



# SOUTHERN NEVADA WATER AUTHORITY

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September 10, 2008

Ms. Lorri Gray, Regional Director  
Bureau of Reclamation  
Lower Colorado Regional Office  
P.O. Box 61470  
Boulder City, Nevada 89006

Dear Ms. Gray:

**SUBJECT: SOUTHERN NEVADA WATER AUTHORITY PLANS OF CREATION FOR MUDDY AND VIRGIN RIVER TRIBUTARY CONSERVATION INTENTIONALLY CREATED SURPLUS, CALENDAR YEARS 2008 AND 2009**

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Action

Enclosed are the Southern Nevada Water Authority's (Authority) 2008 and 2009 Intentionally Created Surplus (ICS) Tributary Conservation Plans of Creation (Plans) for the Muddy and Virgin Rivers in Nevada. Our Plans describe how we intend to meet all the requirements as outlined in Section 3 of the *Colorado River Interim Guidelines for Lower Basin Shortages and Coordinated Operations for Lake Powell and Lake Mead* (Guidelines).

As you know, the Guidelines require a Contractor to enter into a Delivery Agreement with the United States of America (United States) and a Forbearance Agreement with Lower Colorado River Basin (Lower Basin) Contract holders to create and take Tributary Conservation ICS. The Authority and Colorado River Commission entered into a Delivery Agreement with the United States and a Forbearance Agreement with Lower Basin Contract holders on December 13, 2007. Exhibit A of the Forbearance Agreement describes the surface water rights on the Muddy and Virgin Rivers, pre-dating June 25, 1929, which the Authority plans to use to create Tributary Conservation ICS, and describes how the flows reaching Lake Mead will be calculated.

The attached Plans are consistent with the Guidelines, Forbearance Agreement, and Delivery Agreement. The Authority anticipates creating Tributary Conservation ICS during calendar years 2008 and 2009 in the volumes indicated below:

Calendar Year	Potential Volume, in acre-feet/year Cited in Plans of Creation		
	Virgin	Muddy	Total
2008	5,000	11,000	16,000
2009	14,000	16,000	30,000

If you have any questions, please contact William Rinne at 702-691-5255.

Sincerely,

Kay Brothers  
Deputy General Manager  
Engineering and Operations

KB:WR:JJ:cc  
Enclosures

cc: William E. Rinne, Director, Surface Water Resources, SNWA  
George Caan, Director Colorado River Commission of Nevada

### SNWA MEMBER AGENCIES

Big Bend Water District • Boulder City • Clark County Water Reclamation District • City of Henderson • City of Las Vegas • City of North Las Vegas • Las Vegas Valley Water District

# **Muddy River Intentionally Created Surplus (ICS) Tributary Conservation Plan of Creation Calendar Year 2008 and 2009**

## ***Introduction***

The Secretary of Interior (Secretary) issued a Record of Decision for *Colorado River Interim Guidelines for Lower Basin Shortages and the Coordinated Operations for Lake Powell and Lake Mead* (Guidelines) on December 13, 2007, which established criteria for the development and delivery of Intentionally Created Surplus (ICS). One type of ICS is Tributary Conservation, which allows a Contractor<sup>1</sup> to increase tributary flows into the Mainstream of the Colorado River within its state for ICS credits. The conservation of tributary flows into the Mainstream of the Colorado River is limited to water rights that have been used for a significant period of years and were perfected prior to June 25, 1929, the effective date of the Boulder Canyon Project Act.

To generate ICS, the Guidelines require a Contract holder to enter into a Delivery Agreement with the United States of America and a Forbearance Agreement with Lower Basin Contract holders. Southern Nevada Water Authority (SNWA) and Colorado River Commission of Nevada (CRC) entered into a Forbearance Agreement with Lower Basin Contract holders on December 13, 2007. Exhibit A of the Forbearance Agreement describes the surface water rights on the Muddy and Virgin Rivers, pre-dating June 25, 1929, which SNWA plans to use to create Tributary Conservation ICS, and how the Muddy River flows reaching Lake Mead will be calculated.

SNWA and CRC entered into a Delivery Agreement with the United States of America on December 13, 2007. Exhibit A from the Forbearance Agreement is attached to the Delivery Agreement.

The Guidelines, Forbearance Agreement, and Delivery Agreement require a plan for the creation of ICS (ICS Plan) be submitted to the Secretary of Interior demonstrating how all requirements of the Guidelines will be met. Section G.3.B.1 of the Guidelines outline that an ICS plan will consist of at a minimum the following information:

- a. Project Description including what extraordinary measures will be taken to conserve or import the water
- b. Term of Activity

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<sup>1</sup> “Contractor” in the Guidelines “shall mean an entity holding an entitlement to Mainstream water under (a) the Consolidated Decree, (b) a water delivery contract with the United States through the Secretary, or (c) a reservation of water by the Secretary, whether the entitlement is obtained under (a), (b) or (c) before or after the adoption of the Guidelines.

mainstream of the Muddy River further downstream or will remain in the mainstream of the Muddy River. The full right documented to flow to Lake Mead will be accounted for as Tributary Conservation ICS.

### ***Term of Activity***

The term of activity for this plan is calendar years 2008 and 2009. SNWA anticipates receiving ICS Tributary Conservation credit for Muddy River water into the foreseeable future. As more water rights are acquired and more land is fallowed, the amount of water claimed as ICS Tributary Conservation is anticipated to increase. Subsequent plans will be updated to reflect the acquired pre-June 25, 1929, water rights.

### ***Estimate of Water Conserved***

SNWA currently owns or controls the following Muddy River water rights:

1. *MVIC Shares*. The volume of water represented by MVIC shares is quantified based on a percentage of the total flows (divided by total shares) in the Muddy River at the USGS gage *Muddy River near Glendale, NV* (Glendale gage) less the Upper Muddy River rights owned or controlled by SNWA that reach the gage (Figure 2).
  - a. Owned MVIC shares<sup>2</sup>
    - i. 682 preferred shares in the MVIC estimated to represent up to 5,700 afy
    - ii. 1,921 common shares in the MVIC estimated to represent up to 1,460 afy
    - iii. Additional MVIC shares are actively being purchased by SNWA through an open “request for offers.” As shares are acquired, the water rights represented by the shares will be included in the year-end Certification Report.
  - b. Leased MVIC shares<sup>3</sup>
    - i. Approximately 400 preferred shares in the MVIC. In 2008, a portion of the water represented by these shares will be available for the creation of Tributary Conservation ICS, since the effective

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<sup>2</sup> Muddy River water rights were decreed in 1920 by the Tenth (now Eighth) Judicial District Court. Water rights on the lower Muddy River are divided into 2,432 preferred and 5,044 common shares of stock in the Muddy Valley Irrigation Company.

<sup>3</sup> SNWA has entered into lease agreements with individual share holders for terms ranging between 1 and 10 years.

- If the total amount of water represented by the rights controlled by SNWA described in this plan of creation and documented in the Certification Report (described below) is found to be equal to or less than the amount of water calculated to reach Lake Mead, then SNWA shall be credited with the full amount of water rights described in the plan of creation.
- If the total amount of water rights described in this Plan of Creation and documented in the Certification Report is more than the amount calculated to reach Lake Mead, SNWA shall be credited with only the amount calculated to reach Lake Mead.
- The total Muddy River flow reaching Lake Mead as calculated above includes flows at the USGS gage *Muddy River at Lewis Avenue at Overton, NV* located just upstream of the Overton Wildlife Management Area and unmeasured underflow.

A. Proof of Fallowed Land:

To demonstrate the fallowing of land and the conservation of water, quarterly aerial photography will be flown, ground-truthed and analyzed during the calendar year. A Geographic Information System (GIS) will be used to compare the current irrigated acreage with acreage defined by the water rights as approved by the Nevada Division of Water Resources and the Muddy River decree.

B. Certification Report

- i. In compliance with Section G.3.D of the Guidelines, a Certification Report will be submitted for the Secretary's review and verification demonstrating the amount of ICS created and that the method of creation was consistent with this plan of creation, the Forbearance Agreement, and Delivery Agreement. The Certification Report will be submitted to the Secretary in the year following the creation of the ICS.
- ii. The Certification report at a minimum will include:
  - Proof of acreage fallowed using aerial photography and GIS
  - Gage reports showing inflows and measured returns
  - Calculations of the amount of pre-June 25, 1929, water rights reaching Lake Mead
  - Documentation and calculations of the amount of pre-June 25, 1929, water rights reaching Lake Mead owned or controlled by SNWA
  - Letter from the Nevada Division of Water Resources verifying the quantity of water conveyed through the Muddy River system to the Colorado River mainstream for the purpose of creating ICS

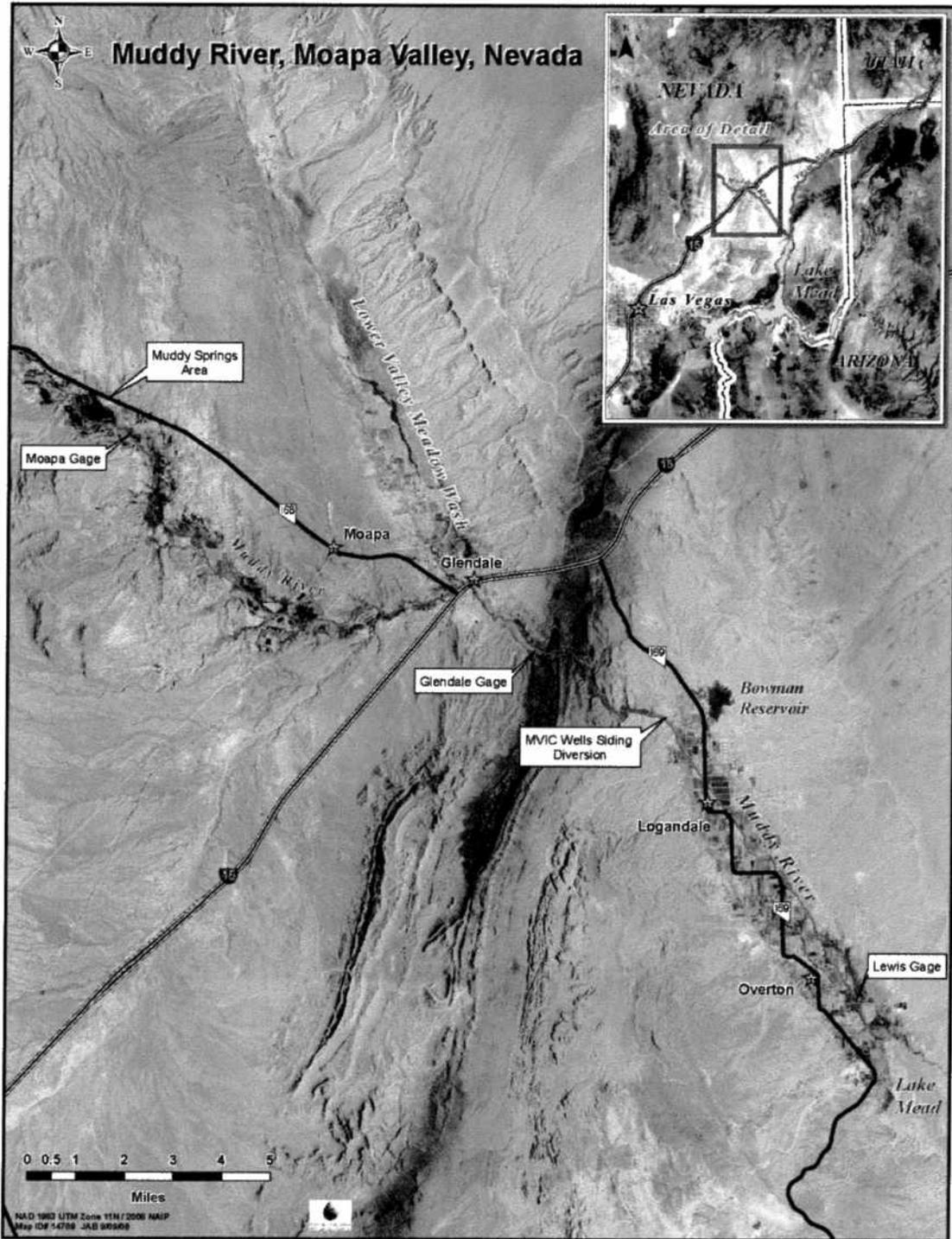
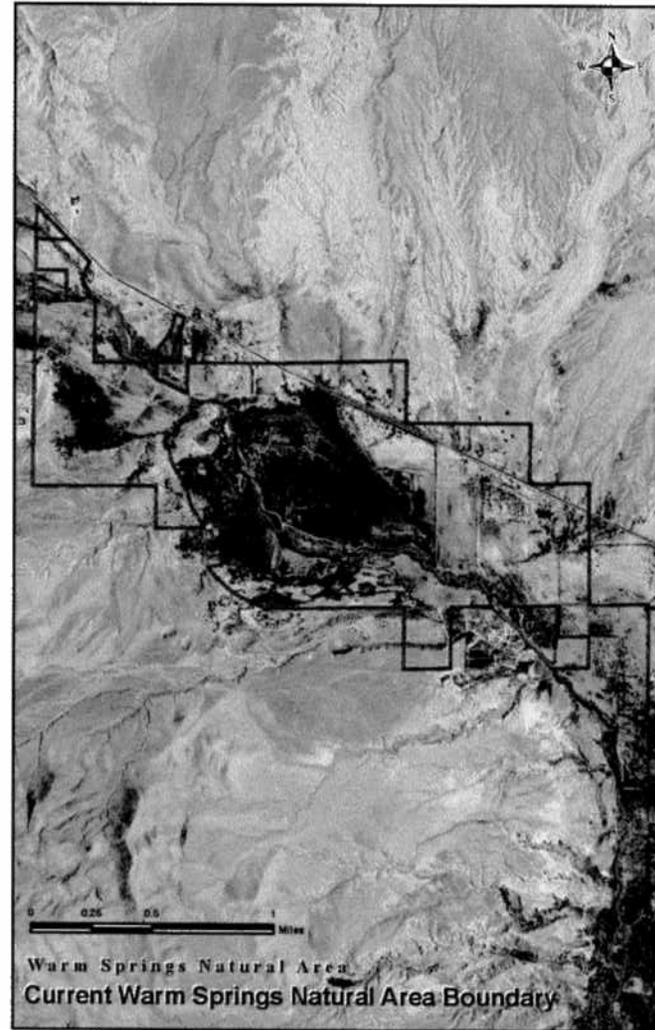
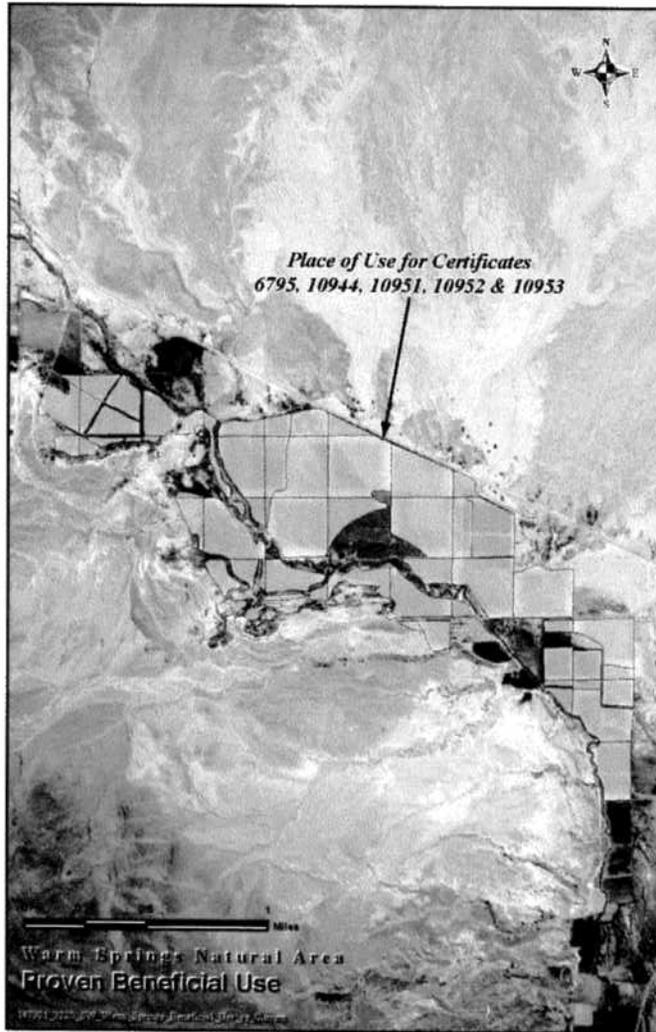


Figure 1. Muddy River.



**Figure 3. Warm Springs Natural Area.**

**IN THE OFFICE OF THE STATE ENGINEER**  
**OF THE STATE OF NEVADA**

**1194**

**ORDER**

REGARDING TRIBUTARY CONSERVATION INTENTIONALLY CREATED  
SURPLUS FOR THE MUDDY RIVER

**WHEREAS**, the Nevada State Engineer is designated by the Nevada Legislature to perform duties related to the management and appropriation of the water resources belonging to the people of the State of Nevada;<sup>1</sup>

**WHEREAS**, pursuant to Nevada Revised Statute (NRS) chapter 533 the Nevada State Engineer acts as an officer of the court for administration and distribution of water from a stream system that has been adjudicated by a district court decree;

**WHEREAS**, the Muddy River Decree was entered on March 12, 1920, by the Tenth (now Eighth) Judicial District Court, Clark County, Nevada;

**WHEREAS**, individuals named under the Muddy River Decree or their successors own water rights on the upper Muddy River;

**WHEREAS**, under the Muddy River Decree, the Muddy Valley Irrigation Company (MVIC) owns water rights on the lower Muddy River and said water is distributed by MVIC to the individual shareholders of MVIC;

**WHEREAS**, pursuant to NRS 533.060 rights to the use of surface water cannot be lost through forfeiture;

**WHEREAS**, pursuant to NRS 533.060 a surface water right that is appurtenant to land formerly used primarily for agricultural purposes is not subject to abandonment if the land has been converted to urban use or the water right has been acquired by a water purveyor for municipal use;

**WHEREAS**, pursuant to NRS 538.171 any appropriation or use of waters of the Colorado River by the Colorado River Commission of Nevada or an entity with whom the Colorado River Commission of Nevada has contracted is not subject to regulation by the State Engineer;

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<sup>1</sup> See Nevada Revised Statutes chapters 532, 533, 534, 535, and 536.

**WHEREAS**, the Guidelines and the consolidated decree in *Arizona v. California*, 547 U.S. 150 (2006), define the Colorado River mainstream to include the reservoirs located on the Colorado River downstream from Lee Ferry within the United States; and

**WHEREAS**, Lake Mead is located on the Colorado River mainstream downstream from Lee Ferry and full pool elevation of Lake Mead is 1,220 feet above mean sea level.

**NOW THEREFORE**, the State Engineer finds that:

1. The Order of Determination of the Relative Rights in and to the Waters of the Muddy River and its Tributaries was certified on January 21, 1920.
2. The Judgment and Decree in the Matter of the Determination of the Relative Rights in and to the Waters of the Muddy River and its Tributaries (Muddy River Decree) was entered on March 12, 1920 by the Tenth (now Eighth) Judicial District Court, Clark County, Nevada.
3. All water rights adjudicated in the Muddy River Decree were acquired by valid appropriation prior to March 1, 1905, and were determined to be in good standing and in use prior to March 1, 1905 as affirmed by the Muddy River Decree.
4. The Muddy River Decree adjudicated the entire flow of the Muddy River and its tributaries, and that there is insufficient flow in the Muddy River to grant any new appropriations.
5. As of the date of this Order there has been no declaration or finding of forfeiture or abandonment regarding any water rights adjudicated under the Muddy River Decree.
6. As of the date of this Order, no proceedings for forfeiture or abandonment have been initiated regarding any water rights adjudicated under the Muddy River Decree.
7. In accordance with NRS 538.171 and Attorney General Opinion 88-16 a permit is not required for the creation or use of Tributary Conservation ICS when an ICS Delivery Contract exists with the Secretary.
8. The creation of ICS as defined in the current Guidelines promulgated by the Secretary and as those Guidelines may hereinafter be amended, is beneficial to the state of Nevada.

# **Virgin River Intentionally Created Surplus (ICS) Tributary Conservation Plan of Creation Calendar Year 2008 and 2009**

## ***Introduction***

The Secretary of Interior (Secretary) issued a Record of Decision for *Colorado River Interim Guidelines for Lower Basin Shortages and the Coordinated Operations for Lake Powell and Lake Mead* (Guidelines) on December 13, 2007, which established criteria for the development and delivery of Intentionally Created Surplus (ICS). One type of ICS is Tributary Conservation, which allows a Contractor<sup>1</sup> to increase tributary flows into the Mainstem of the Colorado River within its state for ICS credits. The conservation of tributary flows into the Mainstream of the Colorado River is limited to water rights that have been used for a significant period of years and were perfected prior to June 25, 1929, the effective date of the Boulder Canyon Project Act.

To generate ICS, the Guidelines require a Contract holder to enter into a Delivery Agreement with the United States of America and a Forbearance Agreement with Lower Basin Contract holders. Southern Nevada Water Authority (SNWA) and Colorado River Commission of Nevada (CRC) entered into a Forbearance Agreement with Lower Basin Contract holders on December 13, 2007. Exhibit A of the Forbearance Agreement describes the surface water rights on the Muddy and Virgin Rivers, pre-dating June 25, 1929, which SNWA plans to use to create Tributary Conservation ICS, and how the Virgin River flows reaching Lake Mead will be calculated.

SNWA and CRC entered into a Delivery Agreement with the United States of America on December 13, 2007. Exhibit A from the Forbearance Agreement is attached to the Delivery Agreement.

The Guidelines, Forbearance Agreement, and Delivery Agreement require a plan for the creation of ICS (ICS Plan) be submitted to the Secretary of Interior demonstrating how all requirements of the Guidelines will be met. Section G.3.B.1 of the Guidelines outline that an ICS plan will consist of at a minimum the following information:

- a. Project Description including what extraordinary measures will be taken to conserve or import the water
- b. Term of Activity
- c. Estimate of the amount of water that will be conserved

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<sup>1</sup> "Contractor" in the Guidelines "shall mean an entity holding an entitlement to Mainstream water under (a) the Consolidated Decree, (b) a water delivery contract with the United States through the Secretary, or (c) a reservation of water by the Secretary, whether the entitlement is obtained under (a), (b) or (c) before or after the adoption of the Guidelines.

- d. Proposed methodology for verification of the amount of water conserved
- e. Documentation regarding any state or federal permits or other regulatory approvals that have already been obtained by the Contractor or that need to be obtained prior to the creation of ICS.

The following sections document each of these requirements. It is important to note that the majority of the information presented below is reiterated from Exhibit A of the Forbearance Agreement and Delivery Agreement.

### ***Project Description***

Virgin River water rights that will be utilized to create Tributary Conservation pursuant to this ICS Plan and Exhibit A of the Forbearance Agreement are decreed and permitted Nevada state water rights with an established history of use prior to 1927, but that have experienced periods of non-use in the interim. Per Exhibit A of the Forbearance Agreement, SNWA is specifically allowed to utilize any and all pre-June 25, 1929, Virgin River water rights to create Tributary Conservation ICS regardless of those water rights history of use after 1928.

The Virgin River begins in southwestern Utah, flows through Arizona and Nevada, and terminates in Lake Mead (Figure 1). The average annual flow of the Virgin River at USGS gaging station *09415000 Virgin River at Littlefield, AZ* for water years 1931 to 2007 was 175,200 acre-feet per year (afy).

Nevada state water rights that predate the Boulder Canyon Project Act (BCPA) on the Virgin River are comprised of pre-1905 priority surface water rights decreed by the Nevada Supreme Court in 1927 for 17,785 afy to the Bunkerville and Mesquite Irrigation Companies, and additional permitted and certificated rights authorized by the Nevada Division of Water Resources.

Retired agricultural water rights acquired by SNWA will be conveyed to Lake Mead along Lake Mead's Overton Arm. The pre-June 25, 1929, water rights conveyed to Lake Mead represent the full right that is and has been historically used for agricultural or could have otherwise been diverted from the Virgin River and fully consumed by the SNWA in Nevada.

Virgin River rights conveyed to Lake Mead will pass through their historic points of diversion and either flow through the irrigation company ditches and return to the mainstream of the Virgin River further downstream or will remain in the mainstream of the Virgin River. The full right documented to flow to Lake Mead will be accounted for as Tributary Conservation ICS.

## ***Term of Activity***

The term of activity for this plan is calendar years 2008 and 2009. SNWA anticipates receiving ICS Tributary Conservation credit for Virgin River water into the foreseeable future. As more water rights are acquired and more land is fallowed, the amount of water claimed as ICS Tributary Conservation is anticipated to increase. Subsequent plans will be updated to reflect the acquired pre-June 25, 1929, water rights.

## ***Estimate of Water Conserved***

SNWA currently owns or controls the following Virgin River rights:

- A portion of Certificate 1153 with a priority date of 1914 for 601.97 afy designated to irrigate a portion of 177.044 acres of land (Figure 2). A portion of this water will be available in calendar year 2008, and in 2009 the full right will be available for creation of Tributary Conservation ICS.
- Bunkerville Irrigation Company: 946 shares representing up to approximately 11,300 afy of surface water rights. In 2008, a portion of the water represented by these shares will be available for the creation of Tributary Conservation ICS, since the effective date of the leased shares is October 1, 2008. In 2009 the full rights will be available for creation of ICS.
- Mesquite Irrigation Company: 694.75 shares representing up to 7,300 afy of surface water rights. In 2008, a portion of the water represented by these shares will be available for the creation of Tributary Conservation ICS, since the effective date of the leased shares is October 1, 2008. In 2009, the full rights will be available for creation of ICS.
- Additional Bunkerville and Mesquite Irrigation Company rights are actively being purchased by SNWA through an open "request for offers." As shares are acquired, the water rights represented by the shares will be included in the year-end Certification Report.

For calendar year 2008, SNWA anticipates creating up to 5,000 acre-feet (af) of Tributary Conservation ICS with the above rights which pre-date June 25, 1929.

For calendar year 2009, SNWA anticipates creating up to 14,000 af of Tributary Conservation ICS with the above rights which pre-date June 25, 1929.

## **Methodology**

Because the acreage represented by the water rights SNWA owns are such a small percentage (< 15%) of the total annual flow of the Virgin River, Tributary Conservation ICS on the Virgin River can be calculated based on the reduction in agricultural acreage as follows:

Virgin River Calculation:

$$\begin{array}{l} \text{Decrease in total agricultural acreage permitted by the Nevada} \\ \text{Division of Water Resources calculated using remote sensing \& GIS} \\ \times \text{ The duty per acre specified by the water right} \\ \hline = \text{Flows to Lake Mead (Elevation 1,220 AMSL)} \end{array}$$

### A. Proof of Fallowed Land

To demonstrate the fallowing of land and the conservation of water, quarterly aerial photography will be flown, ground-truthed and analyzed during the calendar year. A Geographic Information System (GIS) will be used to compare the current irrigated acreage with acreage defined by the water rights as approved by the Nevada Division of Water Resources.

### B. Certification Report

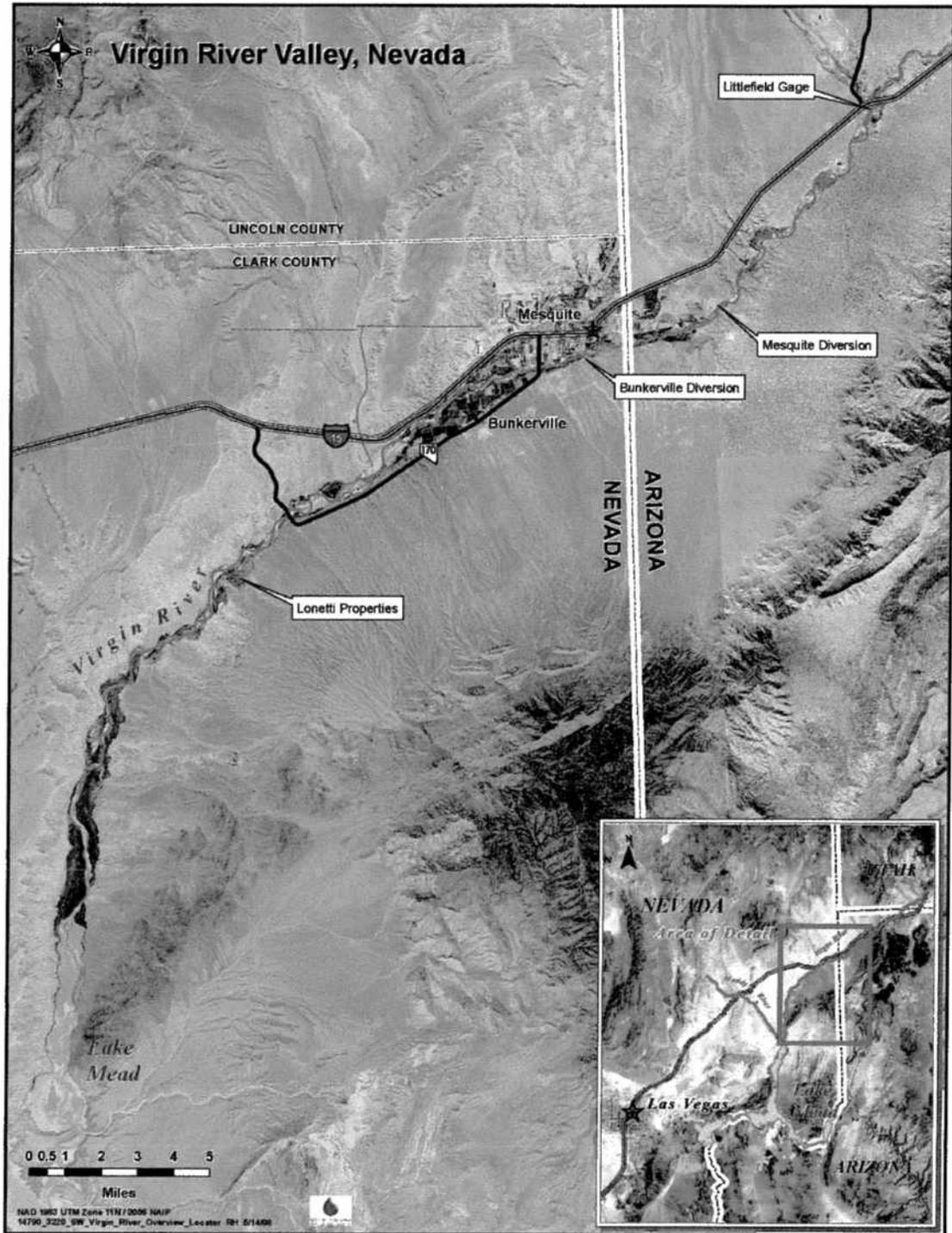
- i. In compliance with Section G.3.D of the Guidelines, a Certification Report will be submitted for the Secretary's review and verification demonstrating the amount of ICS created and that the method of creation was consistent with this plan of creation, the Forbearance Agreement, and Delivery Agreement. The Certification Report will be submitted to the Secretary in the year following the creation of the ICS.
- ii. The Certification report at a minimum will include:
  - Proof of acreage fallowed using aerial photography and GIS
  - Gage reports showing Virgin River flows and diversion
  - Calculations of the amount of pre-June 25, 1929, water rights reaching Lake Mead
  - Documentation and calculations of the amount of the pre-June 25, 1929, water rights reaching Lake Mead owned or controlled by SNWA
  - Letter from the Nevada Division of Water Resources verifying the quantity of water conveyed through the Virgin River to the Colorado River mainstream for the purpose of creating ICS

## ***Regulatory Approvals***

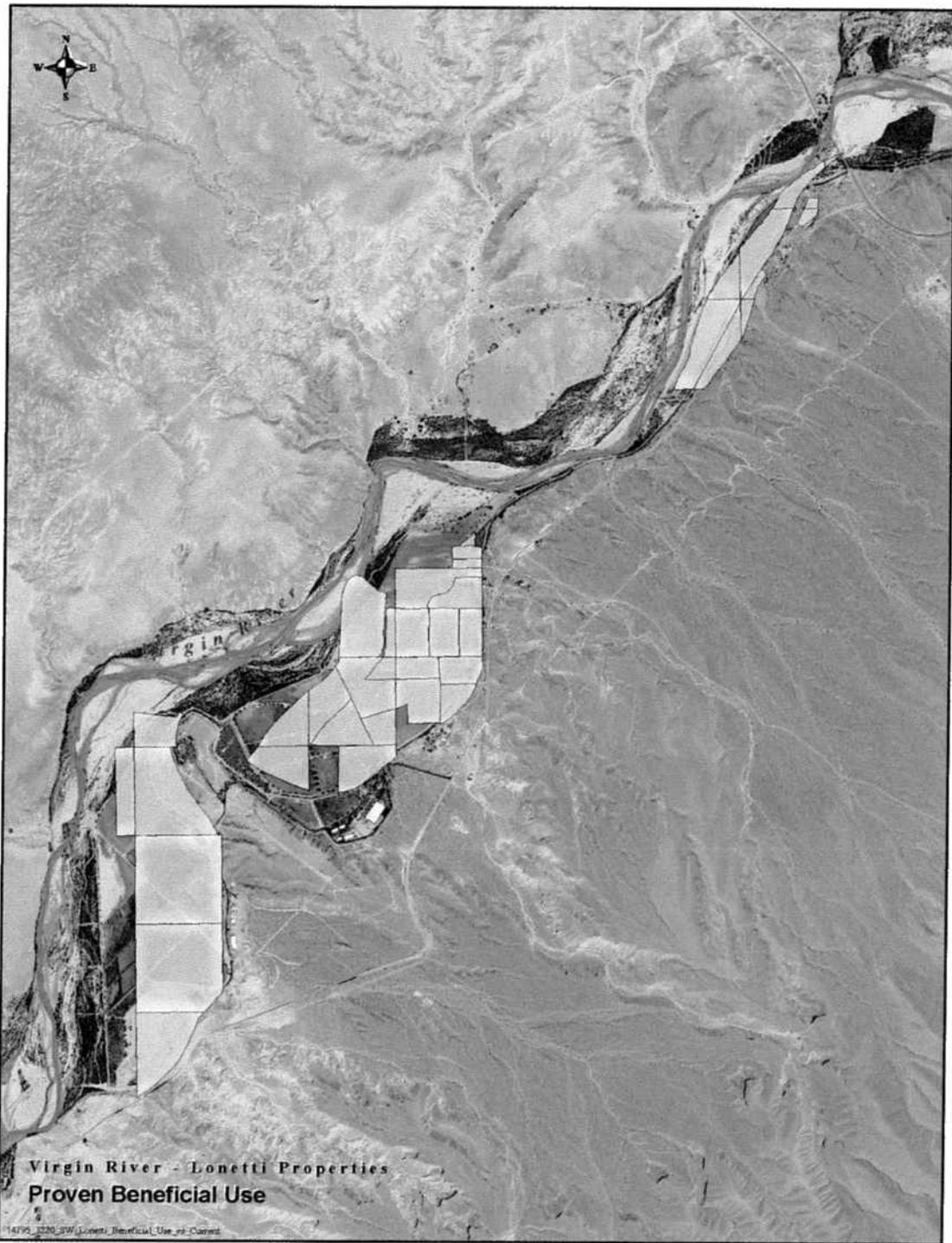
Tributary Conservation ICS on the Virgin River was evaluated in the Environmental Impact Statement and Record of Decision (dated December 13, 2007) for the Guidelines. Similarly, compliance for Virgin River Tributary Conservation ICS was also obtained under section 7 of the Endangered Species Act through formal consultation with the U.S. Fish and Wildlife Service. The Final Biological Opinion for the Guidelines was issued December 12, 2007.

The Nevada Division of Water Resources issued State Engineer Order 1193 on July 15, 2008, regarding Tributary Conservation ICS on the Virgin River (attached). The Order outlines the Nevada water rights on the Virgin River and the following process for verification of Virgin River rights being conveyed to the Colorado River mainstream:

**Nevada State Engineer Order 1193 states...** “An entity with an ICS Delivery Contract, which uses water rights adjudicated under the Virgin River Decree or water rights on the Virgin River issued by the State Engineer with a priority date prior to June 25, 1929 for the creation of ICS, shall file an annual report with the State Engineer's Office. The annual report shall give a full accounting of water rights on the Virgin River owned or controlled by the entity with an ICS Delivery Contract, which have been conveyed through the Virgin River system to the Colorado River mainstream for the creation of ICS. After review of the annual report, the State Engineer shall issue a letter verifying the quantity of water conveyed through the Virgin River system to the Colorado River mainstream for the purpose of creating ICS.”



**Figure 1 – Lower Virgin River**



**Figure 2 – Lonetti Properties Water Rights Place of Use Comparison, Certificates 1153**