition of a water right facilitates maximizing the beneficial use of the available water supply by allowing others to rely on, and apply for, the remaining available water supply.

Water rights are applied for and perfected based on historical use and practices, including, the flexibility to use and reuse water as it flows through the system. Not only the water right process and development, but the operation and distribution of the available water relies on the uses and practices common to the area or region during the time of perfecting the water right. In the Walker River Decree it is apparent the water rights and distribution system were developed with the intent to maximize the beneficial use of the available water supply for the purpose of irrigating agricultural land. Specific terms and conditions (such as rate of diversion, season of diversion, and place of use) were included in the water rights or relied upon for operations based on practices common to the area and time era.

The reliance on historical uses and practices in defining the water rights are articulated in the Walker River Decree as follows:

> Paragraph X which in part provides as follows: "Any of the said parties shall be entitled to change the manner, means, place or purpose of use or the point of diversion of the said waters or any thereof in the manner provided by law, so far as they may do so without injury to the rights of other parties hereto, as the same are fixed hereby."
>
> Paragraph XI in part provides as follows: "… each of the said parties is hereby enjoined and restrained from taking, diverting, or interfering in any way with the water of the said Walker River or its branches or tributaries so as to in any way or manner interfere with the diversion, enjoyment and use of the waters of any of the other parties to this suit as set forth in this decree, having due regard to the relative rights and priorities herein set forth, and each of the said parties is hereby enjoined and restrained from ever taking, diverting, carrying away, or otherwise using or claiming any of the water so allotted to them in any manner or at any time so as to in any way interfere with the prior rights of other parties to this suit as the same are herein set forth, or until such parties having prior rights as herein specified have received upon their several lands the waters so adjudicated to them."

Paragraph XV of the Walker River Decree provides for a Watermaster to apportion and distribute the waters of the Walker River, its forks, and tributaries in the State of Nevada and in the State of California in accordance with provisions of the Walker River Decree. Rules and Regulations adopted by the Watermaster on August 25, 1953, and approved by the Court on September 3, 1953, set forth a formula for determining the total amount of water available to serve water rights recognized by the Walker River Decree. Under this formula, the total amount of water available is the sum total of the natural flow plus the amount of return flow to the stream system through seepage, drain canals, or any other sources. Based on this formula, and Paragraphs X and XI, it is clear a change to an existing water right cannot occur without consideration whether the change will conflict with other decreed water right holders.

Clearly, the Walker River Decree was entered to document the priority and rate of diversion of water use within the basin and to determine the relative priority of all of the water rights to each other. In addition, the historical practices in which tailwater from one user was the supply to another user was identified and not to be disrupted through any change to the manner, means, place or purpose of use, or point of diversion of the water right. The Watermaster must clearly rely on the return flow to maximize the use of the available water supply. Any proposal to change a water right that would potentially affect the availability and timing of the non-consumptive use portion of a water right must be denied in order to avoid conflict with the water rights of other users.

V. CONFLICT WITH EXISTING WATER RIGHTS DUE TO CHANGE IN WATER RIGHTS

Changes to water rights modify the way water was originally authorized for use and have the potential to conflict with other water right holders. In order to address the underlying "no-injury" rule, the amount of water which can be authorized under a change, without conflict with water rights of others, can be described as the portion of a water right that would not be available for reuse by another water right holder. This is the CUAW for decreed natural flow rights on the Walker River. Conflict with other water right holders can occur as result of the non-consumptive use portion of the original water right not being available for use by the other water right holders.

Conflict with existing water rights is further discussed below from a Walker River Basin perspective, and more specifically relative to Application 80700.

1. Walker River Basin

The Walker River Basin is essentially a closed basin. Precipitation that falls on the basin remains in the basin as either surface water or groundwater. The majority of the water that leaves the basin is lost through evaporation and transpiration, collectively evapotranspiration ("ET") or consumptive use. There are small volumes of surface water diverted from the Smith Valley north toward Artesia Lake of which the surface tailwater does not flow toward Walker Lake (Lopes and Allander, 2009). In addition, there are estimates of approximately 2,300 acre-feet annually of sub-surface flows out of the basin as groundwater near Double Springs (Allander et. al., 2009).

Walker Lake is the terminus of the Walker River and the lowest point in the basin. On its path from the Sierra Nevada mountains to Walker Lake, Walker River flow can be directly diverted for irrigation, diverted to storage for future use, or remain in the river. The vast majority of flows used for irrigation but not consumed as ET return to the river and thus to Walker Lake or are used to satisfy the consumptive use portion of another water right. Therefore, the only way to increase flow to Walker Lake is to decrease the volume of water that leaves the basin through ET. This is a fundamental construct of the physical system and the reason why only the consumptive use portion of the water under rights associated with Application 80700 can be changed to wildlife purposes without causing conflict with and injury to other water rights.

This point can be further explained through a hypothetical situation wherein the decreed natural flow rights under Application 80700 are the only water rights that exist in the basin. Assuming Application 80700 was filed in this hypothetical situation, there are

no other users to be injured if the NSE approved a change for the full Face Value of the rights to flow into Walker Lake. However, the actual inflow to Walker Lake would not increase by the full Face Value of the right after the change. Inflow to Walker Lake would increase only by the portion of the right that was previously consumed when the rights were used for irrigation. The reason is the non-consumptive use portion was already reaching Walker Lake prior to the change.

When considering both the physical system and the other water right holders in the Walker River Basin, approval of a change of anything more than the consumptive use to remain in the river and increase flow downstream and into Walker Lake would result in conflict with other existing rights. The physical system dictates that only the previously consumed water is made available by Application 80700 to increase flow to Walker Lake. Therefore approval of a change for more than the consumptive use means any additional water must come from, and conflict with the water rights of others.

The use of consumptive use as a measure of the benefit to Walker Lake and as the quantity to which water right transfers are limited is consistent with material obtained from NFWF's effort and website. NFWF's website includes presentations and information prepared by DRI and the Nevada Division of Water Resources (NDWR) in cooperation with NFWF, which provide details on studies of consumptive use within the Walker River Basin. The presentation entitled "Remote Sensing of Consumptive Use in the Walker River Basin, Nevada" states that "water right transfers are limited to consumptive use" and that it will be necessary to study "the reduction in agricultural consumptive use" and that it will be necessary to study "the reduction in agricultural consumptive use to an increase in Walker Lake volume" (NDWR and DRI). The objective of these studies, which are funded by NFWF, is to determine accurate values of ET for use in water transfers. Appendix 2 contains information obtained from the NFWF website.

2. Application 80700

Application 80700 was filed with the NSE by NFWF on March 24, 2011, and amended by NFWF for submittal to the NSE on May 10, 2011. This application involves underlying water rights for diversions from the natural flow of the Walker River and its tributaries, as identified in the Walker River Decree. Application 80700 proposes: (1) changing the manner of use from "as decreed" to Wildlife Purposes, and (2) changing the place of use from a total area of 646.16 acres to include the Walker River from the weir diversion structure through the USGS Wabuska gage, then through Weber Reservoir into and including Walker Lake. Application 80700 requests the entire quantity of water

available under the water rights, up to 7.745 cfs, be made available for the proposed changes.

Changes involving decreed natural flow rights can only occur to the extent that surface water is available under those water rights. As described above, the Watermaster determines the quantities of water available for diversion under the water rights associated with Application 80700. During drier hydrologic periods, there is less water available under these decreed natural flow rights as compared to wetter periods. A portion of the water diverted under these water rights is used for consumptive use purposes; and the remaining portion diverted provides for transportation losses, percolates underground, or is returned to the surface water system, and is available for downstream water users. The Watermaster accounts for these return flows in order to allocate water to these downstream water users which can indirectly impact allocations for upstream water users. Specifically, the 1953 Rules and Regulations identify that the Chief Deputy Water Commissioner "shall add to this accumulated total of natural flow water the amount of return flow he computes to be returning to the stream system through seepage, drain canals, or any other sources. The sum total of water from these two sources shall be considered to be the total amount of water to serve the vested rights under the decree and the year of priority to be served shall be determined daily by the Chief Deputy Water Commissioner from this information." Thus, the quantity of flow returning to the stream from irrigation of the lands covered under Application 80700 is used by the Watermaster to meet the 1859 Walker River Tribe's water right in the Walker River at the Wabuska gage. If the NSE were to now approve a change that would identify this non-consumptive use portion as instream flow to Walker Lake, in response, the Watermaster would need to adjust the upstream priorities to make more water available in order to satisfy the water right of the Walker River Tribe. Thus, such a change conflicts with existing rights.

As previously indicated, the non-consumptive use portion of the water rights associated with Application 80700 has been relied upon to optimize the use of the available water supply and to assist with distributing water to other water right holders. In my opinion, approving a change to instream flow of the non-consumptive use portion of water rights and eliminating that portion from the Watermaster's common pool of water will cause a domino effect in the Watermaster's determination of water availability by priority pursuant to the 1953 Rules and Regulations and the Walker River Decree. If the non-consumptive use portion of the water rights is no longer available for these purposes as a result of a change pursuant to Application 80700, a conflict with existing water right holders will occur. This conflict could occur to other water right holders on the West Hyland Ditch, water right holders downstream of Yerington Weir (Head of West Hyland Ditch), and water right holders upstream of the Yerington Weir. The reasons for these potential conflicts with the other water right holders are provided below by location.

West Hyland Ditch

Conflict with other water right holders on the West Hyland Ditch may result if the non-consumptive use portion of the water rights under Application 80700 is no longer available to be diverted into the West Hyland Ditch. The non-consumptive use portion has been available for the Watermaster to assist with meeting the numerous other water demands and water rights on the West Hyland Ditch, both upstream and downstream of the lands covered under Application 80700. The non-consumptive use portion of the water rights associated with Application 80700 is part of the common pool of water available for meeting conveyance losses and optimizing the use of water to meet the beneficial uses as originally adjudicated in the Walker River Decree.

To emphasize this point, if the only water rights that remained on the West Hyland Ditch had a total decreed natural flow right of 7.745 cfs, the portion that would be available to meet the consumptive use at the place of use would be less than what has been experienced in the past. That is to say, the non-consumptive use of all water rights on a given ditch are used as a common pool of water to offset transportation losses along the ditch in order to more frequently, and to a greater extent, meet the consumptive use of all water rights on the ditch.

Downstream of Yerington Weir (Head of West Hyland Ditch)

There likely have been times when the entire rate of diversion (7.745 cfs) under the rights associated with Application 80700 has not been required to satisfy the consumptive use at the place of use and the non-consumptive portion of this water has remained instream available for satisfying other decreed natural flow rights, including the 1859 Walker River Tribe's water right and the 1916 water right held by the Stanleys. If the NSE were to authorize the full rate of diversion or Face Value for change under Application 80700 to Walker Lake the original non-consumptive use portion would no longer be available to satisfy these water rights. In the case of the Walker River Tribe's water right, the Watermaster would need to make further adjustments in priority for upstream water rights in order to satisfy the 1859 Walker River Tribe's water right. In other words, if the NSE approved the non-consumptive use portion under Application 80700 as available for instream flows, this would be in direct conflict with the Watermaster's direction as provided in the 1953 Rules and Regulations. Similarly, the Stanley Ranch would not be allowed to divert and receive the benefit of the non-consumptive use portion under Application 80700 if the NSE were to approve a change to instream flows of that non-consumptive use portion.

Following the same logic, if the non-consumptive use portion of the water rights associated with Application 80700 was authorized to remain instream to Walker Lake, this water would not be available to satisfy any of the claimed water rights of the Walker River Tribe if they are ultimately recognized to exist. These claimed water rights are currently in litigation pending in the United States District Court. These claimed water rights were identified in Section 5 of this report.

In addition, although not a physical impact to the system, a conflict with Certificate 10860, held by Nevada Department of Wildlife, would exist if the non-consumptive use portion of the water rights associated with Application 80700 were authorized to remain instream to Walker Lake. The conflict would develop as to which water right this water would be accounted for. To the extent this water reaches Walker Lake under today's condition, it is accounted for under Certificate 10860. Under conditions in which Application 80700 were authorized for both the consumptive and non-consumptive use, this water would not be available for beneficial use under Certificate 10860.

There also exist unaddressed comments to the Walker River Court relative to the proper location for measurement of the 1859 Walker River Tribe's water right and the need to include a specific increment of water at the place of measurement to offset uncertain conveyance losses. In order to avoid conflict with existing water rights return flow from the non-consumptive use portion of the water rights associated with Application 80700 must be available to meet the 1859 water right if it is to be measured at a new place of measurement, or if there is a requirement imposed to make up conveyance losses to its point of diversion.

Upstream of Yerington Weir

Conflict with water right holders upstream of the Yerington Weir would also occur if the NSE were to authorize the total rate of diversion, Face Value, to be changed pursuant to Application 80700. Currently, the Watermaster is required to and does rely on the unused and the non-consumptive use portions of the water rights associated with Application 80700 to maximize water available to all other decreed natural flow rights, including the 1859 Walker River Tribe's water right at the Wabuska gage. This in turn would require the Watermaster to reduce water availability to upstream junior priority water rights currently diverting water in order to replace the non-consumptive use portion at the Wabuska Gage. Due to the complexities of the system, this has the potential to conflict with a water right holder having a priority senior to those water rights pursuant to Application 80700, but junior to the 1859 water right.

Conflict with the District's right to store water in Bridgeport and Topaz Reservoirs, and to divert water pursuant to Certificates 8859 and 8860 would occur if the NSE were to approve the changes for the total rate of diversion, Face Value, as requested in Application 80700. Under current conditions, if the Watermaster determines there is adequate available natural flow and return flow, pursuant to the 1953 Rules and Regulations, a full priority is declared. In addition, under these circumstances the District would be allowed to store water in Bridgeport and Topaz Reservoirs and divert water pursuant to Certificates 8859 and 8860. Under this condition the Watermaster is relying on non-consumptive uses of decreed natural flow rights to satisfy other rights, including the 1859 Walker River Tribe's water right. Under a condition in which the NSE approved a change encompassing both the consumptive and non-consumptive uses under Application 80700, the District would be the first to curtail diverting, in this case diverting to storage and Certificates 8859 and 8860. This changed condition would result in a conflict with the District water rights.

Figure 16 provides a schematic for illustrative purposes describing the conditions under which conflict with water rights would occur.

VI. ADMINISTRATION

The application to change water rights must not conflict with other existing water rights. Conflict is avoided by using the consumptive use savings as the quantity of water made available for change. In addition, the past administration of the available water by the Watermaster should not be disrupted such that a conflict could occur. This includes the requirement that sufficient water must be simultaneously available at the point of diversion to satisfy both the consumptive and non-consumptive use portions of the water right. Continuing this requirement will assure the Watermaster retains access to the common pool of water to satisfy other water rights on the system. Without this access, the past balance and administration by the Watermaster would be disrupted.

In order to administer the water rights under Application 80700, consistent with historical practices and to avoid conflict with existing water rights, the NSE should authorize the change of only the consumptive use portion of the Face Value of the water when it is determined the Face Value of the water is available at the point of diversion by the Watermaster. The consumptive use portion of the water rights, based on an average value for alfalfa (see Bergfeld report) is 3.0 acre-feet per acre over the irrigation season. Dividing this quantity by the Face Value of a decreed natural flow right will provide a consumptive use fraction to be used for future administration of water right changes. In the case of water rights pursuant to Application 80700, the Face Value is 5.83 acre-feet per acre (based on 1.2 cfs from March 1 to October 31). This results in a consumptive use fraction of 51.5%, or 3.99 cfs of the total 7.745 cfs diversion rate of the water rights

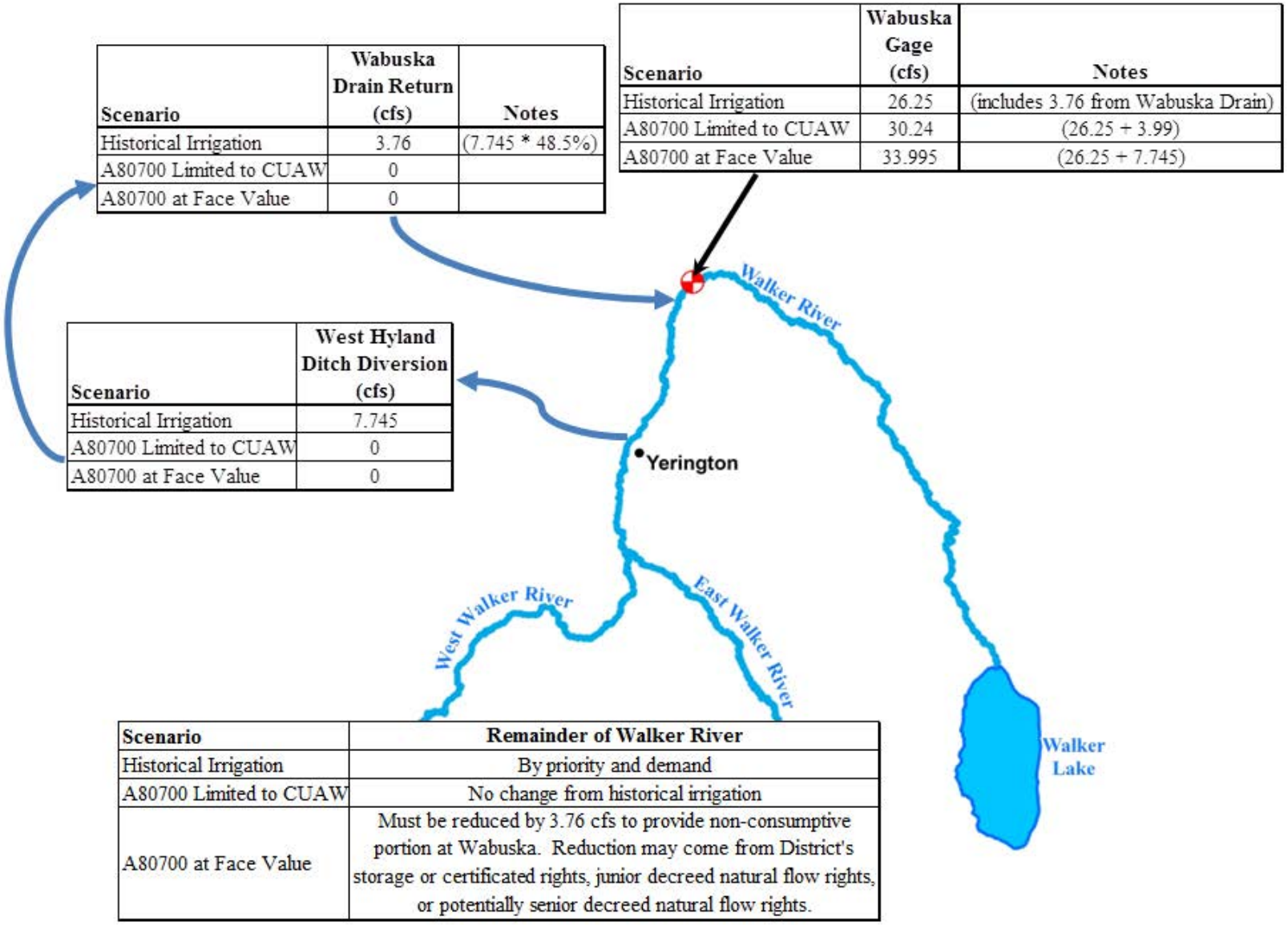


Figure 16. Schematic for Illustrative Purposes of Conditions under which Conflict Others

associated with Application 80700. The non-consumptive use portion, 3.76 cfs, must remain available for the Watermaster to assure water is made available to other existing water right holders as it were available prior to the changes proposed by Application 80700. This approach should be applied to each of the individual water rights and priorities associated with Application 80700 and subsequent applications. Table 5 below provides the diversion rate, the consumptive use fraction (51.5%), and the non-consumptive use fraction for each of the water rights and priorities associated with Application 80700.

Priority Date	Claim No.[1]	Diversion Rate (cfs)	Consumptive Use Fraction (51.5%) (cfs)	Non-Consumptive Use Fraction (48.5%) (cfs)
1874	89	0.4	0.21	0.19
1877	67	0.86	0.44	0.42
1880	23A	1.035	0.53	0.50
1880	44	0.6	0.31	0.29
1880	89	0.11	0.06	0.05
1881	35	0.24	0.124	0.116
1887	23	0.39	0.20	0.19
1888	23A	0.96	0.49	0.47
1891	89	0.11	0.06	0.05
1894	23	0.09	0.05	0.04
1896	67	1.1	0.57	0.53
1900	23	0.12	0.062	0.058
1900	35	1.38	0.71	0.67
1901	44	0.18	0.093	0.087
1904	67	0.05	0.03	0.02
1906	23	0.12	0.062	0.058
Total[2]		7.75	3.99	3.76

Table 5. Consumptive Use Fraction of Water Right Associated with Application 80700

1. Refer to Table 3 footnotes for description of claim numbers.
2. The sum of the quantities in the consumptive use fraction and non-consumptive use fraction columns do not equal the total due to rounding.

For example, under the water right identified as having an 1874 priority date shown in Table 5 above, the NSE would authorize a rate of diversion of 0.21 cfs (consumptive use shown in Table 5) for wildlife purposes when the Watermaster has determined water is available to satisfy the Face Value of the water right for that given priority; and not to exceed a total of 100.08 acre-feet (33.36 acres [see Table 3] x 3.0 acre-feet per acre) during the March 1 through October 31 period.

The measurement and monitoring to document use for wildlife purposes pursuant to Application 80700 will prove challenging. No change in the point of diversion has been requested, therefore, the Yerington Weir must continue to be the point of measurement. Flow measurement gages were installed and operations of the Walker River evolved to maximize the use of water for irrigation purposes pursuant to the Walker River Decree. The Watermaster estimates available natural flow and return flow based on available flow gages to maximize the use of water and distribute water according to priorities of the Walker River Decree, including the most senior right of the Walker River Tribe measured at Wabuska. Neither the existing gages nor the current operational procedures were intended to measure a small increment of flow or for the purpose of providing flow to Walker Lake.

VII. CONCLUSIONS

The NSE should limit the change to only the consumptive use portion of the water rights associated with Application 80700 for delivery only when the Watermaster determines the entire Face Value, including the consumptive and non-consumptive use portions of the rights, are available at the point of non-diversion. The quantity approved for change should not exceed the consumptive use amount (3.0 acre-feet per acre) in an irrigation season. In so limiting the change sought by Application 80700 the NSE will avoid conflict with and injury to other existing water rights.

The Walker River Decree as implemented through the 1953 Rules and Regulations require the Watermaster to rely on the return flow, the non-consumptive use portion of water rights, in determining the water available to satisfy other decreed natural flow rights, including the 1859 Walker River Tribe's 26.25 cfs water right measured at the Wabuska gage, and the 1916 Stanley water right. If the NSE were to authorize the full Face Value to be changed, the non-consumptive use portion would no longer be available to satisfy other decreed natural flow rights. This would cause conflict with existing water rights for the following reasons:

1. The non-consumptive use portion would no longer be available to assist with satisfying other decreed natural flow rights on the West Hyland Ditch.

2. Upstream water right priorities would need to be adjusted to make more water available to replace the non-consumptive use portion that currently is required to, and assists in satisfying the 1859 Walker River Tribe's water right. This would result in a conflict with upstream direct diversion decreed natural flow rights.

3. In some instances, the District's diversion to storage and/or diversions pursuant to the District's Certificate No. 8859 and 8860 would need to be curtailed in order to make more water available to replace the non-consumptive use portion that is required to, and assists in satisfying, the 1859 Walker River Tribe's water right. This would result in a conflict with the District decreed natural flow right to store water in Bridgeport and Topaz Reservoirs, and with the District's certificated water rights.

4. Less water would be available to the 1916 decreed natural flow right held by Stanley than available at the time of the Walker River Decree thus causing conflict.

5. Less water would be available to be accounted for as use under NDOW's Certificate 10860.

6. Less water would be available to meet the claimed water rights of the Walker River Tribe. If these claims are recognized, allowing a change of the non-consumptive portion of the water rights associated with Application 80700 would result in a conflict with them.

VII. REFERENCES

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APPENDIX 1

WALKER RIVER IRRIGATION DISTRICT'S RECORDING OF PRIORITIES AS SET BY THE WATERMASTER AND WATERMASTER RECORDS

March 1 - 30 2012

DECREE PRIORITY SUMMARY

Date	East	West	Tunnel	Main	Antelope Valley
3-1-12	1870	1872	1872	1872	1872
3-29-12	1870	1867	1872	1872	1867
3-30-12	1867	1867	1867	1867	1867
4-5-12	1867	1871	1867	1867	1871
4-6-12	1871	1871	1871	1871	1871
4-9-12	1869	1869	1869	1869	1869
4-16-12	1869	1869	1869	1869	1870
4-17-12	1869	1870	1869	1869	1870
4-18-12	1870	1870	1870	1870	1870
4-23-12	1874	1874	1874	1874	4-21-12 1874
4-24-12	1874	1890	1874	1874	4-23-12 1890
4-25-12	1880	1890	1890	1890	1890
4-26-12	1880	4-25-12 Full	Full	Full	4-24 Full
4-28-12	1874	Full	Full	Full	Full
4-30-12	1870	Full	Full	Full	Full
5-2-12	1870	1877	1877	1877	1877
5-4-12	1870	5-3-12 1890	1890	1890	5-2-12 1890
5-7-12	1865	1875	1875	1875	1875
5-11-12	1865	5-10-12 1878	1878	1878	5-10-12 1878
5-12-12	1865	1890	1878	1878	5-11-12 1890
5-14-12	1865	1890	1890	1890	1890
5-15-12	1865	Full	1890	1890	Full
5-16-12	1865	Full	Full	Full	Full
5-30-12	1865	1869	1869	1869	5-29-12 1869
6-1-12	1870	1869	1869	1869	1869
6-4-12	1870	1874	1874	1874	1874
6-12-12	1870	1870	1874	1874	1870
6-13-12	1870	1870	1870	1870	1870
6-19-12	1870	1868	1870	1870	1868
6-20-12	1868	1868	1868	1868	1868
6-22-12	1868	1864	1868	1868	1864
6-25-12	1864	1864	1864	1864	1864
6-26-12	1863	1865	1865	1863	1865
6-27-12	1863	1862	1862	1865	1863
6-28-12	1862	1870	1863	1863	1862
7-5-12	1861	1863	1863	1863	1863 + 90 %
8-6-12	1861	1859	1859	1861	1859
8-10-12	1859	1859	1859	1859	1859
9-28-12	1859	1859	1859	1859	1862
10-1-12	1862	1862	1862	1862	1862

MARCH 1ST 2011

DECREE PRIORITY SUMMARY

Date	East	West	Tunnel	Main	Antelope Valley
3-1-11	Full	Full	Full	Full	Full
3-14-11	Full & Flood	Full	Full	Full & Flood	Full
3-16-11	Full & Flood	Full & Flood	Full & Flood	Full & Flood	Full & Flood
4-6-11	Full	Full	Full	Full	Full
4-25-11	Full & Flood	Full & Flood	Full & Flood	Full & Flood	Full & Flood
5-1-11	Full & Permit	Full & Permit	Full & Permit	Full & Permit	Full & Flood
8-1-11	Full & Flood	Full & Flood	Full & Flood	Full & Flood	Full & Flood
8-3-11	Full & Flood	Full	Full & Flood	Full & Flood	Full
8-5-11	Full	Full	Full	Full	Full
8-15-11	1890	1890	1890	1890	1890
8-30-11	1877	1877	1877	1877	1877
9-7-11	1877	1874	1877	1877	1874
9-8-11	1874	1874	1874	1874	1874
9-20-11	1874	1877	1874	1874	1877
9-21-11	1877	1877	1877	1877	1877
9-29-11	1877	1880	1877	1877	1880
9-30-11	1880	1880	1880	1880	1880
10-13-11	1885	1885	1885	1885	1885
10-13-11	1890	1890	1890	1890	1890
10-15-11	1900	1900	1900	1900	1900
10-17-11	Full	Full	Full	Full	Full

"2010"

DECREE PRIORITY SUMMARY

Date	East	West	Tunnel	Main	Antelope Valley
3-1-10	Full	Full	Full	Full	Full
4-3-10	1880	1865	1865	1880	1865
4-5-10	1874	1865	1865	1874	1865
4-23-10	1874	1873	1865	1874	1873
4-24-10	1874	1873	1873	1874	1873
5-5-10	1874	1875	1873	1874	5-14-10 1875
5-6-10	1875	1875	1875	1875	1880
5-7-10	1880	1880	1880	1880	1880
5-14-10	1880	1880	1880	1880	1890
5-15-10	1890	1890	1890	1890	1890
5-17-10	1890	1890	1890	1890	Full
5-18-10	1890	1900	1890	1890	Full
5-19-10	1900	1915	1900	1900	Full
5-20-10	1915	1915	1915	1915	Full
5-22-10	1915	Full	1915	1915	Full
5-24-10	1915	Full	Full	Full	Full
5-29-10	Full	Full	Full	Full	Full
6-7-10	Full	Full	Full	Full	Flood
6-8-10	Full	Flood	Full	Full	Flood
6-9-10	Full	Flood	Flood	Flood	Flood
6-15-10	Full	Full	Flood	Flood	Flood
6-16-10	Full	Full	Full	Full	Full
6-19-10	Full	Full-Flood	Full/Flood	Full/Flood	Full/Flood
7-14-10	Full	Full	Full	Full	Full
7-23-10	Full	Full	Full	Full	1876
7-24-10	1876	1876	1876	1876	1876
8-2-10	1874	1874	1874	1874	1870
8-3-10	1874	1870	1874	1874	1870
8-4-10	1870	1863	1870	1870	1863
8-5-10	1863	1863	1863	1863	1863
8-6-10	1863	1863	1863	1863	1863 + 60
8-10-10	1863	1864	1863	1863	1863 + 60
8-11-10	1864	1864	1864	1864	1865
8-13-10	1865	1865	1865	1865	1865
8-19-10	1865	1864	1865	1865	1864
8-20-10	1864	1864	1864	1864	1864
8-23-10	1864	1864	1864	1864	1863
8-24-10	1864	1863	1864	1864	1863
8-25-10	1863	1863	1863	1863	1863
9-27-10	1867	1863	1863	1867	1863
10-1-10	1869	1866	1866	1869	1863
10-7-10	1870	1866	1866	1870	1863

2010 Cont.

DECREE PRIORITY SUMMARY

Date	East	West	Tunnel	Main	Antelope Valley
10-9-10	Full	1866	1866	Full	1863
10-15-10	Full	Full	1866	Full	1863
10-16-10	Full	Full	Full	Full	1863

3004

DECREE PRIORITY SUMMARY

Date	East	West	Tunnel	Main	Antelope Valley
3-1-09	Full	Full	Full	Full	Full
3-7-09	1869	1869	1869	1869	1869
3-11-09	1871	1869	1869	1871	1869
3-14-09	1871	1871	1871	1871	1871
3-19-09	1872	1872	1872	1872	1872
4-1-09	1869	1869	1869	1869	1869
4-4-09	1871	1871	1871	1871	1871
4-8-09	1871	1869	1871	1871	1869
4-9-09	1869	1869	1869	1869	1869
4-21-09	1869	1869	1869	1869	1876
4-22-09	1869	1876	1869	1876	1876
4-23-09	1869	1876	1876	1876	1876
4-24-09	1869	1884	1884	1884	1884
4-29-09	1869	1876	1884	1884	1876
4-30-09	1869	1876	1876	1876	1876
5-4-09	1870	1876	1876	1876	1884
5-5-09	1870	1884	1876	1876	1884
5-6-09	1870	1884	1884	1884	1884
5-7-09	1870	1884	1884	1884	1884
5-8-09	1870	1884	1884	1884	Full
5-9-09	1870	Full	1884	1884	Full
5-11-09	1870	Full	Full	Full	Full
5-13-09	1875	Full	Full	Full	Full
5-15-09	1885	Full	Full	Full	Full
5-18-09	1895	Full	Full	Full	Full
5-20-09	Full	Full	Full	Full	Full
7-6-09	Full	Full	Full	Full	1892
7-7-09	Full	1892	Full	Full	1892
7-8-09	1892	1892	1892	1892	1877
7-9-09	1892	1877	1892	1892	1875
7-10-09	1877	1875	1877	1877	1875
7-11-09	1875	1875	1875	1875	1875
7-13-09	1875	1875	1875	1875	1871
7-14-09	1875	1871	1875	1875	1869
7-15-09	1871	1869	1871	1871	1869
7-16-09	1869	1869	1869	1869	1869
7-30-09	1869	1869	1869	1869	1864
7-31-09	1864	1864	1864	1864	1864
8-1-09	1864	1864	1864	1864	1864
8-10-09	1863	1863	1863	1863	1863
8-24-09	1862	1862	1862	1862	1862
9-9-09	1862	1861	1862	1862	1862

CONT

DECREE PRIORITY SUMMARY

Date	East	West	Tunnel	Main	Antelope Valley
9-10-09	1861	1861	1861	1861	1862
9-28-09	"	1862	"	"	1862+35 to 1863
9-29-09	1861	1863+50 to 1861	1861	1861	1862+35 to 1863
9-30-09	1863	1863+50 to 1864	1863+50 to 1864	1863+50 to 1864	1862+35 to 1863
10-6-09	1863	1864	1863+50 to 1864	1863+50 to 1864	1862+35 to 1863
10-7-09	1865	1864	1864	1865	1862+35 to 1863
10-19-09	1865	1864	1864	1865	1872
10-20-09	1872	1872	1864	1865	1872
10-21-09	1872	1872	1872	1872	Full
10-22-09	1872	Full	1872	1872	Full
10-23-09	Full	Full	Full	Full	Full

" 2008

DECREE PRIORITY SUMMARY

Date	East	West	Tunnel	Main	Antelope Valley
3-1-08	Dull	Dull	Dull	Dull	Dull
3-31-08	1872	1872	1872	1872	1872
4-2-08	1870	1870	1870	1870	1870
4-8-08	1869	1869	1869	1869	1869
4-9-08	1869	1869	1869	1869	1869
4-10-08	1869	1869	1869	1869	1869
4-16-08	1869	1869	1869	1869	1874
4-17-08	1869	1874	1874	1869	1874
4-18-08	1869	1874	1874	1874	1870
4-19-08	1869	1870	1870	1870	1870
4-29-08	1869	1870	1870	1870	1878
4-30-08	1869	1878	1870	1870	1878
5-1-08	1869+60%	1878	1878	1878	1878
5-8-08	1869+60%	1878	1878	1878	1885
5-9-08	1869+60%	1885	1878	1878	1885
5-10-08	1874	1885	1885	1885	1885
5-12-08	1874	1885	1885	1885	1874
5-13-08	1874	1874	1885	Dull	Dull
5-14-08	1874	Dull	1874	Dull	Dull
5-15-08	1874	Dull	Dull	Dull	Dull
5-19-08	1880	Dull	Dull	Dull	Dull
5-22-08	Dull	Dull	Dull	Dull	Dull
5-27-08	1885	Dull	Dull	Dull	1880
5-28-08	1885	1880	Dull	Dull	1880
5-29-08	1885	1880	1880	1880	1880
6-2-08	1885	1880	1880	1880	Dull
6-3-08	1885	Dull	1880	1880	Dull
6-4-08	1894	Dull	Dull	Dull	Dull
6-6-08	Dull	"	"	"	"
6-28-08	1883	1883	1883	1883	1883
6-30-08	1879	1879	1879	1879	1879
7-7-08	"	"	"	"	1870
7-8-08	1879	1870	1879	1879	1870
7-9-08	1870	1870	1870	1870	1870
7-14-08	1870	1863	1863	1870	1863
7-15-08	"	"	"	"	1864
7-16-08	1870	1864	1863	1870	1863
7-17-08	1870	1864	1864	1870	1863+40 2061
7-21-08	1865	1864	1864	1865	1863+40 "
7-25-08	1864	1864	1864	1864	"
7-28-08	1864	1864	1864	1864	1863
7-29-08	1864	1863	1864	1864	1863
7-30-08	1865	1865	1865	1865	1865

(2008) Cont.

DECREE PRIORITY SUMMARY

Date	East	West	Tunnel	Main	Antelope Valley
7-31-08	1863	1863	1863	1863	1862+50
8-1-08	1862+50	1862+50	1862+50	1862+50	1862+50
8-4-08	1862	1862	1862	1862	1862
8-11-08	1861	1861	1861	1861	1861
8-27-08	1860	1860	1860	1860	1860
9-4-08	1859	1859	1859	1859	1859
10-13-08	1863	1862	1862	1863	1862
10-17-08	1865	1862	1862	1865	1862
10-18-08	1865	1863	1863	1865	1862

2007

DECREE PRIORITY SUMMARY

Date	East	West	Tunnel	Main	Antelope Valley
3-1-07	Full	Full	Full!	Full!	Full!
3-12-07	1872	1872	1872	1872	1872
3-17-07	1874	1874	1874	1874	1874
3-19-07	1875	1874	1874	1875	1874
3-22-07	1874	1874	1874	1874	1874
3-30-07	1874	1873	1874	1874	1874
3-31-07	1873	1873	1873	1873	1873
4-6-07	1873	4-5-07 1874	1874	1874	1874
4-9-07	1873	1874	1874	1874	1879
4-11-07	1873	1879	1879	1879	1879
4-14-07	1873	1870	1879	1879	1870
4-16-07	1867	1870	1870	1870	1870
4-28-07	1875	1878	1875	1878	1872
4-30-07	1875	1878	1872	1878	1882
5-1-07	1875	1880	1875	1875	1882
5-3-07	1875	1880	1880	1880	1882
5-5-07	1867	1875	1875	1875	1875
5-10-07	1867	1875	1875	1875	1882
5-11-07	1867	1880	1875	1875	1882
5-12-07	1870	1880	1880	1880	1890
5-14-07	1875	1890	1890	1890	1890
5-18-07	1875	1890	1890	1890	Full
5-21-07	1875	Full	Full	Full	Full
5-24-07	1874	Full	Full	Full	Full
5-29-07	1867	Full	Full	Full	Full
6-1-07	1874	Full	Full	Full	Full
6-6-07	1874+70%	Full	Full	Full	Full.
6-7-07	1874+70%	Full	Full	Full	1874
6-8-07	" "	1874	Full	Full	1874
6-9-07	1874	1874	1874	1874	1874
6-20-07	1874	1874	1874	1874	1870
6-21-07	1874	1870	1870	1870	1870
6-22-07	1874	1870	1870	1870	1868
6-23-07	1870	1868	1868	1870	1868
6-26-07	1869	1865	1869	1869	1867
6-27-07	1865	1865	1865	1865	1865
6-28-07	1865	1865	1865	1865	1863+30 [illegible]
6-29-07	1865+30%	1865+30%	1863+30%	1865+30% [illegible]	1863
6-30-07	1863	1863	1863	1863	1862+30% 65
7-2-07	1862+30% [illegible]	1862+30% 65	1862+30% 65	1862+30% [illegible]	1862+30% 65
7-3-07	" "	" "	" "	" "	1863
7-16-07	1862+30% 63	1862+30% [illegible]	1862+30% [illegible]	1862+30% [illegible]	1862
7-17-07	"	1862	" "	1862+30% [illegible]	1862
7-18-07	1862+30% [illegible]	1862	1862	" " "	1862
8-8-07	1862	1862	1862	1862	1862
8-9-07	1861	1861	1861	1861	8-8-07 1861
8-22-07	1859	1859	1859	1859	1859
9-28-07	1862	1862	1862	1862	1862
10-12-07	1864	1862	1862	1864	1862

B.R.J Allo[illegible] 1860 [illegible]

8-20-07 B.A.J Allo[illegible] 1859

2007 Cont.

DECREE PRIORITY SUMMARY

Date	East	West	Tunnel	Main	Antelope Valley
10-25-07	1864	1864	26 1864	1864	1864

2006

DECREE PRIORITY SUMMARY

Date	East	West	Tunnel	Main	Antelope Valley
3-1-06	Full Flow	Full	Full	Full Flow	Full
3-7-06	Full Flow	Full Flow	Full Flow	Full Flow	Full
7-10-06	Full Flow	Full	Full	Full Flow	Full
7-21-06	" "	Full Flow	Full Flow	" "	"
8-1-06	Full	Full	Full	Full	Full
8-8-06	Full	Full	Full	Full	1876
8-9-06	1879	1879	1879	1879	1876
8-16-06	1879	1880	1879	1879	1870
8-17-06	1875	1870	1876	1873	1870
9-7-06	1875	1875	1875	1875	1875
10-6-06	1875	1878	1875	1875	1878
10-7-06	1878	1878	1878	1878	1878
10-12-06	1878	1883	1878	1878	1883
10-13-06	1885	1883	1883	1883	1883
10-16-06	Full	Full	Full	Full	Full

2005

DECREE PRIORITY SUMMARY

Date	East	West	Tunnel	Main	Antelope Valley
3-1-05	Full	Full	Full	Full	Full
4-16-05	Full	1877	Full	Full	1877
4-18-05	1877	1877	1877	1877	1877
4-19-05	1877	1880	1877	1877	1880
4-20-05	1880	1880	1880	1880	1880
4-20-05	1880	1890	1880	1880	1890
4-21-05	1890	1890	1890	1890	1890
4-27-05	1880	1880	1880	1880	1880
4-30-05	1886	1890	1880	1880	1890
5-2-05	1890	1890	1890	1890	1890
5-3-05	1890	Full	1890	1890	Full
5-4-05	Full	Full	Full	Full	Full
5-14-05	Full & Flood	Full	Full	Full & Flood	Full
5-18-05	Full & Flood	Full & Flood	Full & Flood	Full & Flood	Full & Flood
7-26-05	Full	Full	Full	Full	Full
8-4-05	Full	1875	1875	Full	1875
8-8-05	1870	1869	1869	1870	1869
8-11-05	1870	1879	1869	1870	1879
8-12-05	1879	1879	1879	1879	1879
8-22-05	1873	1870	1870	1873	1870
9-23-05	1875	1875	1870	1875	1875
9-24-05	1875	1875	1875	1875	1875
10-17-05	1879	1879	1879	1879	1879
10-20-05	1880	1884	1884	1884	1884

DECREE PRIORITY SUMMARY

Date	East	West	Tunnel	Main	Antelope Valley
3-1-04	Full	Full	Full	Full	Full
3-29-04	1874	1872	1872	1874	1872
4-2-04	1875	1874	1874	1875	1874
4-8-04	1880	1880	1880	1880	1880
4-12-04	1879	1880	1880	1880	1880
4-14-04	1875	1877	1877	1877	1877
4-19-04	1872	1872	1872	1872	1872
4-26-04	1867	1872	1872	1872	1872
4-27-04	1867	1872	1872	1872	Full
4-29-04	1867	Full	1872	1872	Full
4-30-04	1867	Full	Full	Full	Full
5-6-04	1874	Full	Full	Full	Full
5-12-04	1880	Full	Full	Full	Full
5-17-04	1880	1885	1885	1885	1885
5-24-04	1879	1885	1885	1885	1885
6-2-04	1879	1880	1880	1880	Full
6-3-04	Full	Full	Full	Full	Full
6-14-04	1880	1880	1880	1880	1880
6-16-04	1880	1880	1880	1880	1880
6-17-04	1880	1880	1880	1880	1880
6-15-04	1880	1880	1880	1880	1880
6-25-04	1880	1880	1880	1880	1880
6-30-04	1880	1876	1876	1880	1876
7-2-04	1879	1870	1870	1879	1870
7-6-04	1873	1864	1864	1873	1864
7-14-04	1873	1863	1864	1875	1863
7-15-04	1869	1863	1863	1869	1863
7-29-04	1865	1863	1863	1865	1863
7-31-04	1864+38%	1863	1863	1864+38%	1863+65%
8-05-04	1863	1863	1863	1863	1863+58%
8-06-04	1863	1863	1863	1863	1863+40%
8-07-04	1863	1863	1863	1863	1859
8-09-04	1859	1859	1859	1859	1859
8-19-04	1859	1859	1859	1859	1862
8-23-04	1859	1859	1859	1859	1863+30%
8-24-04	1859	1863	1859	1859	1863+30%
8-25-04	1869	1863	1863	1859	1863+30%
8-30-04	1864	1859	1859	1864	1862+20%
9-4-04	1859	1859	1859	1859	1862
9-8-04	1859	1859	1859	1859	1859
9-27-04	1859	1859	1859	1859	50%of1862
10-5-04	1859	1859	1859	1859	1862

2004 Continued.

DECREE PRIORITY SUMMARY

Date	East	West	Tunnel	Main	Antelope Valley
10-13-04	1864	1863	1863	1864	1863
10-23-04	1865	1863	1863	1865	1863
10-28-04	Full	Full	Full	Full	Full

Decree Priority Summary

Date	East	West	Tunnel	Main	Ant. Valley
3-1-03	Full	Full	Full	Full	Full
3-19-03	1874	1874	1874	1874	1874
3-24-03	1871	1871	1871	1871	1871
3-26-03	1870	1868	1868	1870	1868
3-31-03	1873	1869	1869	1873	1869
4-9-03	1867	1865	1865	1867	1865
4-16-03	1873	1872	1872	1873	1872
4-19-03	1869	1869	1869	1869	1869
4-23-03	1869	1870	1869	1869	1866
4-24-03	1869	1866	1866	1869	1866
5-15-03	1869	1872	1866	1866	1872
5-16-03	1869	1872	1872	1872	1872
5-17-03	1874	1872	1872	1872	1872
5-20-03	1874	1880	1872	1872	1882
5-21-03	1876	1882	1880	1880	1882
5-22-03	1876	1882	1882	1882	1882
5-23-03	1876	Full	1880	1880	Full
5-24-03	1890	Full	Full	Full	Full
5-27-03	Full	Full	Full	Full	Full
6-30-03	1897	1897	1897	1897	1897
7-3-03	1890	1897	1897	1897	1897
7-5-03	1883	1882	1882	1882	1882
7-7-03	1883	1884	1884	1884	1884
7-9-03	1875	1875	1875	1875	1875
7-12-03	1874	1870	1874	1874	1870
7-16-03	1870	1870	1870	1870	1870
7-17-03	1870	1863	1870	1870	1863
7-18-03	1869	1863	1863	1869	1863
7-21-03	1869	1863	1865	1869	1869
7-22-03	1869	1869	1863	1869	1869
7-23-03	1869	1869	1869	1869	1869
7-29-03	1869	1866	1869	1869	1866
7-30-03	1869	1866	1866	1869	1866
8-12-03	1869	1863	1863	1869	1863+20%
8-16-03	1864	1863	1863	1864	1863
9-4-03	1864	1863+60%	1863	1864	1863+60%
9-5-03	1864	1863+60%	1863+60%	1864	1863+60%
9-11-03	Backup on Valley 40 1859				
9-17-03	1864	1862	1862+60%	1864	1862+60%
9-18-03	1865	1862	1862	1865	1862+60%
9-24-03	1865	1862	1862	1865	1862+20%
9-26-03	1864+30%	1862	1862	1864+30%	1862
10-6-03	1864+80%	1862	1862	1864+80%	1862
10-9-03	1865	1862	1862	1865	1862
10-24-03	1865	1863	1863	1865	1862

Decree Priority Summary

Date	East	West	Tunnel	Main	Ant. Valley
3-01-02	Full	Full	Full	Full	Full
3-15-02	1870	1870	1870	1870	1870
4-8-02	1867	1873	1873	1873	1873
4-10-02	1867	1874	1874	1874	1874
4-12-02	1867	1877	1877	1877	1877
4-13-02	1863	[illegible]	[illegible]	[illegible]	[illegible]
4-16-02	1867	1880	1880	1880	1880
4-18-02	1867	1889	1889	1889	1889
4-22-02	1867	1882	1882	1882	1882
4-26-02	1867	1875	1875	1875	1875
5-1-02	1867	1872	1877	1872	1875
5-11-02	1867	1878	1878	1878	1878
5-17-02	1867	Full	Full	Full	Full
5-20-02	1874	Full	Full	Full	Full
5-25-02	1875	Full	Full	Full	Full
6-1-02	1880	Full	Full	Full	Full
6-3-02	Full	Full	Full	Full	Full
6-13-02	Full	1890	1890	1890	1890
6-17-02	1891	1890	1890	1890	1890
6-19-02	1887	1890	1890	1890	1890
6-21-02	1880	1890	1890	1890	1890
6-28-02	1890	1890	1890	1890	1890
7-3-02	1890	1880	1880	1880	1880
7-6-02	1880	1875	1875	1875	1875
7-8-02	1875	1873	1873	1873	1873
7-10-02	1869	1869	1869	1869	1869
7-12-02	1869	1864	1869	1869	1864
7-17-02	1869	1864	1864	1869	1864
7-19-02	1867	1865+50%	1863+50%	1867	1863+50%
7-25-02	1867	1869	1863	1867	1863
7-26-02	1864+40%	1863	1863	1864+40%	1863
8-2-02	1862	1862	1862	1862	1862
8-7-02	1859	1859	1859	1859	1859
10-10-02	1865	1859	1859	1865	1859
10-15-02	1865	1862	1862	1865	1862

Decree Priority Summary

Date	East	West	Tunnel	Main	Ant. Valley
3-1-01	FULL	FULL	FULL	FULL	FULL
3-21-01	1870	1870	1870	1870	1870
3-26-01	1875	1875	1875	1875	1875
4-6-01	1870	1870	1870	1870	1870
4-12-01	1873	1873	1873	1873	1873
4-25-01	1873	1873	1873	1873	1875
4-26-01	1873	1875	1873	1873	1880
4-27-01	1875	1880	1875	1875	1880
4-28-01	1880	1880	1880	1880	1880
5-3-01	1880	1899	1899	1899	1899
5-7-01	1880	1899	1899	1899	FULL
5-8-01	1880	FULL	1899	1899	FULL
5-9-01	1880	FULL	FULL	FULL	FULL
5-11-01	1894	Full	Full	Full	Full
5-14-01	Full	Full	Full	Full	Full
5-31-01	Full	1890	1890	Full	1890
6-6-01	1890	1880	1880	1890	1880
6-11-01	1880	1880	1880	1880	1880
6-16-01	1875	1875	1875	1875	1875
6-20-01	1870	1870	1870	1870	1870
6-25-01	1865	1865	1865	1865	1865
7-11-01	1865	1863	1863	1865	1863
7-23-01	1864	1862	1862	1864	1862
7-30-01	1862	1862	1862	1862	1862
7-31-01	1862	[redacted]	1859	1862	[redacted]
8-3-01	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
10-10-01	1865	1865	1865	1865	1865
10-18-01	1865	1865	1865	1865	1865.

Decree Priority Summary

Date	East	West	Tunnel	Main	Ant. Valley
3-1-2000	FULL	FULL	FULL	FULL	FULL
3-20-2000	1875	1875	1875	1875	1875
4-10-2000	1875	1879	1879	1879	1879
4-21-2000	1880	1880	1880	1880	1880
4-20-2000	1885	1885	1885	1885	1885
5-2-2000	1885	1890	1885	1885	1890
5-3-2000	1885	FULL	1890	1890	FULL
5-4-2000	1885	FULL	FULL	FULL	FULL
5-10-2000	FULL	FULL	FULL	FULL	FULL
5-12-2000	1880	1880	1880	1880	1880
5-17-2000	1890	1890	1890	1890	1890
5-22-00	FULL	FULL	FULL	FULL	FULL
6-12-00	1890	1890	1890	1890	1890
6-14-00	1890	1890	1890	1890	FULL
6-15-00	1890	FULL	1890	1890	FULL
6-16-00	FULL	FULL	FULL	FULL	FULL
7-1-00	FULL	1890	1890	FULL	1890
7-7-00	1890	1890	1890	1890	1890
7-12-00	1880	1880	1880	1880	1880
7-15-00	1875	1875	1875	1875	1875
7-26-00	1874	1870	1870	1874	1870
7-29-00	1870	1870	1870	1870	1870
7-31-00	1865	1865	1865	1865	1865
8-19-00	1864	1864	1864	1864	1864
9-6-00	1865	1865	1865	1865	1865 / 62+50%
9-16-00	1864	1864	1864	1864	1864 / 62+%
10-2-00	1867	1867	1867	1867	1864 / 62+%
10-16-00	FULL	1867	1867	FULL	1864 / 62+%

U.S. BOARD OF WATER COMMISSIONERS
WALKER RIVER SYSTEM

DECREED RIGHT PRIORITIES SERVED

UNITED STATES DISTRICT COURT OF NEVADA
CASE IN EQUITY No. C-125
JIM SHAW
CHIEF DEPUTY WATER COMMISSIONER
WALKER RIVER SYSTEM, YERINGTON, NEVADA

YEAR - 2003:

DATE		EAST FORK	WEST FORK	TUNNEL SECTION	MAIN RIVER	ANTELOPE VALLEY
March	1	Full	Full	Full	Full	Full
	19	1874	1874	1874	1874	1874
	24	1871	1871	1871	1871	1871
	26	1870	1868	1868	1870	1868
	31	1873	1869	1869	1873	1869
April	9	1867	1865	1865	1867	1865
	16	1873	1872	1872	1873	1872
	19	1869	1869	1869	1869	1869
	23	1869	1866	1869	1869	1866
	24	1869	1866	1866	1869	1866
May	15	1869	1872	1866	1866	1872
	16	1869	1878	1872	1872	1878
	17	1874	1878	1878	1878	1878
	20	1874	1880	1878	1878	1882
	21	1876	1882	1880	1880	1882
	22	1876	1882	1882	1882	1882
	23	1876	Full	1890	1890	Full
	24	1890	Full	Full	Full	Full
	27	Full	Full	Full	Full	Full
June	30	1897	1897	1897	1897	1897
July	3	1890	1897	1897	1897	1897
	5	1883	1888	1888	1888	1888
	7	1883	1884	1884	1884	1884
	9	1875	1875	1875	1875	1875
	12	1874	1870	1874	1874	1870
	16	1870	1870	1870	1870	1870
	17	1870	1863	1870	1870	1863
	18	1869	1863	1863	1869	1863
	21	1869	1863	1863	1869	1869
	22	1869	1869	1863	1869	1869
	23	1869	1869	1869	1869	1869
	29	1869	1866	1869	1869	1866
	30	1869	1866	1866	1869	1866
August	12	1869	1863	1863	1869	1863 + 20%
	16	1864	1863	1863	1864	1863
Sept.	4	1864	1862 + 60%	1863	1864	1862 + 60%
	5	1864	1862 + 60%	1862 + 60%	1864	1862 + 60%
	11	**Bridgeport Valley to 1859**				

U.S. BOARD OF WATER COMMISSIONERS
WALKER RIVER SYSTEM

DECREED RIGHT PRIORITIES SERVED

UNITED STATES DISTRICT COURT OF NEVADA
CASE IN EQUITY No. C-125
JIM SHAW
CHIEF DEPUTY WATER COMMISSIONER
WALKER RIVER SYSTEM, YERINGTON, NEVADA

YEAR - 2003:

DATE		EAST FORK	WEST FORK	TUNNEL SECTION	MAIN RIVER	ANTELOPE VALLEY
Sept.	17	1864	1862	1862 + 60%	1864	1862 + 60%
	18	1865	1862	1862	1865	1862 + 60%
	24	1865	1862	1862	1865	1862 + 20%
	26	1864 + 30%	1862	1862	1864 + 30%	1862
October	6	1864 + 80%	1862	1862	1864 + 80%	1862
	9	1865	1862	1862	1865	1862
	24	1865	1863	1863	1865	1862

(156) (43)

U.S. BOARD OF WATER COMMISSIONERS
WALKER RIVER SYSTEM

DECREED RIGHT PRIORITIES SERVED

UNITED STATES DISTRICT COURT OF NEVADA
CASE IN EQUITY No. C-125
JIM SHAW
CHIEF DEPUTY WATER COMMISSIONER
WALKER RIVER SYSTEM, YERINGTON, NEVADA

YEAR - 2002:

DATE		EAST FORK	WEST FORK	TUNNEL SECTION	MAIN RIVER	ANTELOPE VALLEY
March	1	Full	Full	Full	Full	Full
	15	1870	1870	1870	1870	1870
April	8	1867	1873	1873	1873	1873
	10	1867	1874	1874	1874	1874
	12	1867	1877	1877	1877	1877
	13	1863	1878	1878	1878	1878
	16	1863	1880	1880	1880	1880
	18	1867	1889	1889	1889	1889
	22	1867	1882	1882	1882	1882
	26	1867	1875	1875	1875	1875
May	6	1867	1872	1872	1872	1875
	11	1867	1878	1878	1878	1878
	17	1867	Full	Full	Full	Full
	20	1874	Full	Full	Full	Full
	25	1875	Full	Full	Full	Full
June	1	1880	Full	Full	Full	Full
	3	Full	Full	Full	Full	Full
	13	Full	1890	1890	1890	1890
	17	1897	1890	1890	1890	1890
	19	1887	1890	1890	1890	1890
	21	1880	1890	1890	1890	1890
	26	1890	1890	1890	1890	1890
July	3	1890	1880	1880	1880	1880
	6	1880	1875	1875	1875	1875
	8	1875	1873	1873	1873	1873
	10	1869	1869	1869	1869	1869
	12	1869	1864	1869	1869	1864
	13	1869	1864	1864	1869	1864
	19	1867	1863 + 50%	1863 + 50%	1867	1863 + 50%
	25	1867	1863	1863	1867	1863
	26	1864 + 40%	1863	1863	1864 + 40%	1863
August	3	1862	1862	1862	1862	1862
	17	1859	1859	1859	1859	1859
October	10	1865	1859	1859	1865	1859
	15	1865	1862	1862	1865	1862

U.S. BOARD OF WATER COMMISSIONERS
WALKER RIVER SYSTEM

DECREED RIGHT PRIORITIES SERVED

UNITED STATES DISTRICT COURT OF NEVADA
CASE IN EQUITY No. C-125
ROGER E. BEZAYIFF
CHIEF DEPUTY WATER COMMISSIONER
WALKER RIVER SYSTEM, YERINGTON, NEVADA

YEAR - 2001:

DATE		EAST FORK	WEST FORK	TUNNEL SECTION	MAIN RIVER	ANTELOPE VALLEY
March	1	Full	Full	Full	Full	Full
	21	1870	1870	1870	1870	1870
	26	1875	1875	1875	1875	1875
April	6	1870	1870	1870	1870	1870
	12	1873	1873	1873	1873	1873
	25	1873	1873	1873	1873	1875
	26	1873	1875	1873	1873	1880
	27	1875	1880	1875	1875	1880
	28	1880	1880	1880	1880	1880
May	3	1880	1899	1899	1899	1899
	7	1880	1899	1899	1899	Full
	8	1880	Full	1899	1899	Full
	9	1880	Full	Full	Full	Full
	11	1894	Full	Full	Full	Full
	14	Full	Full	Full	Full	Full
	31	Full	1890	1890	Full	1890
June	6	1890	1880	1880	1890	1880
	11	1880	1880	1880	1880	1880
	16	1875	1875	1875	1875	1875
	20	1870	1870	1870	1870	1870
	25	1865	1865	1865	1865	1865
July	11	1865	1863	1863	1865	1863
	23	1864	1862	1862	1864	1862
	30	1862	1862	1862	1862	1862
	31	1862	1859	1859	1862	1859
August	3	1859	1859	1859	1859	1859
October	10	1863	1863	1863	1863	1863
	18	1865	1863	1863	1865	1863

U.S. BOARD OF WATER COMMISSIONERS
WALKER RIVER SYSTEM

DECREED RIGHT PRIORITIES SERVED

UNITED STATES DISTRICT COURT OF NEVADA
CASE IN EQUITY No. C-125
ROGER E. BEZAYIFF
CHIEF DEPUTY WATER COMMISSIONER
WALKER RIVER SYSTEM, YERINGTON, NEVADA

YEAR - 2000:

DATE		EAST FORK	'63	WEST FORK	'90	TUNNEL SECTION	MAIN RIVER	ANTELOPE VALLEY
March	1	Full		Full		Full	Full	Full
	20	1875		1875		1875	1875	1875
April	10	1875		1879		1879	1879	1879
	26	1880	30	1880		1880	1880	1880
	29	1885		1885		1885	1885	1885
May	2	1885		1890		1885	1885	1890
	3	1885		Full		1890	1890	Full
	4	1885		Full	10	Full	Full	Full
	10	Full	31	Full		Full	Full	Full
	12	1880		1880		1880	1880	1880
	17	1890		1890		1890	1890	1890
	22	Full		Full	15	Full	Full	Full
June	12	1890		1890		1890	1890	1890
	14	1890	30	1890	30	1890	1890	Full
	15	1890		Full		1890	1890	Full
	16	Full		Full		Full	Full	Full
July	1	Full		1890		1890	Full	1890
	7	1890		1890	11	1890	1890	1890
	12	1880		1880		1880	1880	1880
	15	1875	31	1875		1875	1875	1875
	26	1874		1870		1870	1874	1870
	29	1870		1870		1870	1870	1870
	31	1865		1865		1865	1865	1865
August	19	1864	31	1864		1864	1864	1864
Sept.	6	1865		1865		1865	1865	1862 + %
	16	1864	30	1864		1864	1864	1862 + %
October	2	1867		1867		1867	1867	1862 + %
	16	Full		1867		1867	Full	1862 + %

183 66

U.S. BOARD OF WATER COMMISSIONERS
WALKER RIVER SYSTEM

DECREED RIGHT PRIORITIES SERVED

UNITED STATES DISTRICT COURT OF NEVADA
CASE IN EQUITY No. C-125
ROGER E. BEZAYIFF
CHIEF DEPUTY WATER COMMISSIONER
WALKER RIVER SYSTEM, YERINGTON, NEVADA

YEAR - 1999:

DATE		EAST FORK	'63	WEST FORK	'90	TUNNEL SECTION	MAIN RIVER	ANTELOPE VALLEY
March	1	Full & Flood		Full & Flood		Full & Flood	Full & Flood	Full & Flood
	28	Full		Full		Full	Full	Full
April	1	1880	30	1880		1880	1880	1880
	5	1875		1875		1875	1875	1875
	19	Full & Flood	31	Full & Flood	12	Full & Flood	Full & Flood	Full & Flood
July	6	Full	30	Full	31 30	Full	Full	Full
	12	Full		1890	16	1890	Full	1890
	17	Full	31	1880		1880	Full	1880
	22	1880		1875		1875	1880	1875
	29	1875		1875		1875	1875	1875
August	25	1870	31	1870		1870	1870	1870
Sept.	29	1890	30	1890	2	1890	1890	1890
October	16	Full		Full		Full	Full	Full
			(183)		(91)			

U. S. BOARD OF WATER COMMISSIONERS
WALKER RIVER SYSTEM

DECREED RIGHT PRIORITIES SERVED

UNITED STATES DISTRICT COURT OF NEVADA
CASE IN EQUITY NO. C-125
ROGER E. BEZAYIFF
CHIEF DEPUTY WATER COMMISSIONER
WALKER RIVER SYSTEM, YERINGTON, NEVADA

Year - 1998:

DATE		EAST FORK '63	WEST FORK '90	TUNNEL SECTION	MAIN RIVER	ANTELOPE VALLEY
March	01	Full	Full	Full	Full	Full
April	07	Full & Flood 30	Full & Flood 30	Full & Flood	Full & Flood	Full & Flood
August	05	Full & Flood 31	Full 31	Full	Full & Flood	Full
	08	Full	Full 30	Full	Full	Full
	24	1890 31	1890 31	1890	1890	1890
	29	1880	1880 28	1880	1880	1880
Sept	17	Full 30	Full 14	Full	Full	Full
		(183)	(164)			

U. S. BOARD OF WATER COMMISSIONERS
WALKER RIVER SYSTEM

DECREED RIGHT PRIORITIES SERVED

UNITED STATES DISTRICT COURT OF NEVADA
CASE IN EQUITY NO. C-125
ROGER E. BEZAYIFF
CHIEF DEPUTY WATER COMMISSIONER
WALKER RIVER SYSTEM, YERINGTON, NEVADA

Year - 1997:

DATE		EAST FORK	WEST FORK	TUNNEL SECTION	MAIN RIVER	ANTELOPE VALLEY
March	01	Full	Full	Full	Full	Full
	19	Full & Flood	Full & Flood	Full & Flood	Full & Flood	Full & Flood
June	30	Full	Full	Full	Full	Full
July	1	Full	1890	1890	Full	1890
	9	Full	Full	Full	Full	Full
	17	Full	1890	1890	Full	1890
	23	1895	1880	1880	1895	1880
August	1	Full	1880	1880	Full	1880
	20	1895	1880	1880	1895	1880
	22	1880	1880	1880	1880	1880
	23	1875	1875	1875	1875	1875
September						
	2	1874	1874	1874	1874	1874
	27	1880	1880	1880	1880	1880
October	2	Full	Full	Full	Full	Full

U. S. BOARD OF WATER COMMISSIONERS
WALKER RIVER SYSTEM

DECREED RIGHT PRIORITIES SERVED

UNITED STATES DISTRICT COURT OF NEVADA
CASE IN EQUITY NO. C-125
ROGER E. BEZAYIFF
CHIEF DEPUTY WATER COMMISSIONER
WALKER RIVER SYSTEM, YERINGTON, NEVADA

Year - 1996:

DATE		EAST FORK '63	WEST FORK '90	TUNNEL SECTION	MAIN RIVER	ANTELOPE VALLEY
March	01	Full	Full	Full	Full	Full
April	01	Full & Flood	Full & Flood	Full & Flood	Full & Flood	Full & Flood
	09	Full	Full	Full	Full	Full
	15	Full & Flood	Full & Flood	Full & Flood	Full & Flood	Full & Flood
June	26	Full & Flood	Full & Flood	Full & Flood	Full & Flood	Full
	27	Full & Flood	Full	Full & Flood	Full & Flood	Full
	28	Full	Full	Full	Full	Full
July	22	Full	1885	1885	Full	1885
	29	1890	1880	1880	1890	1880
August	05	1885	1880	1880	1885	1880
	07	1879	1875	1875	1879	1875
	09	1875	1875	1875	1875	1875
September						
	05	1870	1870	1870	1870	1870
	23	1880	1880	1880	1880	1880
October	19	Full	Full	Full	Full	Full

30 31 30 31 30 21 31 30

(183) (112)

U. S. BOARD OF WATER COMMISSIONERS
WALKER RIVER SYSTEM

DECREED RIGHT PRIORITIES SERVED

UNITED STATES DISTRICT COURT OF NEVADA
CASE IN EQUITY NO. C-125
ROGER E. BEZAYIFF
CHIEF DEPUTY WATER COMMISSIONER
WALKER RIVER SYSTEM, YERINGTON, NEVADA

Year - 1995:

DATE		EAST FORK	'63	WEST FORK	'90	TUNNEL SECTION	MAIN RIVER	ANTELOPE VALLEY
March	01	Full		Full		Full	Full	Full
			30		30			
May	01	Full & Flood	31	Full & Flood	31	Full & Flood	Full & Flood	Full & Flood
			30		30			
August	14	Full	31	Full	31	Full	Full	Full
	16	Full		1890	31	1890	Full	1890
	29	Full	31	Full		Full	Full	Full
					12			
September	13	1890		1880		1880	1890	1880
	15	1885	30	1875		1875	1885	1875
	23	1885		1885		1885	1885	1885
October	07	Full		1885		1885	Full	1885
	09	Full		Full		Full	Full	Full
			(183)		(165)			

U. S. BOARD OF WATER COMMISSIONERS
WALKER RIVER SYSTEM

DECREED RIGHT PRIORITIES SERVED

UNITED STATES DISTRICT COURT OF NEVADA
CASE IN EQUITY NO. C-125
ROGER E. BEZAYIFF
CHIEF DEPUTY WATER COMMISSIONER
WALKER RIVER SYSTEM, YERINGTON, NEVADA

Year - 1994:

DATE		EAST FORK '63	WEST FORK '90	TUNNEL SECTION	MAIN RIVER	ANTELOPE VALLEY
March	01	Full	Full	Full	Full	Full
	18	1874	1869	1869	1874	1862 + %
	23	1873	1873	1873	1873	1862 + %
	28	1869	1869	1869	1869	1862 + %
April	18	1869	1871	1871	1871	1871
	20	1870 30	1876	1876	1876	1876
	21	1870	1880	1880	1880	1880
	25	1870	1874	1874	1874	1874
	29	1867	1874	1874	1874	1874
May	10	1867	1877	1877	1874	1882
	11	1867	1882	1882	1877	1895
	12	1867	1895	1895	1882	1902
	13	1867 31	1914 20	1914	1895	1902
	14	1875	1914	1914	1914	1902
	16	1875	1914	1914	1914	1902
	19	1874	1914	1914	1914	1902
	24	1875	1914	1914	1914	1902
June	04	1917	1914	1914	1914	1902
	07	1917	1890 7	1890	1914	1890
	08	1890 30	1875	1875	1890	1875
	09	1875	1875	1875	1875	1875
	11	1875	1875	1875	1875	1879
	13	1879	1879	1879	1879	1879
	20	1875	1875	1875	1875	1875
	23	1873	1873	1873	1873	1873
	24	1870	1870	1870	1870	1870
	25	1868	1868	1868	1868	1868
	29	1865	1865	1865	1865	1865
	30	1864 + 50%	1865	1865	1865	1865
July	01	1863	1865	1865	1865	1865
	05	1863 11	1863	1863	1863	1863
	12	1862 + 50%	1862 + 50%	1862 + 50%	1862 + 50%	1862 + 50%
	14	1862	1862	1862	1862	1862
	21	1859	1859	1859	1859	1859
September	23	1863 8	1863	1863	1863	1863
October	04	Full	Full	Full	Full	Full

(110) (27)

U.S. BOARD OF WATER COMMISSIONERS
WALKER RIVER SYSTEM

YEAR 1993:

DATE	E. WALKER '63		W. WALKER '90		TUNNEL	MAIN RIVER	ANTELOPE
March 1	Full		Full		Full	Full	Full
April 12	Full		1880		1880	Full	1880
April 14	1880	30	1880		1880	1880	1880
April 21	1875		1875		1875	1875	1875
April 28	1875		1875		1875	1875	1890
April 29	1875		1890	2	1875	1875	1890
April 30	1875		1890		1890	1890	1890
May 4	1875		Full		1890	1890	Full
May 5	Full	31	Full		Full	Full	1890
May 6	Full		1890	31	Full	Full	1890
May 7	1890		1890		1890	1890	1890
May 10	1890		1890		1890	1890	Full
May 12	Full	30	Full	30	Full	Full	Full
July 15	Full		Full		Full	Full	Full
July 16	Full		Full		Full	Full	1890
July 17	Full	31	1890	18	1890	Full	1890
July 19	Full		1885		1885	Full	1885
July 20	Full		1885		1885	Full	1880
July 21	1890		1880		1880	1890	1880
July 24	1880		1880		1880	1880	1880/78
July 29	1885		1880		1880	1885	1880/78
August 2	1885		1878		1878	1885	1878
August 4	1885	31	1878		1878	1885	1877
August 5	1885		1877		1877	1885	1877
August 7	1880		1877		1877	1880	1877
August 11	1877		1873		1873	1877	1873
August 13	1875		1870		1870	1875	1870
August 19	1873		1868		1868	1873	1868
August 20	1870		1865		1865	1870	1865
August 23	1870		1865		1865	1870	1864
September 1	1865	30	1865		1865	1865	1865
September 23	1870		1865		1865	1870	1862 + 80%
October 15	Full		1865		1865	Full	1862 +
October 20	Full		Full		Full	Full	Full

(183) (81)

DECREED RIGHT PRIORITIES SERVED

UNITED STATES DISTRICT COURT OF NEVADA
CASE IN EQUITY NO. C-125
ROGER E. BEZAYIFF
CHIEF DEPUTY WATER COMMISSIONER
WALKER RIVER SYSTEM, YERINGTON, NEVADA

U.S. BOARD OF WATER COMMISSIONERS
WALKER RIVER SYSTEM

YEAR 1992:

DATE	E. WALKER '63	SMITH VAL. '90	TUNNEL	MAIN RIVER	ANTELOPE
March 1	Full	Full	Full	Full	Full
March 9	1865	1863	1863	1865	1863
March 10	1870	1863	1863	1870	1863
March 23	1865	1863	1863	1865	1863
March 27	1865	1864	1864	1865	1863
March 28	1865	1865	1865	1865	1863
April 1	1865	1865	1865	1865	1863 + 50%
April 3	1865	1870	1865	1865	1870
April 4	1865 30	1870	1870	1870	1870
April 16	1865	1872	1872	1872	1872
April 18	1864 + 40%	1872	1872	1872	1872
April 21	1864 + 40%	1872	1875	1875	1875
April 22	1864 + 40%	1875	1875	1875	1875
April 27	1864 + 40%	1875	1875	1875	1880
April 28	1864 + 40%	1880	1880	1875	1880
April 29	1864 + 40%	1880	1880	1880	1880
May 7	1864 + 40%	1880	1880	1880	1890
May 8	1864 + 40%	1890	1890	1880	1890
May 9	1865	1890	1890	1890	1890
May 13	1874 31	1890 10	1890	1890	1890
May 16	1874	1890	1890	1890	1878
May 18	1865	1878	1878	1878	1878
May 23	1865	1878	1878	1878	1870
May 26	1865	1870	1870	1870	1870
May 29	1865	1870	1870	1870	1875
May 30	1865	1875	1875	1870	1870
June 1	1865	1870	1870	1870	1870
June 8	1865 30	1865	1865	1865	1865
June 10	1870	1865	1865	1865	1865
June 13	1865	1865	1865	1865	1865
June 15	1865	1865	1865	1865	1864
June 16	1865	1865	1865	1865	1865
June 19	1865	1865	1865	1865	1863 + 90%
June 20	1865	1865	1865	1865	1863 + 50%
June 22	1865	1863	1863	1865	1863 + 50%
June 23	1865	1863	1863	1865	1863 + 40%
June 29	1863 + 50% 7	1863	1863	1863 + 50%	1863
July 8	1863 + 50%	1862	1862	1863 + 50%	1862
July 9	1862	1862	1862	1862	1862
August 10	1859	1859	1859	1859	1859
October 16	1864 + 50%	1862 + 50%	1862 + 50 %	1864 + 50%	1862 + 50 %
	(98)	(10)			

DECREED RIGHT PRIORITIES SERVED

UNITED STATES DISTRICT COURT OF NEVADA
CASE IN EQUITY NO. C-125
ROGER E. BEZAYIFF
CHIEF DEPUTY WATER COMMISSIONER
WALKER RIVER SYSTEM, YERINGTON, NEVADA

U.S. BOARD OF WATER COMMISSIONERS
WALKER RIVER SYSTEM

YEAR 1991:

DATE	E. WALKER '63	W. WALKER '90	TUNNEL	MAIN RIVER	ANTELOPE
March 1	1865	1865	1865	1865	1862 + 60%
March 4	1868	1868	1868	1868	1862 + 60%
March 5	Full	Full	Full	Full	Full
March 11	1868	1868	1868	1868	1862 + 60%
March 26	1869 + 20%	1869 + 20%	1869 + 20%	1869 + 20%	1862 + 60%
March 28	1869 + 60%	1869 + 60%	1869 + 60%	1869 + 20%	1862 + 60%
April 1	1870	1870	1870	1870	1862 + 60%
April 9	1870	1870	1870	1870	1863 + 60%
April 11	1864 + 60%	1870	1870	1870	1863 + 60%
April 12	1864 + 60% 30	1864 + 60%	1864 + 60%	1870	1863 + 60%
April 13	1864 + 60%	1864 + 60%	1864 + 60 %	1864 + 60%	1863 + 60%
April 16	1864 + 60%	1864 + 60%	1864 + 60%	1864 + 60%	1863 + 90%
April 17	1864 + 60%	1863 + 80%	1863 + 80%	1864 + 60%	1863 + 80%
April 24	1864 + 40%	1863 + 80%	1863 + 80%	1864 + 40%	1863 + 80%
April 25	1864 + 40%	1864	1864	1864 + 40%	1864
May 1	1864 + 40%	1869	1869	1868	1869 + 50%
May 2	1864 + 40%	1869	1869	1869	1869 + 50%
May 3	1864 + 40%	1868	1868	1868	1868
May 4	1864 + 60%	1868	1868	1868	1868
May 5	1864 + 60%	1868	1868	1868	1868
May 6	1864 + 80% 31	1868	1868	1868	1878
May 7	1864 + 80%	1873	1873	1868	1878
May 8	1864 + 80%	1878	1878	1873	1890
May 9	1864 + 70%	1878	1878	1876	1890
May 10	1864 + 50%	1878	1878	1878	1876
May 11	1864 + 50%	1874	1874	1878	1877
May 13	1864 + 70	1870	1870	1878	1870
May 14	1864 + 70%	1872	1872	1872	1869 + 50%
May 16	1864 + 50%	1872	1872	1872	1877 + 50%
May 17	1864 + 50%	1879	1879	1872	1879 + 50%
May 18	1864 + 50%	1879	1879	1879	1876
May 21	1864 + 50%	1876	1876	1879	1872
May 22	1864 + 50%	1876	1876	1879	1876
May 23	1864 + 50%	1879	1879	1879	1885
May 24	1864 + 70%	1885	1885	1876	Full
May 25	1864 + 70%	Full	Full	Full	Full
May 27	1865	Full	Full	Full	Full
May 28	1869 + 70%	Full	Full	Full	Full
May 30	1869 + 90%	Full 7	Full	Full	Full
May 31	1874	Full	Full	Full	Full
June 1	1874 + 50%	1890	1890	1880	1878
June 3	1874 + 90%	Full	Full	Full	Full

DECREED RIGHT PRIORITIES SERVED

UNITED STATES DISTRICT COURT OF NEVADA
CASE IN EQUITY NO. C-125
JIM WEISHAUPT
CHIEF DEPUTY WATER COMMISSIONER
WALKER RIVER SYSTEM, YERINGTON, NEVADA

U.S. BOARD OF WATER COMMISSIONERS
WALKER RIVER SYSTEM

YEAR 1991 (CONTINUED):

DATE	E. WALKER '63	W. WALKER '90	TUNNEL	MAIN RIVER	ANTELOPE
June 4	1874 + 90%	Full	Full	Full	Full
June 5	1879 + 20%	Full	Full	Full	Full
June 6	1884 + 50%	Full	Full	Full	Full
June 7	1888	Full	Full	Full	Full
June 14	1894	Full	Full	Full	Full
June 15	Full 30	Full 20	Full	Full	Full
June 20	Full	1890	1890	Full	1885
June 21	1895	1879	1879	1890	1879
June 22	1883	1875	1875	1879	1875
June 24	1875	1875	1875	1875	1875
June 25	1874 + 50%	1875	1875	1875	1875
July 1	1879 + 80%	1879	1879	1879	1875
July 2	1879 + 80%	1879	1879	1880	1875
July 3	1880	1880	1880	1880	1880
July 6	1879 + 70%	1880	1880	1880	1880
July 8	1874 + 50% 31	1879	1879	1879	1880
July 9	1874 + 50%	1876	1876	1879	1870
July 10	1874 + 50%	1874	1874	1876	1870
July 11	1874	1870	1870	1874	1870
July 12	1874	1870	1870	1870	1869
July 13	1869 + 50%	1869 + 50%	1869 + 50%	1869 + 50%	1869
July 15	1869	1869	1869	1869	1869
July 17	1869	1864	1864	1864	1864
July 18	1864	1864	1864	1864	1864
July 19	1864 + 50%	1864	1864	1864	1864
July 26	1864 + 50%	1864	1864	1864	1863 + 60%
July 27	1864	1864	1864	1864	1864
July 31	1864	1864	1864	1864	1863 + 40%
August 1	1864	1863 + 60%	1863 + 60%	1864	1863 + 60%
August 2	1864	1863 + 40%	1863 + 40%	1864	1863 + 40%
August 3	1864	1863 + 20%	1863 + 20%	1864	1863 + 20%
August 5	1864 9	1863	1863	1863	1863
August 9	1864	1863	1863	1863	1862 + 80%
August 10	1862 + 40%	1862 + 40%	1862 + 40%	1862 + 40%	1862 + 40%
August 13	1862	1862	1862	1862	1862
August 15	1862	1862	1862	1867 + 50%	1862
August 16	1863	1863	1863	1862 + 20%	1862 + 60%
August 19	1864 + 50% 5	1863	1863	1863	1862 + 20%
August 21	1862 + 50%	1862 + 50%	1862 + 50%	1862 + 50%	1862 + 50%
August 26	1862 + 50%	1862 + 50%	1862 + 50%	1862 + 50%	1862 + 30%
August 27	1862 + 30%	1862 + 30%	1862 + 30%	1862 + 30%	1862 + 20%
September 14	1864 + 10%	1862 + 40%	1862 + 40%	1864 + 10%	1862 + 40%
September 21	1864 + 50%	1862 + 50%	1862 + 50%	1864 + 50%	1862 + 50%

DECREED RIGHT PRIORITIES SERVED

UNITED STATES DISTRICT COURT OF NEVADA
CASE IN EQUITY NO. C-125
JIM WEISHAUPT
CHIEF DEPUTY WATER COMMISSIONER
WALKER RIVER SYSTEM, YERINGTON, NEVADA

...S. BOARD OF WATER COMMISSIONE...
WALKER RIVER SYSTEM

YEAR 1990:

DATE	E.WALKER '63	W.WALKER '90	TUNNEL	MAIN RIVER	ANTELOPE
28-Mar	1870	1865	1865	1870	1865
29-Mar	1869+80%	1865	1865	1869+80%	1865
3-Apr	1867+80%	1870	1870	1870	1870
5-Apr	1867+80%	1874	1874	1870	1874
6-Apr	1867+80%	1874	1874	1874	1874
12-Apr	1867+20%	1874	1874	1874	1874
17-Apr	1867+20%	1876	1876	1874	1876
18-Apr	1867+20%	1876	1876	1876	1876
21-Apr	1867+20%	1877	1877	1876	1877
23-Apr	1867+20%	1877	1877	1877	1877
28-Apr	1867+20%	1874	1874	1874	1874
30-Apr	1867+80%	1874	1874	1874	1874
2-May	1867+80%	1877	1877	1877	1877
4-May	1867+60%	1879	1879	1877	1879
5-May	1867	1882	1882	1877	1880
6-May	1867	1882	1882	1882	1882
7-May	1867	1890	1890	1885	1890
15-May	1867+80%	1880	1880	1880	1880
21-May	1867+50%	1877	1877	1877	1877
22-May	1867+50%	1874	1874	1877	1874
23-May	1867+50%	1874	1874	1874	1874
24-May	1867+80%	1874	1874	1874	1874
26-May	1867+60%	1874	1874	1874	1874
28-May	1867+90%	1874	1874	1874+60%	1874
29-May	1872	1874	1874	1874+60%	1874
2-Jun	1867+60%	1874	1874	1874	1871
4-Jun	1867+60%	1871	1871	1871	1874
6-Jun	1867	1874	1874	1874	1879
7-Jun	1867	1879	1879	1879	1880
9-Jun	1867	1879	1879	1879	1885
11-Jun	1870	1883	1883	1883	1879
12-Jun	1870	1879	1879	1879	1876
13-Jun	1874	1876	1876	1876	1874
14-Jun	1874+70%	1876	1876	1876	1873
15-Jun	1874+70%	1876	1876	1876	1873
16-Jun	1874+70%	1874	1874	1874	1873
18-Jun	1874+70%	1873	1873	1873	1873
20-Jun	1874	1873	1873	1873	1873
22-Jun	1873	1872	1872	1872	1872
25-Jun	1873	1873	1873	1873	1872

28
31
9
30

DECREE RIGHT PRIORITIES

UNITED STATES DISTRICT COURT OF NEVADA
CASE IN EQUITY NO. C-125
JIM WEISHAUPT
CHIEF DEPUTY WATER COMMISSIONER
WALKER RIVER SYSTEM, YERINGTON, NEVADA

U.S. BOARD OF WATER COMMISSIONERS
WALKER RIVER SYSTEM

YEAR 1990:

DATE	E.WALKER	W.WALKER '63 '90	TUNNEL	MAIN RIVER	ANTELOPE
26-Jun	1867+60%	1873	1873	1873	1872
27-Jun	1867+60%	1872	1872	1872	1872
28-Jun	1863+60%	1870	1870	1870	1870
29-Jun	1863+60%	1869	1869	1869	1869
5-Jul	1863+20%	1869	1869	1867+70%	1867+70%
6-Jul	1863+20%	1863+70%	1863+70%	1863+70%	1863+70%
9-Jul	1863+20%	1863	1863	1863	1863
14-Jul	1867+20%	1864	1864	1864	1864
16-Jul	1867+20%	1864	1864	1864	1864
17-Jul	1867+20%	1864	1864	1864	1864
18-Jul	1867+20%	1868	1868	1868	1868
19-Jul	1870	1868	1868	1868	1868
24-Jul	1870	26 1863	1863	1863	1863
25-Jul	1870	1863	1863	1863	1863
26-Jul	1870	1862+80%	1862+80%	1863	1862+80%
27-Jul	1870	1862+80%	1862+80%	1862+80%	1862+80%
28-Jul	1863+80%	1862+80%	1862+80%	1862+80%	1862+80%
1-Aug	1863+50%	1862+80%	1862+80%	1862+80%	1862+60%
2-Aug	1863+50%	1862+60%	1862+60%	1862+60%	1862+60%
3-Aug	1862+60%	1862+60%	1862+60%	1862+60%	1862+20%
4-Aug	1862+20%	1862+20%	1862+20%	1862+20%	1862+20%
8-Aug	1862+20%	1862+20%	1862+20%	1862+20%	1862+20%
13-Aug	1864+30%	1862+20%	1862+20%	1864+30%	1862+20%
14-Aug	1864+80%	1862+20%	1862+20%	1864+80%	1862+20%
16-Aug	1864+80%	1862+20%	1862+20%	1864+80%	1862+80%
17-Aug	1864+80%	1862+80%	1862+80%	1864+80%	1862+80%
21-Aug	1865	1862+80%	1862+80%	1865	1862+60%
24-Aug	1864+60%	1862+80%	1862+80%	1864+60%	1862+60%
25-Aug	1864+40%	1862+80%	1862+80%	1864+40%	1862+60%
27-Aug	1864+20%	1862+80%	1862+80%	1864+20%	1862+60%
29-Aug	1863	1862+80%	1862+80%	1863	1862+40%
1-Sep	1862+40%	1862+40%	1862+40%	1862+40%	1862+40%
5-Sep	1862+40%	1862+40%	1862+40%	1862+40%	1862+10%
6-Sep	1862+40%	1862+10%	1862+10%	1862+40%	1862+10%
10-Sep	1862+40%	1862+10%	1862+10%	1862+40%	1861+90%
11-Sep	1862+40%	1861+90%	1861+90%	1862+40%	1861+90%
14-Sep	1859	1859	1859	1859	1859
25-Sep	1863+20%	1862	1862	1863+20%	1862
27-Sep	1863+80%	4 1863	(9) 1863	1863+80%	1862

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DECREE RIGHT PRIORITIES

UNITED STATES DISTRICT COURT OF NEVADA
CASE IN EQUITY NO. C-125
JIM WEISHAUPT
CHIEF DEPUTY WATER COMMISSIONER
WALKER RIVER SYSTEM, YERINGTON, NEVADA

U.S. BOARD OF WATER COMMISSIONERS
WALKER RIVER SYSTEM

YEAR 1989:

DATE	E. WALKER '63	W. WALKER '90	TUNNEL	MAIN RIVER	ANTELOPE
March 1	Full	Full	Full	Full	Full
March 23	1874	Full	Full	Full	Full
March 24	1874	1874	1874	1874	1874
March 29	1873 + 50%	1873 + 50%	1873 + 50%	1873 + 50%	1873 + 50%
March 30	1868	1868	1868	1868	1868
April 3	1869	1869	1869	1869	1869
April 7	1869	1873	1873	1870	1874
April 8	1869	1877	1877	1873	1877
April 10	1869	1878	1878	1878	1880
April 11	1869	1884	1884	1880	1885
April 12	1863 + 70%	1885	1885	1885	1885
April 13	1865	1885	1885	1885	1885
April 14	1867 + 80%	1885	1885	1885	1885
April 15	1867 + 80%	1881	1881	1881	1882
April 17	1867 + 80%	1881	1881	1881	1882
April 18	1874 30	1884	1884	1881	1884
April 19	1874	1884	1884	1884	1884
April 20	1874 + 40%	1884	1884	1884	1884
April 21	1874 + 40%	1890	1890	1884	1895
April 22	1874 + 40%	1890 4	1890	1890	1878
April 24	1874 + 40%	1890	1890	1890	1872
April 25	1873 + 60%	1876	1876	1876	1870
April 26	1867 + 20%	1878	1878	1878	1869
April 28	1870	1878	1878	1878	1868
April 29	1872	1878	1878	1878	1868
May 1	1872	1878	1878	1878	1869
May 2	1872	1878	1878	1878	1876
May 4	1872	1878	1890	1878	1878
May 5	1872	Full	Full	1890	Full
May 6	1872	Full	Full	1890	Full
May 7	1872	Full	Full	Full	Full
May 9	1874 + 40%	Full	Full	Full	Full
May 10	1875	Full	Full	Full	Full
May 11	1880 31	Full	Full	Full	Full
May 12	Full	Full	Full	Full	1884

DECREED RIGHT PRIORITIES SERVED

UNITED STATES DISTRICT COURT OF NEVADA
CASE IN EQUITY NO. C-125
JIM WEISHAUPT
CHIEF DEPUTY WATER COMMISSIONER
WALKER RIVER SYSTEM, YERINGTON, NEVADA

U.S. BOARD OF WATER COMMISSIONERS
WALKER RIVER SYSTEM

YEAR 1989 (CONTINUED):

DATE	E. WALKER '63	W. WALKER '90	TUNNEL	MAIN RIVER	ANTELOPE
May 13	Full	Full	Full	Full	1878
May 15	Full	1890	1890	Full	1877
May 17	Full	1880	1880	1880	1877
May 18	Full	1890	1890	1890	1886
May 20	1890	Full	Full	1895	Full
May 22	1895	Full	Full	Full	Full
May 26	1880	Full	Full	Full	1880
May 27	1880	1880	1880	1880	1880
May 29	1874 + 70%	1880	1880	1880	1880
May 30	1877	1880	1880	1880	1880
June 1	1877	1880	1880	1880	1885
June 2	1877	1885	1885	1885	1885
June 5	1877	Full	Full	1885	Full
June 6	Full	Full	Full	Full	Full
June 23	Full	Full	Full	Full	1900
June 24	Full	1900	1900	1900	1900
June 26	Full	1890	1890	1890	1890
June 27	Full	1890	1890	1890	1885
June 29	Full	1885	1885	1885	1885
July 1	1885	1885	1885	1885	1878
July 3	1878	1878	1878	1878	1878
July 5	1874	1874	1874	1874	1874
July 10	1875	1875	1875	1875	1875
July 13	1872	1872	1872	1872	1872
July 15	1871	1871	1871	1871	1871
July 17	1869	1869	1869	1869	1869
July 24	1864 + 50%	1863 + 70%	1863 + 70%	1864 + 50%	1863 + 70%
July 26	1863	1863 + 70%	1863 + 70%	1863 + 70%	1863 + 70%
July 27	1863 + 70%	1863 + 70%	1863 + 70%	1863 + 70%	1863 + 70%
August 3	1862	1862 + 40%	1862 + 40%	1862 + 40%	1862 + 40%
August 5	1862	1862 + 20%	1862 + 20%	1862 + 20%	1862 + 20%
August 9	1862	1862 + 40%	1862 + 40%	1862 + 40%	1862 + 40%
August 16	1864	1862 + 60%	1862 + 60%	1864	1862 + 60%
August 24	1869	1862 + 60%	1862 + 60%	1869	1862 + 60%
August 31	1869	1862 + 60%	1862 + 60%	1869	1862 + 20%

DECREED RIGHT PRIORITIES SERVED

UNITED STATES DISTRICT COURT OF NEVADA
CASE IN EQUITY NO. C-125
JIM WEISHAUPT
CHIEF DEPUTY WATER COMMISSIONER
WALKER RIVER SYSTEM, YERINGTON, NEVADA

U.S. BOARD OF WATER COMMISSIONERS
WALKER RIVER SYSTEM

YEAR 1989 (CONTINUED):

DATE	E. WALKER	W. WALKER	TUNNEL	MAIN RIVER	ANTELOPE
Sept. 1	1862 + 20%	1862 + 20%	1862 + 20%	1862 + 20%	1862 + 20%
Sept. 14	1862 + 20%	1862 + 20%	1862 + 20%	1862 + 20%	1862 + 40%
Spet. 15	1862 + 40%	1862 + 40%	1862 + 40%	1862 + 40%	1862 + 40%
Sept. 19	1865	1863	1863	1865	1863
Sept. 20	1867 + 50%	1863	1863	1869 + 50%	1863
Sept. 25	1870	1863	1863	1870	1862 + 80%
October 1	1870	1863	1863	1870	1863 + 70%
October 9	Full	Full	Full	Full	Full
October 21	1874	1863	1863	1874	1863

(124) (49)

DECREED RIGHT PRIORITIES SERVED

UNITED STATES DISTRICT COURT OF NEVADA
CASE IN EQUITY NO. C-125
JIM WEISHAUPT
CHIEF DEPUTY WATER COMMISSIONER
WALKER RIVER SYSTEM, YERINGTON, NEVADA

U.S. BOARD OF WATER COMMISSIONERS
WALKER RIVER SYSTEM

YEAR 1988:

DATE	E. WALKER '63	W. WALKER '90	TUNNEL	MAIN RIVER	ANTELOPE
April 29	1865	1872	1872	1872	1872
May 2	70% 1865	1870	1870	1870	1870
May 3	50% 1865	1869	1869	1869	1869
May 5	70% 1865	1868	1868	1868	1868
May 6	80% 1865	1866	1866	1866	1866
May 13	1865	1869	1869	1869	1869
May 14	1865	1884	1884	1878	1878
May 16	1865	1878	1878	1878	1882
May 17	1865	1882	1882	1882	1886
May 18	1865	1885	1885	1885	1886
May 20	1865	1878	1878	1878	1878
May 22	1865	1878	1878	1878	1884
May 23	70% 1867	1895	1895	1885	1895
May 24	70% 1867	1895	1895	1895	1895
May 27	50% 1867	1895	1895	1895	1886
May 30	80% 1867	1882	1882	1882	1882
June 1	80% 1867	1879	1879	1879	1879
June 8	1867	1874	1874	1874	1874
June 10	1867	1872	1872	1872	1872
June 15	1867	1872	1872	1872	1874
June 16	1867	1876	1876	1874	1876
June 17	1867	1876	1876	1876	1876
June 27	1870	1876	1876	1876	1876
June 30	1870	1872	1872	1872	1872
July 1	1870	1870	1870	1870	1870
July 2	1870	1869	1869	1869	1869
July 7	1867	1867	1867	1867	1864
July 8	1865	1863 + 50%	1863 + 50%	1865	1863 + 50%
July 9	1863 + 50%	1863 + 50%	1863 + 50%	1863 + 50%	1863 + 50%
July 13	1863	1863	1863	1863	1863
July 14	1862 + 50%	1862 + 50%	1862 + 50%	1862 + 50%	1862 + 50%
July 21	1862 + 30%	1862 + 30%	1862 + 30%	1862 + 30%	1862 + 30%
July 23	1862	1862	1862	1862	1862

DECREED RIGHT PRIORITIES SERVED

UNITED STATES DISTRICT COURT OF NEVADA
CASE IN EQUITY NO. C-125
JIM WEISHAUPT
CHIEF DEPUTY WATER COMMISSIONER
WALKER RIVER SYSTEM, YERINGTON, NEVADA

U.S. BOARD OF WATER COMMISSIONERS
WALKER RIVER SYSTEM

YEAR 1988 (CONTINUED):

DATE	E. WALKER '63	W. WALKER '90	TUNNEL	MAIN RIVER	ANTELOPE
August 1	1862 + 30%	1862 + 30%	1862 + 30%	1862 + 30%	1862 + 30%
August 9	1862 + 50%	1862 + 50%	1862 + 50%	1862 + 50%	1862 + 50%
August 18	1860	1860	1860	1860	1860
Sept. 13	1862	1862	1862	1862	1862
Sept. 26	1862	1862	1862	1862	1862
October 14	1862	1862	1862	1862	1862 + 20%
October 15	1863	1863	1863	1863	1862 + 20%
October 17	1865	1863	1863	1865	1862 + 30%

(76) (7)

DECREED RIGHT PRIORITIES SERVED

UNITED STATES DISTRICT COURT OF NEVADA
CASE IN EQUITY NO. C-125
JIM WEISHAUPT
CHIEF DEPUTY WATER COMMISSIONER
WALKER RIVER SYSTEM, YERINGTON, NEVADA

U.S. BOARD OF WATER COMMISSIONERS
WALKER RIVER SYSTEM

Year 1987:

DATE	EAST WALKER	'63	WEST WALKER	'90	MAIN RIVER	ANTELOPE
March 1st	Full		Full		Full	Full
31st	1870		1870		1870	1870
April 1st	1872		1872		1872	1872
11th	1870		1870		1870	1870
14th	1869		1870		1870	1870
18th	1869		1873		1873	1873
20th	1869 + ½ '70		1873		1873	1873
24th	1869 + ½ '70	30	1873		1873	1874
25th	1869 + ½ '70		1874		1874	1874
27th	1869 + ½ '70		1874		1874	1874
28th	1874		1878		1878	1878
29th	1874		1890	2	1890	Full
30th	1874		1890		1890	1890
May 1st	1874		1900	1	1900	1900
2nd	1874		1880		1880	1880
4th	1874		1876		1876	1876
6th	1874		1880		1880	1880
12th	1874		1890		1890	1890
14th	1875	31	1890		1890	1890
15th	1879		1890	10	1890	1890
19th	1890		1890		1890	1890
22nd	1884		1878		1884	1878
June 4th	1884		1884		1884	1884
5th	1879		1884		1884	1884
9th	1879		1880		1880	1880
15th	1879		1880		1880	1876
16th	1876		1876		1876	1876
18th	1876	30	1870		1876	1870
19th	1870		1870		1870	1865
20th	1870		1865		1870	1865
24th	1867 + 50%		1865		1869 + 50% Diff. '69 & '70	1864 -
25th	1867	31	1865		1869	1864 -
July 22nd	1867		1865		1868	1863 -
Aug. 1st	1865		1865		1865	1863 -
3rd	1865		1863		1865.	1863 -
5th	1863	17	1863		1863	1862 +
18th	1862		1862		1862	1862
Sept. 23rd	1862 + 20%		1862 + 20%		1862 + 20%	1862+2(

(139) (13)

DECREED RIGHT PRIORITIES SERVED

UNITED STATES DISTRICT COURT of Nevada
CASE IN EQUITY NO. C-125
JIM WEISHAUPT, Chief Deputy Commissioner
WALKER RIVER
YERINGTON, NEVADA

S. BOARD OF WATER COMMISSIONE
WALKER RIVER SYSTEM

Year 1986:

Date	East Walker '63		West Walker '90		Main River	Antelope
March 1st	Full		Full		Full	Full
2nd	D.D.	30	D.D.	30	D.D.	D.D.
July 3rd	Full		Full	31	Full	Full
21st	Full	31	1895	30	Full	1895
Aug. 1st	Full	30	1889	20	Full	1889
5th	1895	31	1889		Full	1889
8th	1880	31	1878		1880	1878
12th	1878		1876		1878	1876
29th	1878		1876		1878	1865
Sept. 4th	1878		1876		1878	1864 (90%)
8th	1878	30	1876		1878	1864 (80%)
16th	1878		1876		1878	1864 (75%)
23rd	1880		1880		1880	1864 (60%)
Oct. 7th	Full		Full		Full	1864 (60%)
15th	Full		Full		Full	Stockwater
		(183)		(111)		

DECREED RIGHT PRIORITIES SERVED

UNITED STATES DISTRICT COURT OF NEVADA
CASE IN EQUITY NO. C-125
JIM WEISHAUPT, CHIEF DEPUTY COMMISSIONER
WALKER RIVER - YERINGTON, NEVADA

U. S. BOARD OF WATER COMMISSIONERS
WALKER RIVER SYSTEM

Year 1985:

Date		East Walker	West Walker	Main River	Antelope
March	1st	Full	Full	Full	Full
April	19th	1890	1890	1890	1890
	25th	1884	1884	1884	1884
May	4th	1890	1890	1890	1890
	8th	Full	Full	Full	Full
	14th	1884	1884	1884	1884
	16th	1884	1884	1884	1890
	20th	Full	Full	Full	Full
	30th	1888	1888	1888	1888
June	4th	1879	1879	1879	1879
	8th	1890	1890	1890	1890
	10th	Full	Full	Full	Full
	17th	1890	1890	1890	1890
	24th	1882	1882	1882	1882
	27th	1879	1879	1879	1879
July	1st	1879	1874	1879	1874
	3rd	1874	1874	1874	1874
	10th	1871	1869	1871	1869
	17th	1871	1864	1871	1864
	30th	1869	1864	1869	1864
Aug.	9th	1865	1864	1865	1864
	22nd	1865	1865	1865	70% of 1863
Sept.	10th	80% of 1870	80% of 1870	80% of 1870	
	17th	1875	1875	1875	1875
Oct.	15th	Full	Full	Full	

DECREED RIGHT PRIORITIES SERVED

UNITED STATES DISTRICT COURT OF NEVADA
CASE IN EQUITY NO. C-125
JIM WEISHAUPT, CHIEF DEPUTY COMMISSIONER
WALKER RIVER YERINGTON, NEVADA

U. S. BOARD OF WATER COMMISSIONERS
WALKER RIVER SYSTEM
YERINGTON, NEVADA

YEAR 1984.

DATE	EAST WALKER '63	WEST WALKER '90	MAIN RIVER	ANTELOPE
March 1st	Full	Full	Full	----
March 28th	1890	1890	1890	----
April 11th	1890	1878	1878	----
April 14th	1895	1885	1885	1878
April 18th	1890	1890	1890	1890
May 7th	1895	1895	1895	1895
May 11th	Direct Diversion	Direct Diversion	Direct Diversion	Direct Diversion
May 18th	Full	Direct Diversion	Direct Diversion	Direct Diversion
May 25th	Direct Diversion	Direct Diversion	Direct Diversion	Direct Diversion
June 9th	Direct Diversion	Direct Diversion	Direct Diversion	Full
July 5th	←Full + 40% Direct Diversion Ditch Capacity→			Full
July 12th	----	1890	----	1890
July 13th	1890	1890	1890	1890
August 9th	1882	1879	1879	1879
August 11th	1878	1874	1878	1874
September 8th	1874	1868	1874	----
October 1st	1879	1879	1879	----

30 31 13 31 30 30 31 8 31 30 (183) (113)

Decreed Right Priorities Served

UNITED STATES DISTRICT COURT OF NEVADA
CASE IN EQUITY NO. C-125
JIM WEISHAUPT, CHIEF DEPUTY COMMISSIONER
WALKER RIVER
YERINGTON, NEVADA

U. S. BOARD OF WATER COMMISSIONERS
WALKER RIVER IRRIGATION DISTRICT
YERINGTON, NEVADA

YEAR 1983.

Date Set	East Walker '63	West Walker '90	Main River
March 1st	Direct Diversion	Direct Diversion	Direct Diversion
July 25th	Full & Storage	Full & Storage	Full & Storage
August 1st	Direct Diversion	Direct Diversion	Direct Diversion
Sept. 17th	Full & Storage	Full & Storage	Full & Storage

(Priorities set by Manager Jim Weishaupt)

(183) (183)

DECREED RIGHT PRIORITIES

Reno, Nevada
U. S. District Court of Nevada
Case in Equity, C-125

S. BOARD OF WATER COMMISSIONE
WALKER RIVER SYSTEM

YEAR: 1982 .

Date	East Walker	'63	West Walker	'90	Main River
March 1st	Full		Full		Full
April 1st	Full & Direct	30	Full & Direct	30	Full & Direct
June 8th	Full & Storage	31	Full & Storage	31	Full & Storage
June 12th	Full & Direct	30	Full & Direct		Full & Direct
August 5th	Full & Storage	31	Full & Storage	30	Full & Storage
August 19th	1890		1890	31	1890
August 26th	Full & Storage	31	Full & Storage	31	Full & Storage
September 1st	Full		1888		Full
September 10th	1883		1883		1883
September 20th	Full & Storage	30	Full & Storage		Full & Storage
September 28th	Full & Direct		Full & Direct		Full & Direct

(Decrees set by Manager Jim Weishaupt)

(183) (153)

Compiled from daily operating work sheets on file at the Walker River Irrigation District's office in Yerington, Nevada, by Manager/Chief Deputy Water Commissioner Jim Weishaupt.

Decreed Priorities Served, Year 1982

UNITED STATES DISTRICT COURT of Nevada
CASE IN EQUITY NO. C-125
JIM WEISHAUPT, CHIEF DEPUTY COMMISSIONER
WALKER RIVER
YERINGTON, NEVADA

U.S. BOARD OF WATER COMMISSIONERS
WALKER RIVER SYSTEM

YEAR: 1981

Date	East Walker	'63 West Walker	'90 Main River
March 10th	Full	Full	Full
April 2nd	1879	1879	1879
April 7th	1874	1874	1874
April 15th	1873	30 1873	1873
April 21st	1875	1875	1875
April 25th	1881	1881	1881
April 27th	Full & Storage	Full & Storage 2	Full & Storage
April 29th	1889	1889	1889
May 4th	Full & Storage	Full & Storage	Full & Storage
May 8th	1883	31 Full 17	Full
May 20th	1875	1885	1885
May 22nd	1875	1879	1879
May 28th	1880	1890	1890
May 30th	1880	Full & Storage 18	Full & Storage
June 3rd	Full & Storage	Full & Storage	Full & Storage
June 15th	1886	1886	1886
June 17th	1880	1880	1880
June 19th	1879	30 1879	1879
June 26th	1875	1875	1875
June 30th	1871	1871	1871
July 2nd	1871	Tunnel 1871 - S.V. 1865	1871
July 11th	1869	Tunnel 1869 - S.V. 1865	1869
July 15th	1864 + 50%	6+31 1864	1864 + 50%
August 7th	1862 + 50%	1862 + 50%	1862 + 50%
September 1st	1863	30 1863	1863
September 12th	1864	1863 + 50%	1864
October 1st	1865	1865	1865

(Decrees set by Manager, Jim Weishaupt)

Compiled from daily operating work sheets on file at the Walker River Irrigation District office in Yerington, Nevada by Manager Weishaupt, Chief Deputy Water Commissioner.

(158) November 30th, 1981

(37)

DECREED PRIORITIES SERVED

UNITED STATES DISTRICT COURT of Nevada
CASE IN EQUITY NO. C-125
JIM WEISHAUPT, Chief Deputy Commissioner
WALKER RIVER
YERINGTON, NEVADA

U.S. BOARD OF WATER COMMISSIONERS
WALKER RIVER SYSTEM

YEAR: 1980 .

Date	East Walker	'63	West Walker	'90	Main River
April 1st	Full	30	Full	9	Full
April 10th	1880		1880		1880
April 11th	1885	31	1885		1885
April 13th	1885	30	1885		1895
April 16th	Full & Direct Diversion		Full & Direct Diversion	15 31	Full & Direct Diversion
August 1st	End of Melt Out	31		30	
August 5th	Full	31	Full	31	Full
August 15th	1890		1890	21	1890
August 22nd	1882		1882		1882
September 4th	1878	30	1878		1878
September 12th	1882		1882		1882
October 2nd	1878		1878		1878
October 7th	1875		1875		1875
October 18th	1884		1884		1884
October 23rd	Full		Full		Full
		(183)		(137)	

(Decrees set by Jim Weishaupt)

Compiled from daily operating work sheets on file at the Walker River Irrigation District office in Yerington, Nevada by Jim Weishaupt, Chief Deputy Water Commissioner.

November 1980

DECREED PRIORITIES SERVED

UNITED STATES DISTRICT COURT of Nevada
CASE IN EQUITY NO. C-125
JIM WEISHAUPT, Chief Deputy Commissioner
WALKER RIVER
YERINGTON, NEVADA

U.S. BOARD OF WATER COMMISS[illegible]RS
WALKER RIVER SYSTEM

YEAR: 1979

Date Priority Set	East Walker '63	West Walker '90	Main River
March 1st	Full	Full	Full
April 1st	Full & Storage	Full & Storage	Full & Storage
April 25th	1885	1890	1890
April 27th	1880	1880	1880
May 2nd	1890	1890	1890
May 5th	1890	Full	Full
May 14th	Full	Full	Full
May 22nd	Full	Full & State Permit	Full & State Permit
May 24th	Full & State Permit	Full & State Permit	Full & State Permit
June 20th	Full	Full	Full
July 5th	1890	1890	1890
July 12th	1880	1880	1880
July 19th	1880	1878	1880
July 23rd	1878	1878	1878
August 2nd	1878	1878	1878
August 6th	1874	1874	1874
August 10th	1870	1872	1872
August 14th	1870	1870	1870
September 4th	1870	1869	1870
September 21st	1869	1869	1869
	30	26	
	31	30	
	30	30	
	31	11	
	31		
	30		
	(183)	(97)	

(Decrees set by H. E. Rowntree)

Compiled from daily operating work sheets on file at the Walker River Irrigation District office in Yerington, Nevada, by Jim Weishaupt, Chief Deputy Water Commissioner. October, 1980.

DECREED PRIORITIES SERVED

UNITED STATES DISTRICT COURT of Nevada
CASE IN EQUITY NO. C-125
JIM WEISHAUPT, Chief Deputy Commissioner
WALKER RIVER
YERINGTON, NEVADA

U.S. BOARD OF WATER COMMISSIONERS
WALKER RIVER SYSTEM

YEAR: 1978.

Date Priority Set	East Walker (63)	West Walker (90)	Main River
March 1st	Full	Full	Full
April 14th	Full & Direct Diversion (30)	Full & Direct Diversion (30)	Full & Direct Diversion
May 1st	Full & Direct Diversion (31)	Full & Direct Diversion (31)	Full & Direct Diversion
June 6th	Full & Storage (30)	Full & Storage (30)	Full & Storage
June 19th	Full & Storage	Full & Direct Diversion	Full & Direct Diversion
July 8th	Full & Storage (31)	Full & Storage (31)	Full & Storage
August 1st	Full & Storage @ 100%	Full & Storage @ 100%	Full & Storage @ 100%
August 19th	Full & Storage (31)	1890 (25)	Full & Storage
August 26th	1885	1874	1885
September 1st	1875	1870	1875
September 13th	1885 (30)	1885	1885
September 15th	Full & Storage	Full & Storage (16)	Full & Storage
October 1st	Full & Storage (183)	Full & Storage (163)	Full & Storage

1978, was an exceptional year. There was a large run-off forecast and an early release was necessary to make room for high flows. Within a few days farmers picked up the increased river flow. The weather remained cool and an even run-off was enjoyed. This was the first year the Direct-Diversion rights were used. The soils were very dry to the previous two years of drought, therefore the total forecastable flows did not show because of much saturation.

(Decree set by H. E. Rowntree)

Compiled from daily operating work sheets on file at the Walker River Irrigation District office in Yerington, Nevada, by Jim Weishaupt, Chief Deputy Water Commissioner. October, 1980.

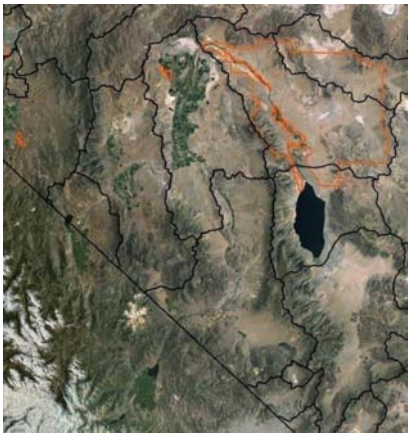
DECREED PRIORITIES SERVED

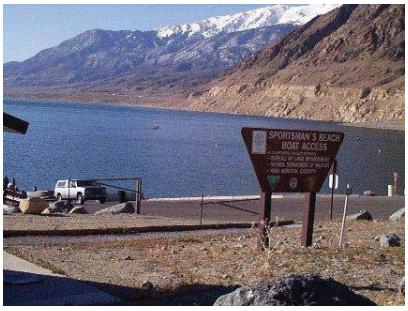
UNITED STATES DISTRICT COURT of Nevada
CASE IN EQUITY NO. C-125
JIM WEISHAUPT, Chief Deputy Commissioner
WALKER RIVER
YERINGTON, NEVADA

APPENDIX 2

MATERIALS OBTAINED FROM THE NATIONAL FISH AND WILDLIFE FOUNDATION'S WEBSITE

Quantifying Agricultural Consumptive Use with Remote Sensing to Support Water Right Changes in the Walker River Basin





Adam Sullivan, P.E.
Nevada Division of Water Resources

Lindsay Gilbertson
Desert Research Institute

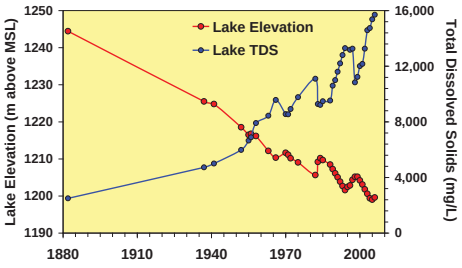
Justin Huntington
Desert Research Institute

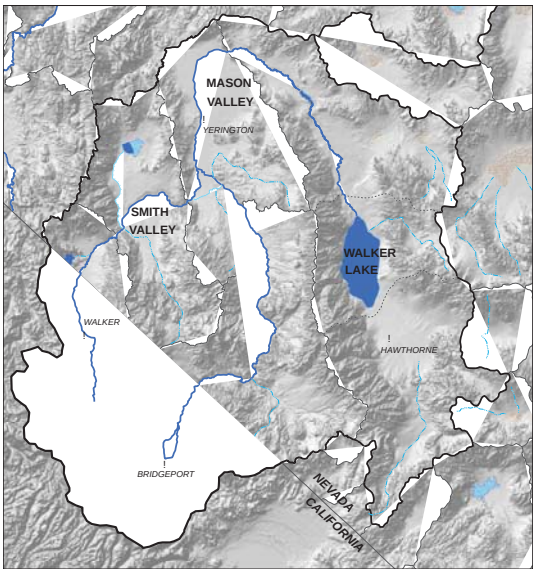
Charles Morton
Desert Research Institute

In Cooperation with:

Walker Basin Restoration Program

Federal Program implemented in 2009 to increase flow to Walker Lake



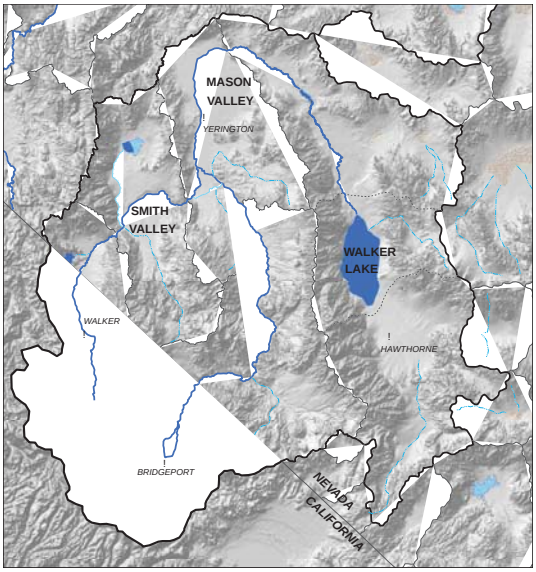


Walker Basin Restoration Program

Funds Allocated to Purchase Upstream Water Rights from Willing Sellers

Agriculture ⟶ Lake

Broad range of Supporting Work to facilitate and mitigate water transfers

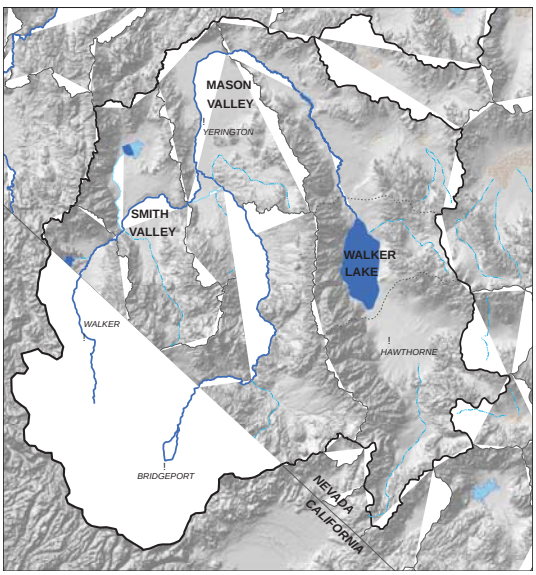


0 5 10 20 Miles

Walker Basin Restoration Program

Project Status

- Several purchases in process.
- Additional instream flow to Walker Lake beginning in 2011, increasing in 2012.



0 5 10 20 Miles

NDWR Responsibilities

- Technical review and permitting of all water right changes in the Walker Basin Project
  - Protection of existing water right holders.

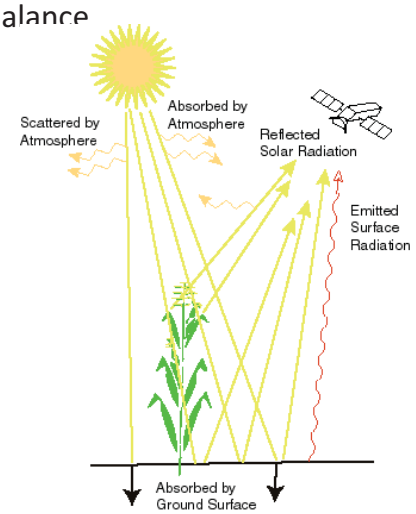
- Monitoring and Compliance
  - Fallowed lands
  - Alternative crops
  - Ground cover for dust/erosion control

Challenge: Agricultural Consumptive Use of water is a critical but uncertain variable

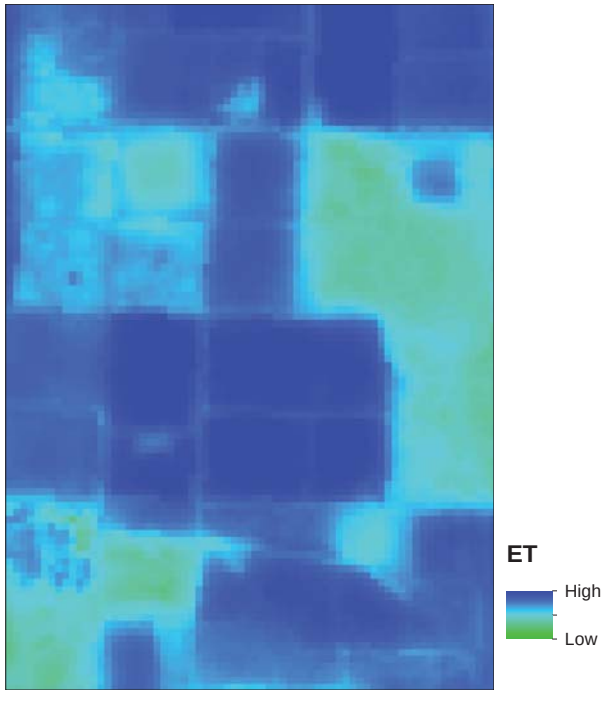
Approach: Quantify Agricultural ET using Remote Sensing and METRIC

METRIC

- Satellite data and ground-based weather data are used to compute ET as a component of the surface energy balance

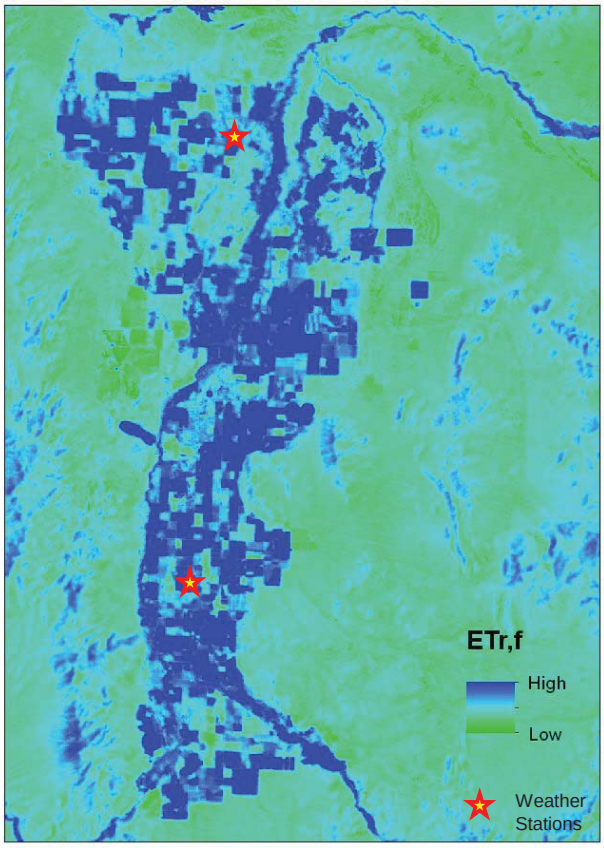


University of Idaho



Landsat Coverage of the Walker Basin

- We get snapshots of ET every 7-9 days for the Upper Walker



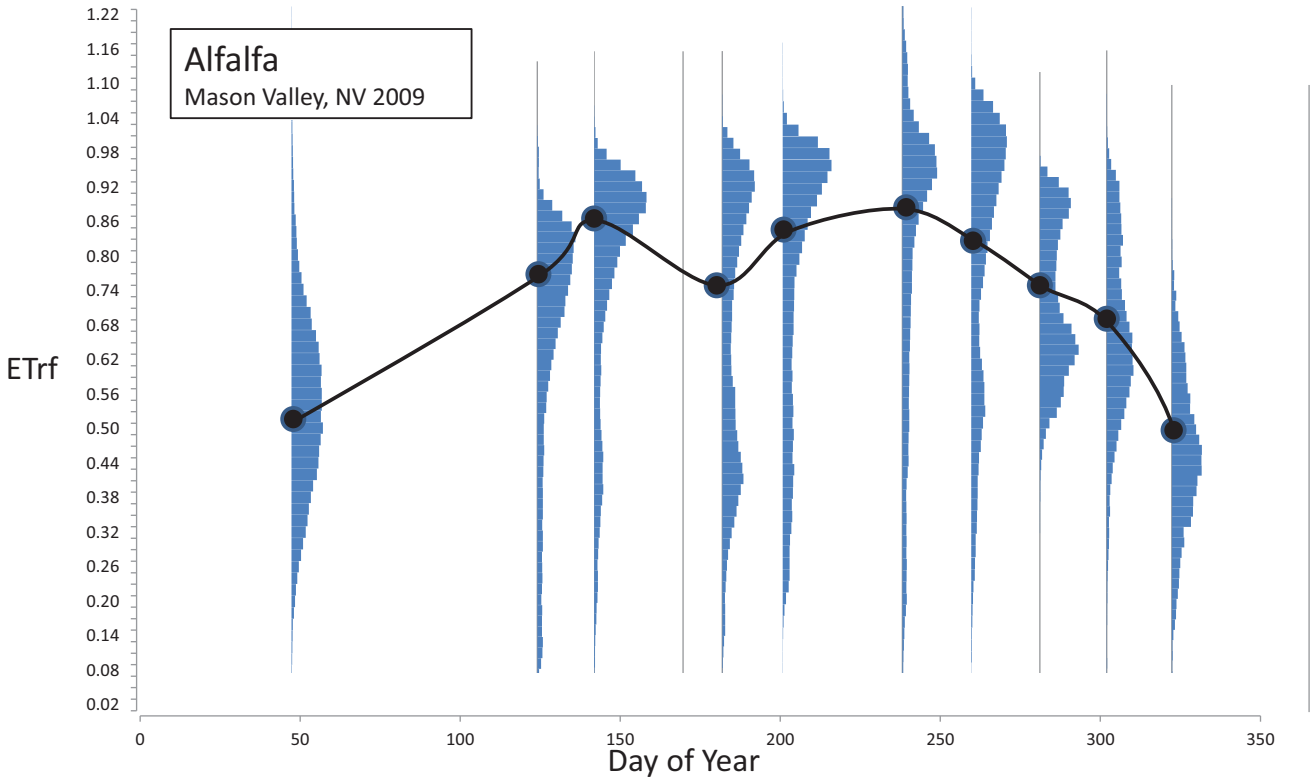
Mason Valley, 10:25 AM July 15, 2009

New Weather Stations give us Site-Specific Data

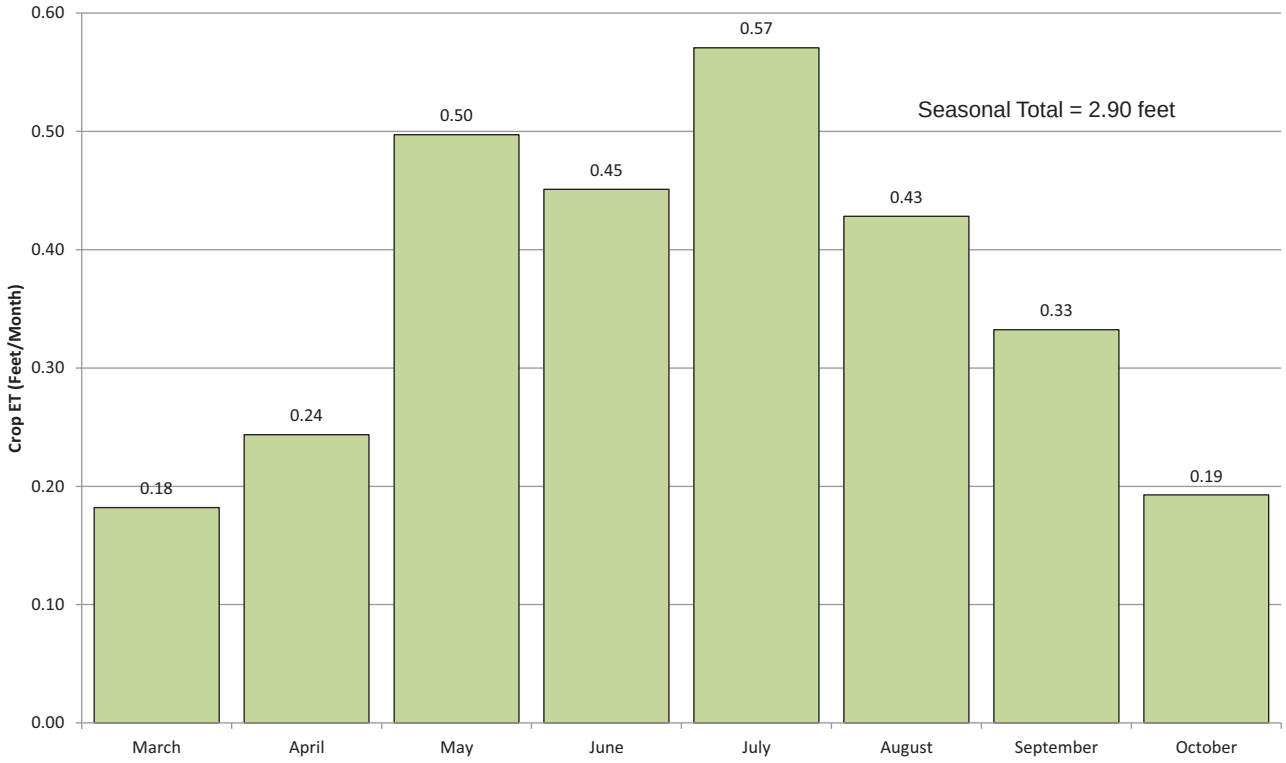
$$ETrf = \frac{\text{ET from METRIC}}{\text{Reference ET}}$$

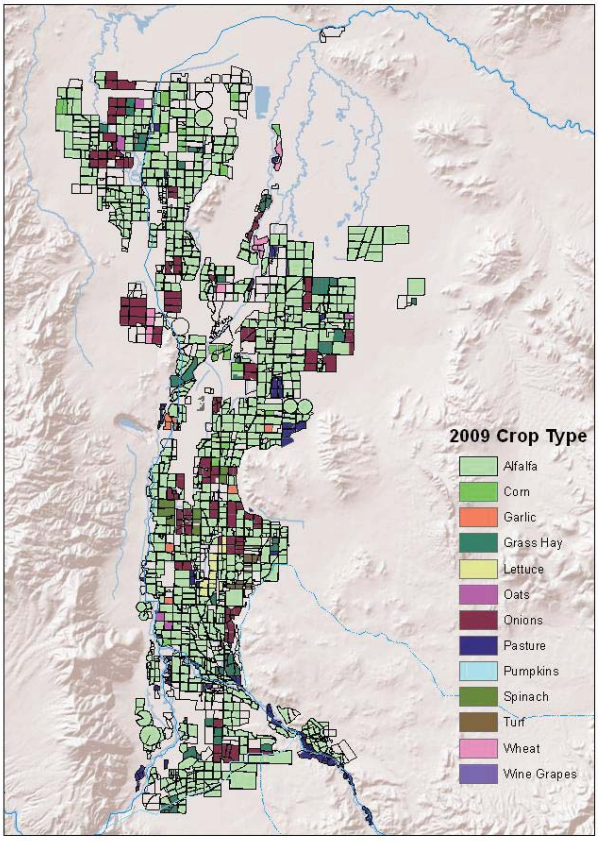
Mason Valley Weather Station
Installed 2010

Interpolation/Integration for Continuous and Seasonal ET



2009 ET for all Mason Valley Irrigated Crops

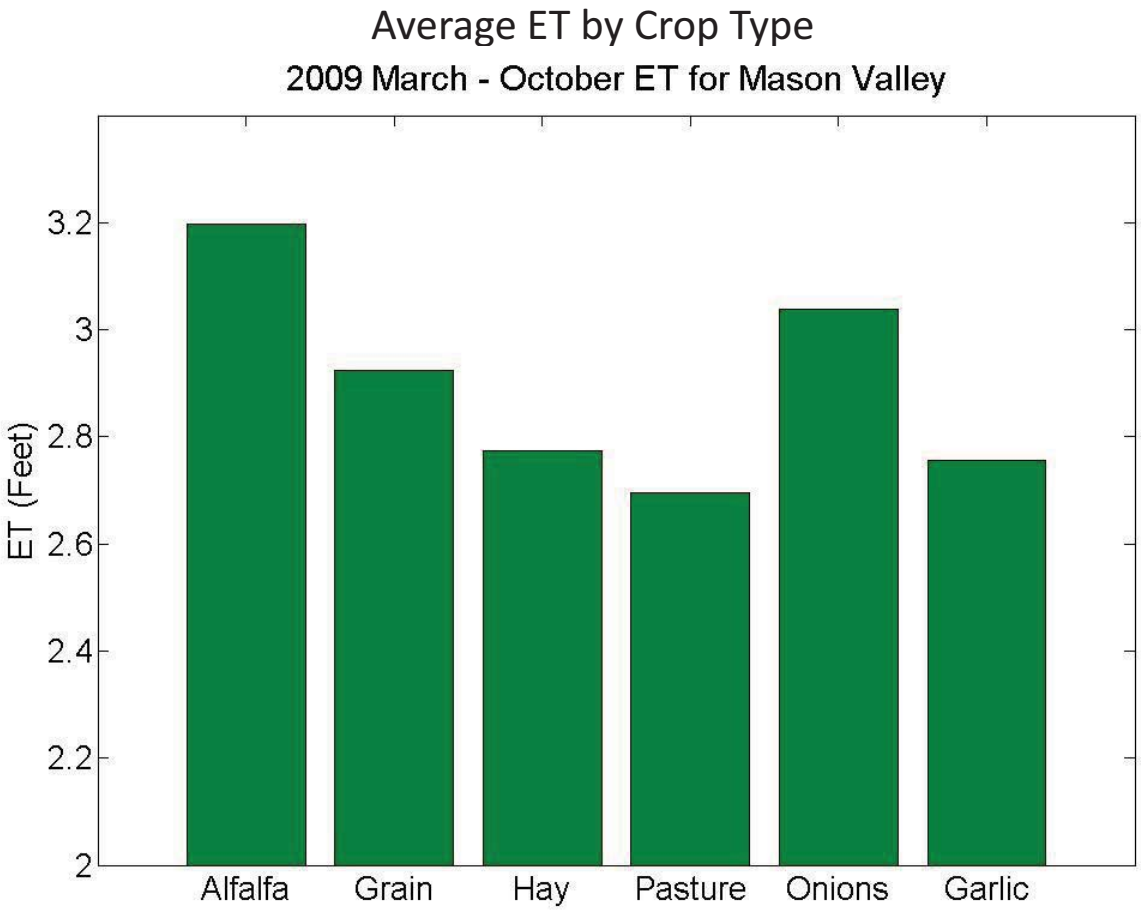




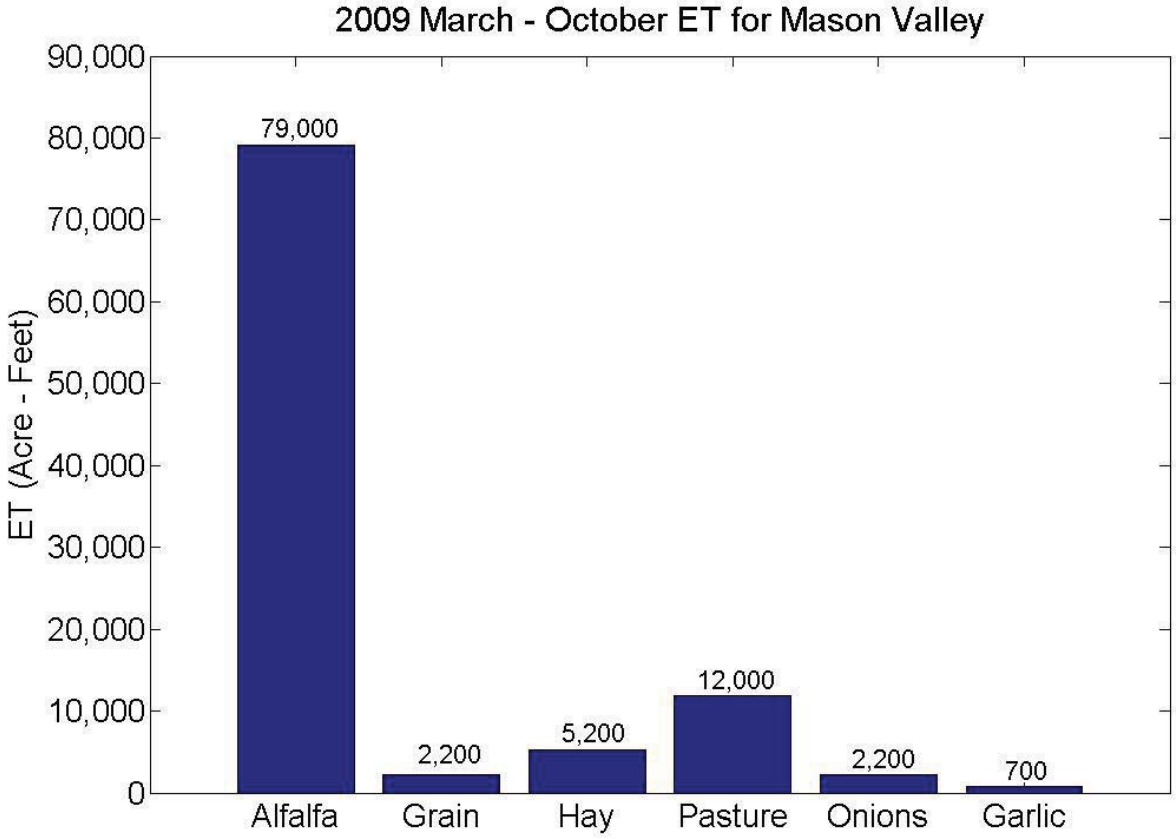
Crop Inventories

Now we can relate ET to crop type in a specific area over a period of time

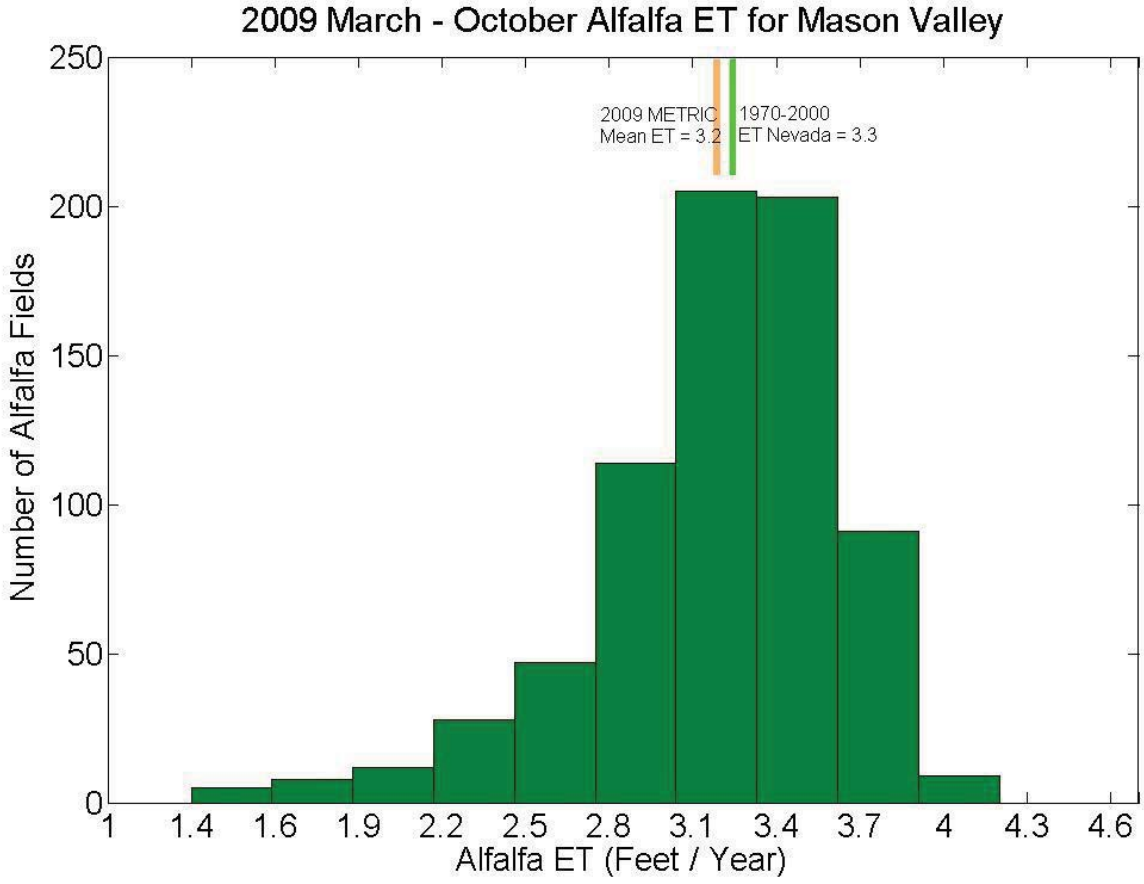
- 2007: DRI/WRID (field inventory)
- 2008-2009: USDA Agricultural Statistics (single satellite image)
- 2010-2014: NDWR (field inventory)

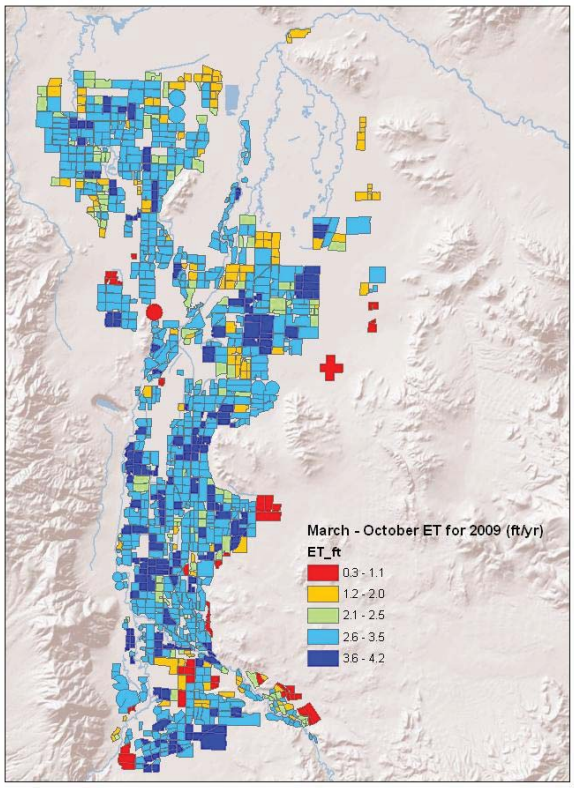


Seasonal Total ET by Crop Type



Variation in ET from fields of the same crop





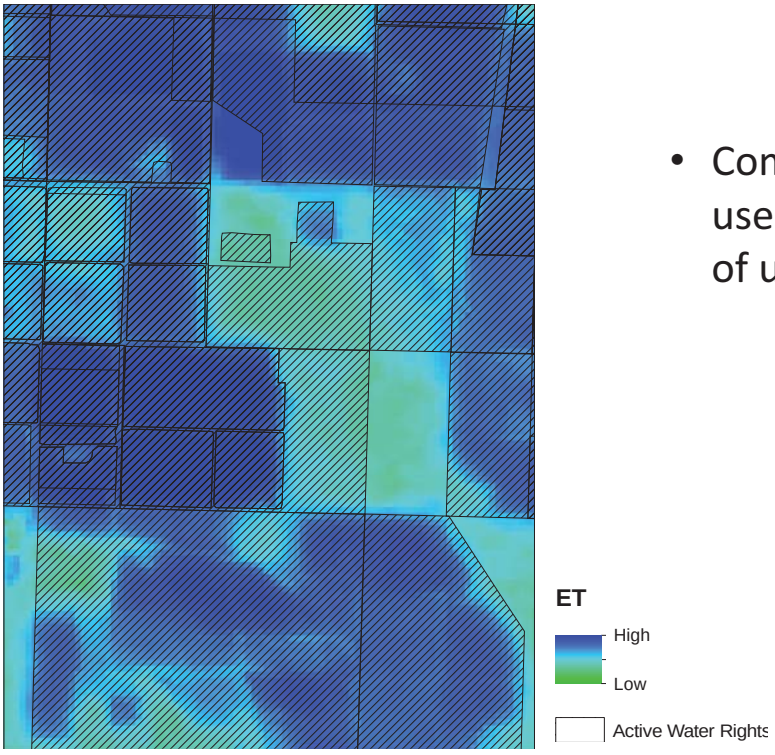
2009 Seasonal ET Maps

Measuring Effectiveness of Walker Basin Water Transfers with METRIC

- Historic ET from Fields that transfer Water Rights to Walker Lake
- Actual ET from low-water crops
- Monitor Fallowed Lands
- ***Compare Reduction in Consumptive Use to Changes in Walker River flow***

– Annual Report

METRIC Results supplement Baseline Data



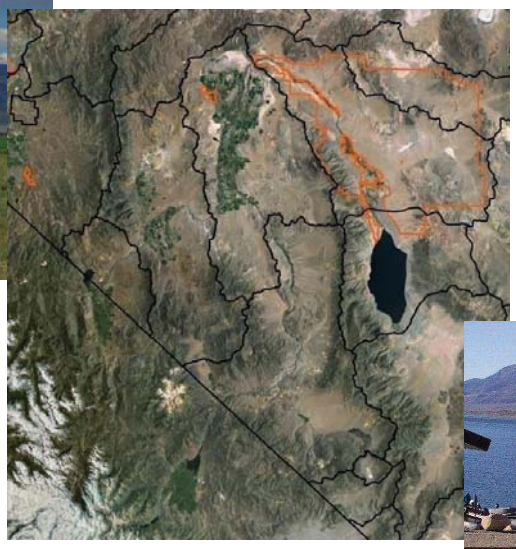
- Compare consumptive use to permitted place of use.

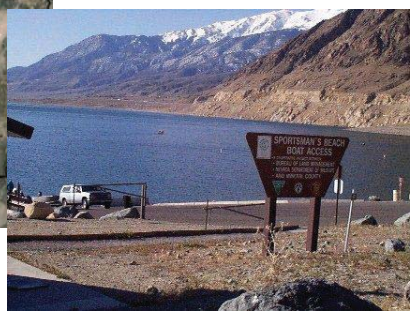
Potential Future Applications of METRIC in the Walker Basin

- Update ET values in existing Hydrologic Models
  - 10 years of ET maps to be processed by DRI (1990s and 2000s)
- Estimate Recharge and Irrigation Efficiency
  - Known diversion rates and pumpage
  - Efficiency = ET/(div + P)
  - Recharge = Diversion – ET – Runoff
- Long-Term Basin-Scale Water Budget
  - (Walker River inflow + P) – (Walker River outflow +ET) = ▵Ground Water Storage?
  - Requires phreatophyte/riparian ET


-Questions-

Remote Sensing of Consumptive Use in the Walker River Basin, Nevada





Adam Sullivan, P.E.
Nevada Division of Water Resources

Justin Huntington
Charles Morton
Desert Research Institute

The Nevada State Engineer's Office needs *accurate* values of actual Evapotranspiration.

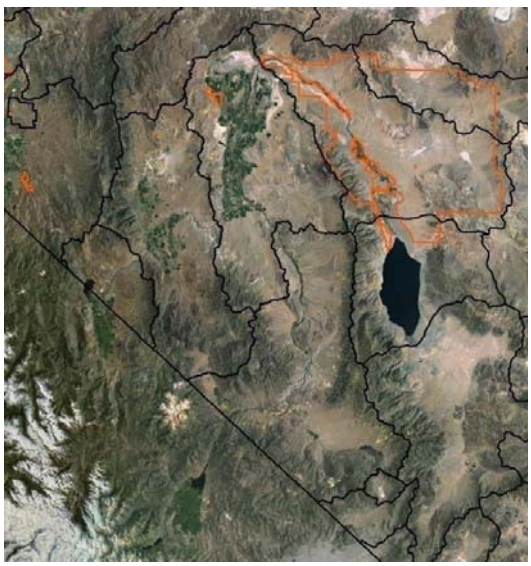
Techniques for quantifying evapotranspiration using Remote Sensing provide the most accurate data over large areas and long durations.

- Best Science Available

The Nevada State Engineer's Office needs *accurate* values of actual Evapotranspiration.

- Agricultural Consumptive Use for inter-basin water transfers.
- Phreatophyte ET to quantify Perennial Yield on a basin scale.

NDWR is committed to a 5-year program to integrate Remote Sensing methods



OBJECTIVES

1. Implement METRIC to quantity agricultural consumptive use.
2. Partner with the Desert Research Institute to adopt the best science available.
3. Develop in-house expertise to implement techniques and review work by others.

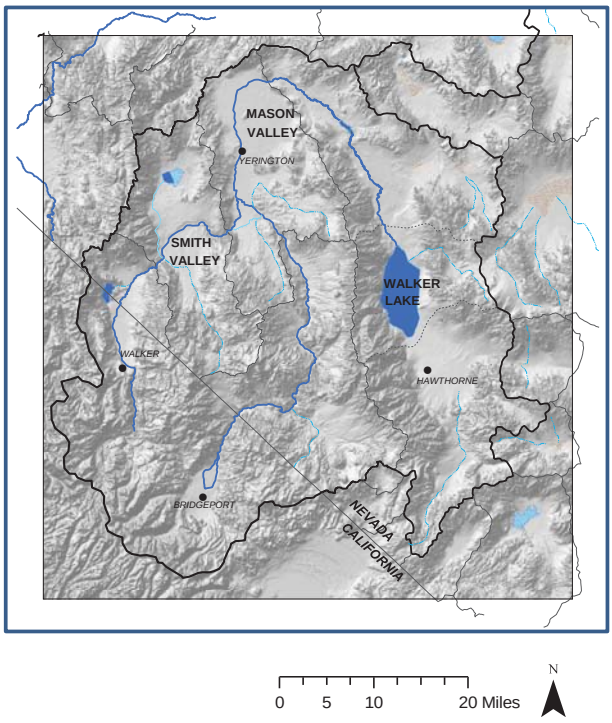
DRI

University of Idaho

Walker Basin Restoration Program

Federal Program implemented in 2009 to increase flow to Walker Lake

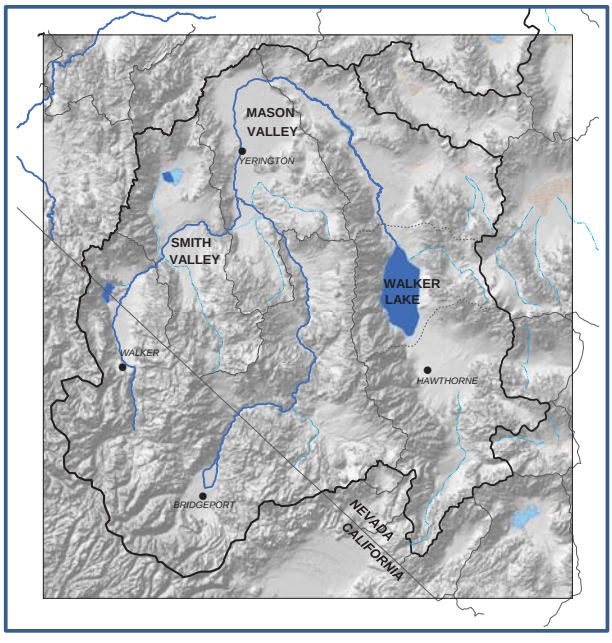
- Walker River average flow 300,000 acre-feet per year
- 1940 Walker River Decree allocates all stream flow
- Walker Lake has lost 80% of its volume in 100 years
- TDS exceeds 18,000 ppm



Walker Basin Restoration Program

Transfer of water rights from upstream agriculture to the terminal lake.

- Federal funds allocated to purchase water rights.
- Purchases, leases and low water use crops considered
- Highly contentious



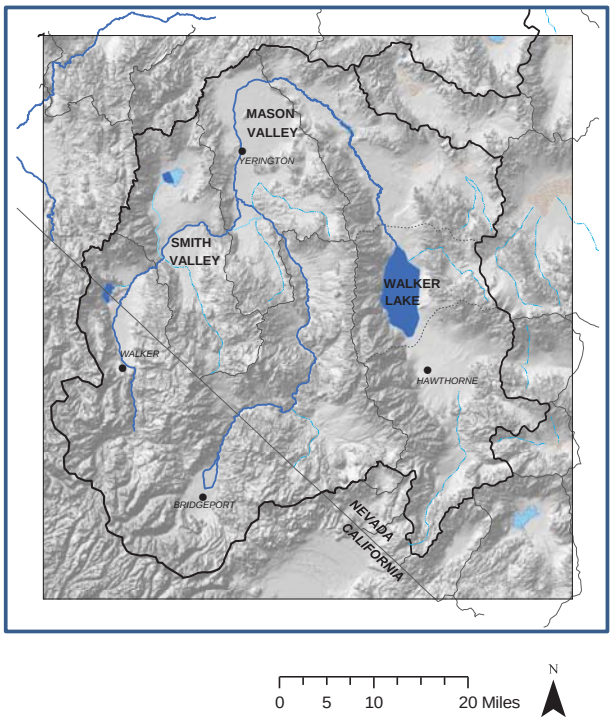
National Fish and Wildlife Foundation

Walker Basin Restoration Program

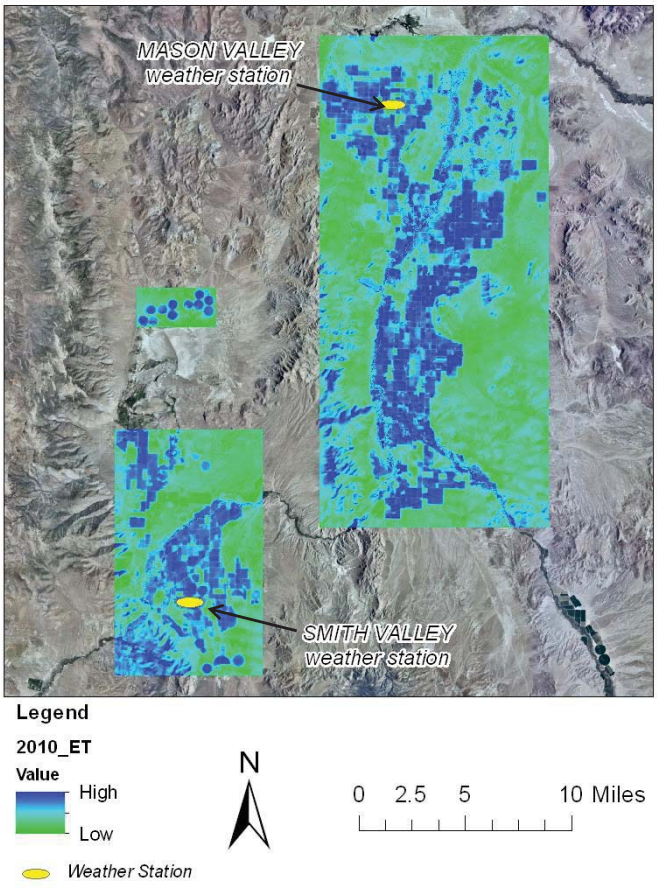
First “test case” now in the hearing process before the State Engineer.

- Economic
- Legal
- Hydrologic

Volume of permitted water transfer based on Consumptive Use



Walker Basin Agricultural Valleys

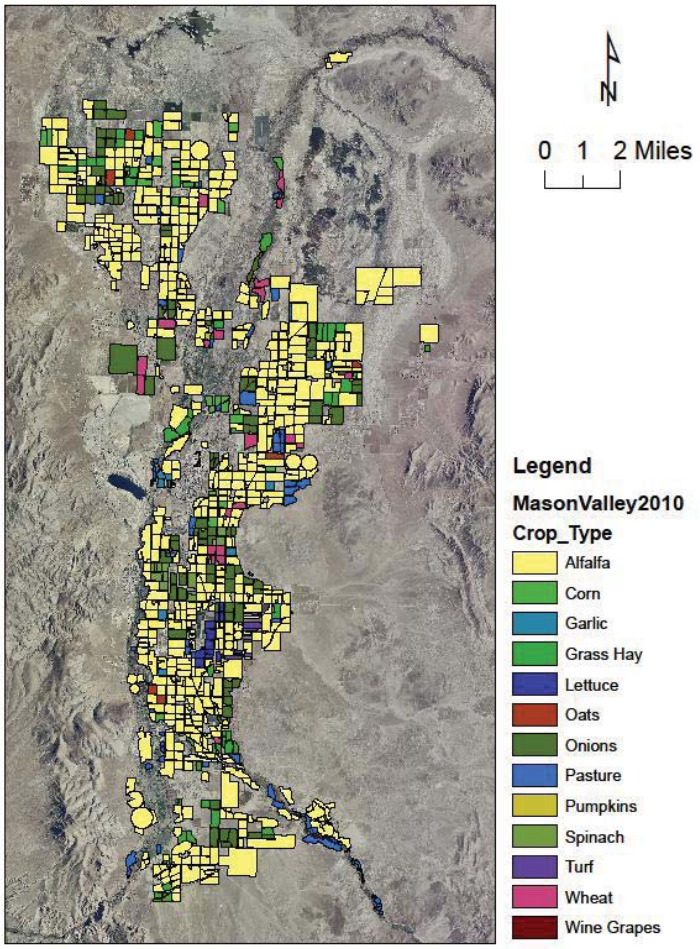


METRIC was used to develop maps of seasonal ET

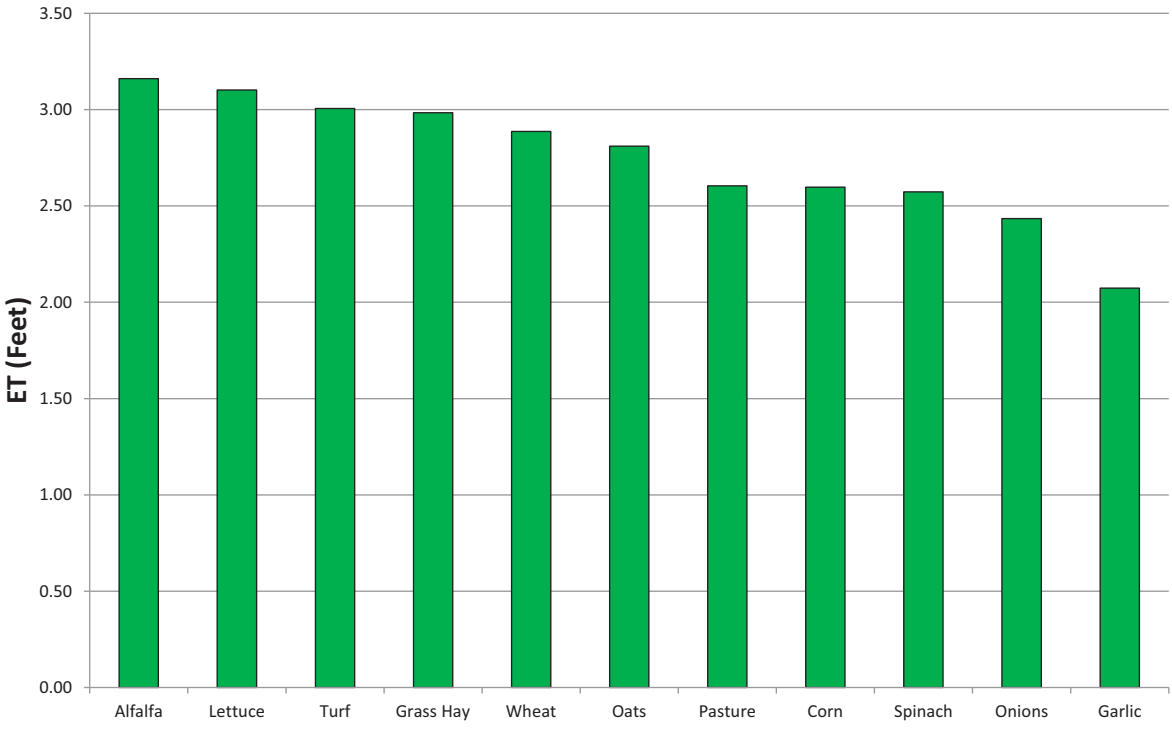
Cooperation with DRI was essential

- Weather stations
- Code
- Technical review
- 10 years of historic ET maps

Crop Inventories were used to relate actual ET to crop type

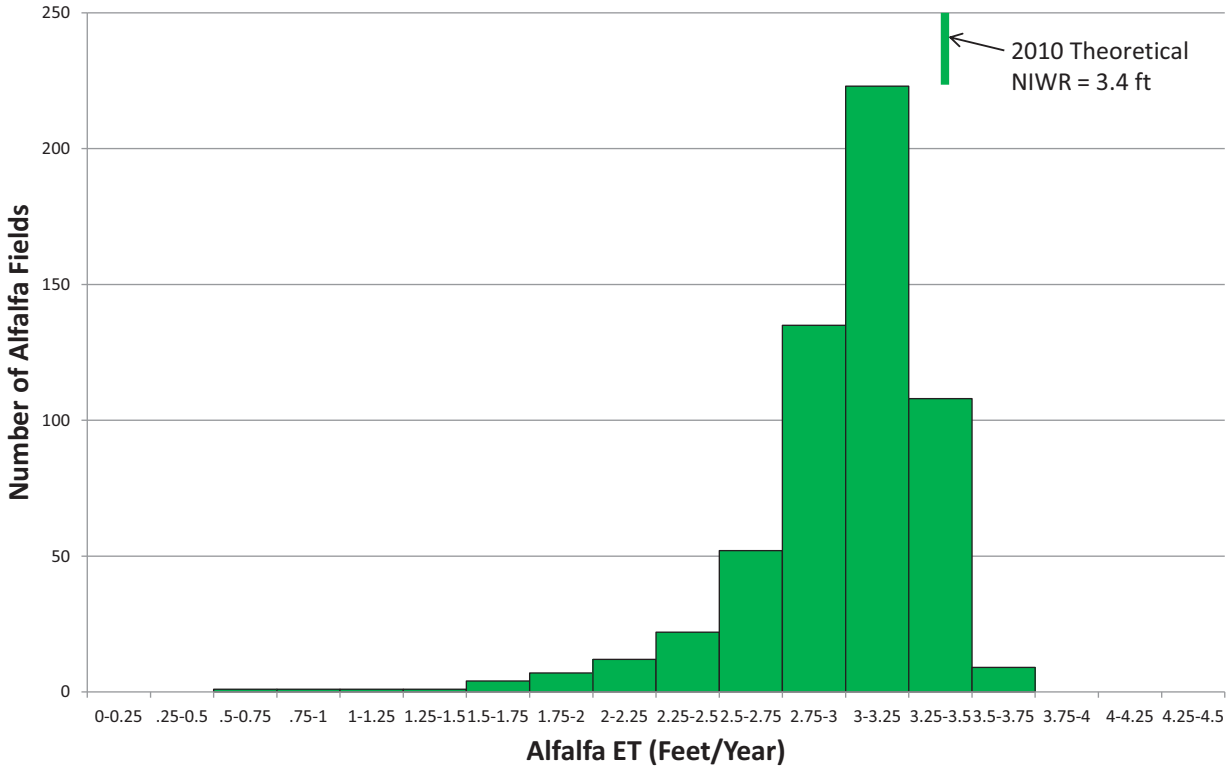


Average ET by Crop
Mason Valley, NV 2010



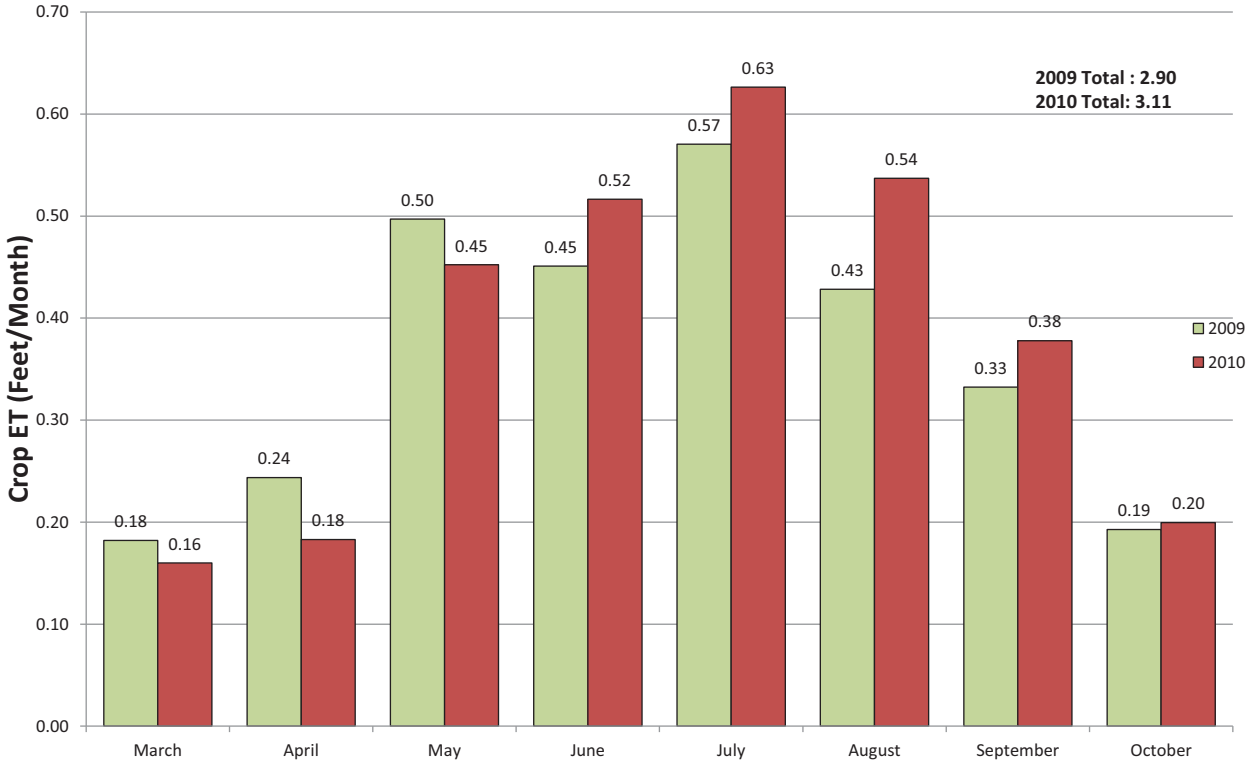
ET from Individual Alfalfa Fields

Mason Valley, NV March-October 2010



Monthly ET for all Irrigated Crops

2009 vs. 2010



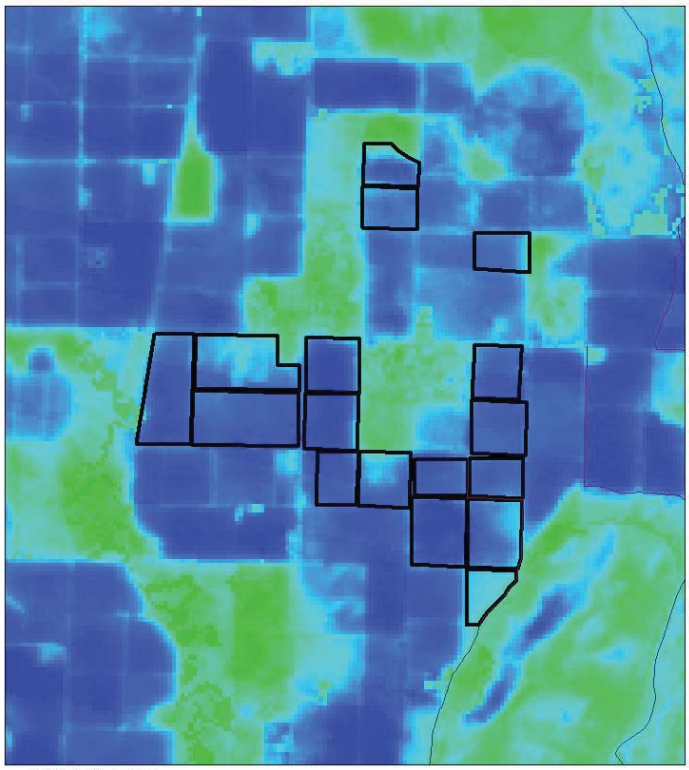
"Test Case" now in the hearing process before the State Engineer

Water Right = 4.0 AF/Acre

Actual Consumptive Use from METRIC:

2010 = 2.9 ft
2009 = 2.6 ft

Subtracting pumpage, Actual diversion from Walker River in 2010= 1.5 AF/Acre



2010 ET

Value
High
Low
0 0.3 0.6 1.2 Mile
N

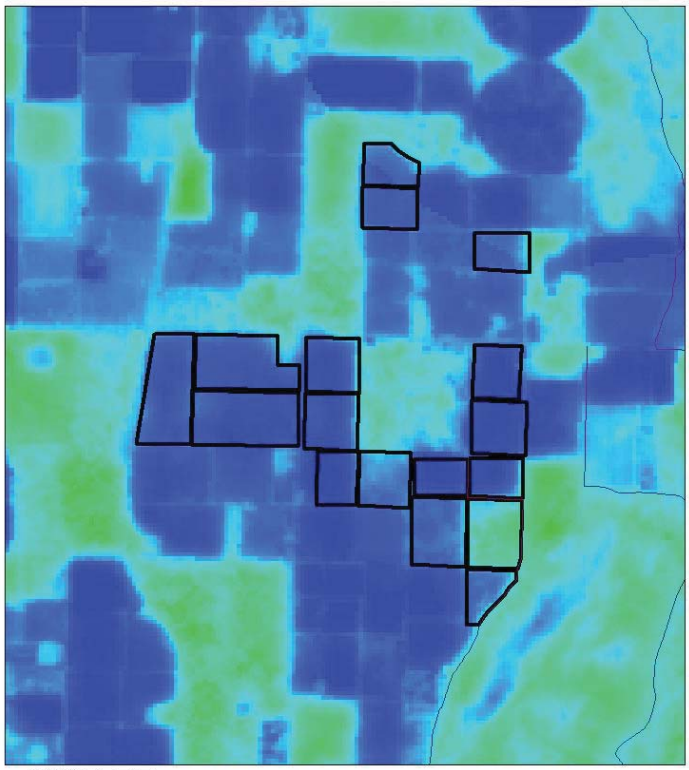
"Test Case" now in the hearing process before the State Engineer

Water Right = 4.0 AF/Acre

Actual Consumptive Use from METRIC:

2010 = 2.9 ft
2009 = 2.6 ft

Subtracting pumpage, Actual diversion from Walker River in 2010= 1.5 AF/Acre



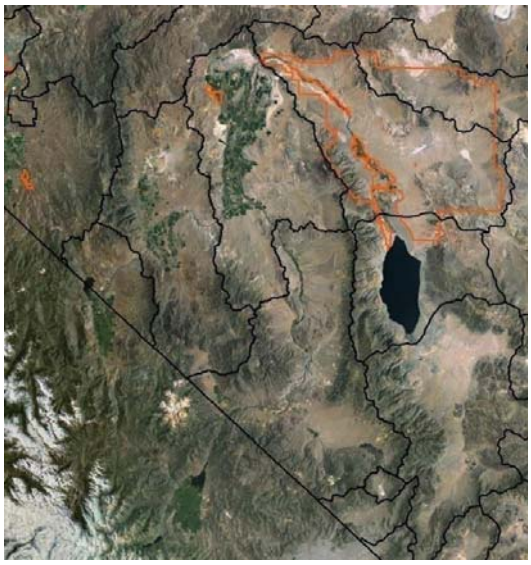
2009 ET

Value
High
Low
0 0.3 0.6 1.2 Mile
N

Using METRIC results to support Walker Basin Water Transfers

- ***Permit terms:*** Water right transfers are limited to Consumptive Use.
- ***Monitoring:*** Determine the actual ET for transitional low-water crops.
- ***Basin water budget:*** Compare the reduction in agricultural Consumptive Use to an increase in Walker Lake volume.

Integrating Remote Sensing of ET into the Nevada State Engineer Office



FORMULA:

1. Lots of help from research cooperators
2. External funding
3. Well-defined application meaningful to the State Engineer
4. Staff commitment for 5 years to develop in-house expertise

With tangible outcomes this science will increasingly be integrated into our future work.


-Questions-