

Colorado River Commission of Nevada

Accounting For Nevada's Use of Colorado River Water



McClain Peterson

April 26, 2007

Overview

- Background
 - CRC's Role in Nevada's Accounting
 - Impetus and Legal Framework
- What is the process used today to account for Nevada's use of Colorado River Water?
 - Including a quantitative example
 - A look at the foundation of the process
- Where do we go from here?

Background: *Colorado River Commission*

- 1935 : Colorado River Commission is created
- The mission of the CRC is in part to manage and protect Nevada's Colorado River water resources
- To this end, the CRC acts as the trustee of the resource
 - NRS 538.171 : "The Commission shall receive, protect and safeguard and hold in trust for the State of Nevada all water and water rights, and all other rights, interests or benefits in and to the waters" of the Colorado River.
- Accounting for Nevada's use of Colorado River water is part of the CRC's trust responsibility

Background: *1964 "Decree" in AZ v CA*

- 1964 : Supreme Court "Decree" in Arizona v California
 - Affirms the Lower Basin States Apportionments of Colorado River Water
 - Requires the Secretary to Engage in Colorado River Water Accounting

Accounting For Nevada's Use of Colorado River Water

- Basic Apportionment of 300,000 af
- Diversions Occur at:
 - Saddle Island
 - Near the town of Laughlin
 - Miscellaneous
- Nevada uses a quantitative method, commonly referred to as the return flow credit process (RFC), to track and calculate its use

The RFC Method

- Diversions – Returns = Consumptive Use



Las Vegas Wash
Colorado River
diversions



Components of the Method: Diversions

- Data Necessary to Calculate Diversions:
 - Diversions
 - Colorado River water diverted
 - Las Vegas Valley ground water pumped
 - The relative percentage of each diversion to total water supply

Components of the Method: Returns

- Data Necessary to Calculate Returns:
 - Volume of water flowing into Lake Mead
 - Flow of the Las Vegas Wash (USGS) minus the volume of stormwater
 - The amount of Colorado River water in the flow
 - Diversion Ratio x Flow

Sample Calculation

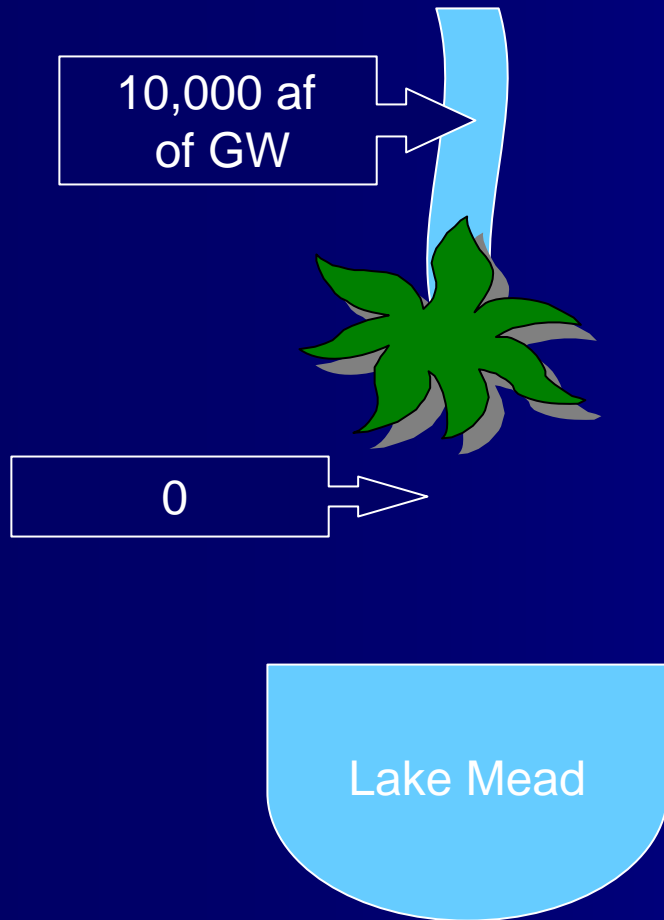
Colorado River Water Diverted	400,000
Local Ground Water Pumped	<u>+ 45,000</u>
Total Supply (400,000 + 45,000)	445,000

Ratio of GW to Total Supply (45 / 445)	10%
Wastewater Effluent	<u>x 200,000</u>
GW Portion (Ratio x Effluent)	20,000

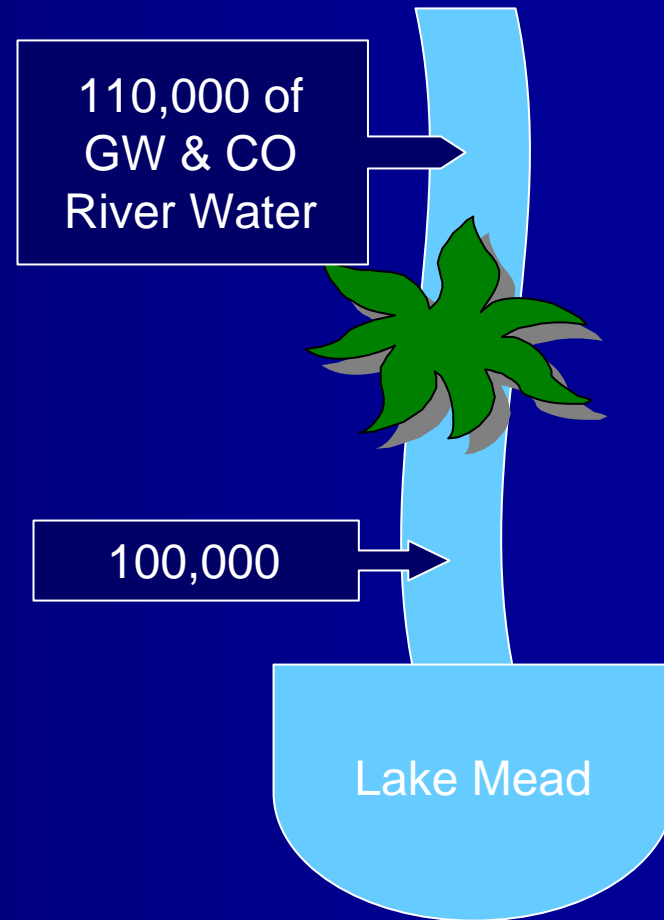
Colorado River Diversions	400,000
Return Flow Credits	<u>- 180,000</u>
Consumptive Use	220,000

Water Consumed By Vegetation In The Las Vegas Wash

1970



2007



Historic Re-use In the Method

1970



Reuse (9k)

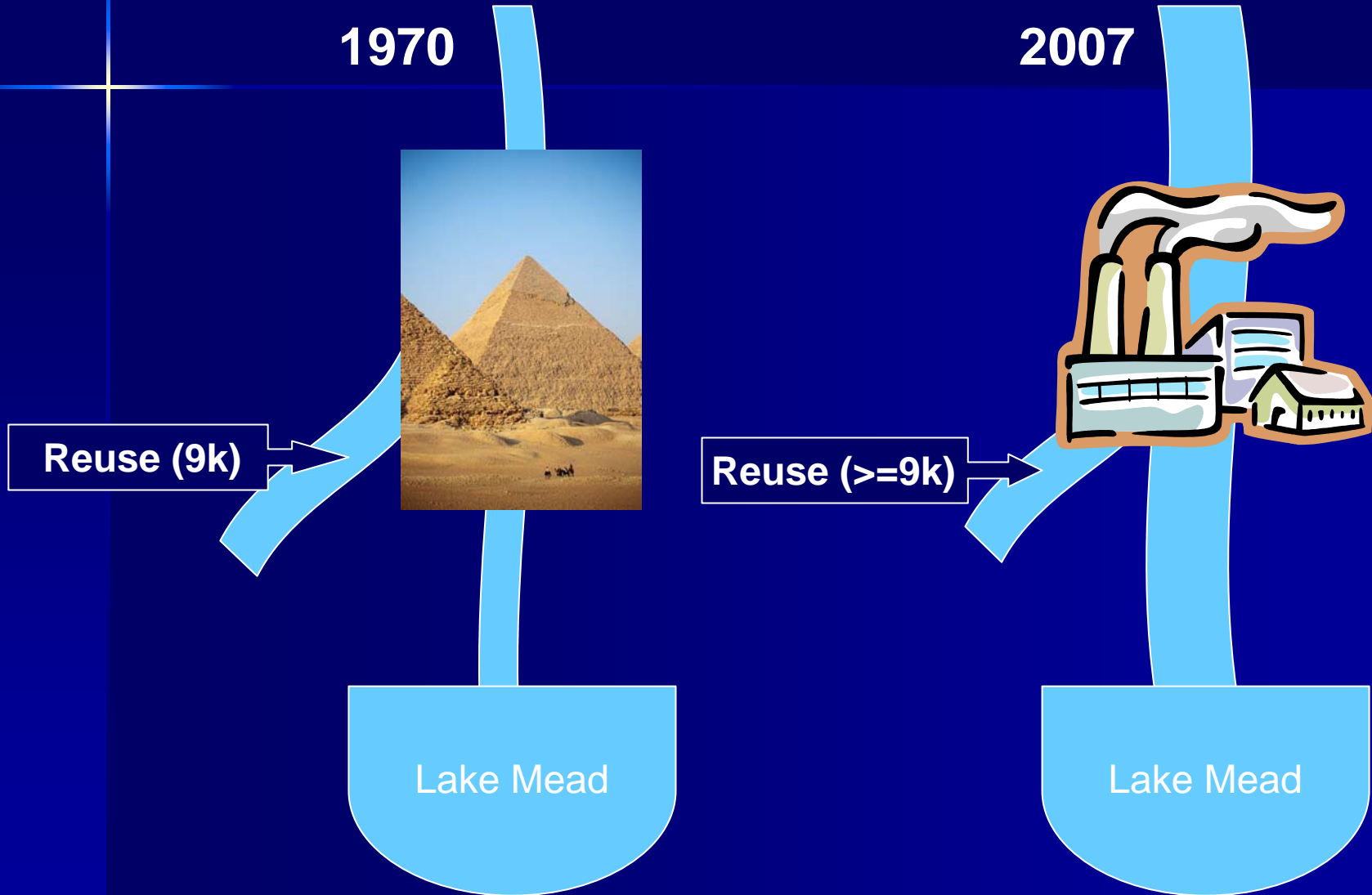
Lake Mead

2007



Reuse ($\geq 9k$)

Lake Mead



Sample Calculation (Cont.)

GW Portion of Effluent (Ratio x Effluent)	20,000
Combined Volume of Other GW Uses	- <u>20,000</u>
Remaining GW	0

Colorado River Diversions	400,000
Return Flow Credit	- <u>200,000</u>
Consumptive Use	200,000

Development of the RFC Method

- 1935 : Colorado River Commission is created
- 1964 : Supreme Court "Decree" in Arizona v California
- 1971 : First Stage of the SNWS is completed
- 1974 : Nevada prompts discussions on calculating return flows in Nevada begin between the Commission and Reclamation
- 1974 - 1984 : The Commission negotiated with the Bureau and other states regarding the details of the methodology

Development of the RFC Method

- Nevada's position was that all flows in the Wash should be credited against diversions from the mainstream
- September 1984 : A final method was agreed upon and issued by Reclamation, *Procedure for Determining Return Flow Credits to Nevada from Las Vegas Wash.*

Where are we going?

- Integration of Imported Nevada Ground Water Into the RFC Method
 - An introduction of a water supply incompatible with the current method will require adaptation
- The Gauge as a Reasonable Substitute for the Current Method
 - With Colorado River diversions supplying 90% of southern Nevada's water resource, it is less likely that ground water will remain a component of the Las Vegas Wash flows