

## DISCLAIMER

Electronic versions of the exhibits in these minutes may not be complete.

This information is supplied as an informational service only and should not be relied upon as an official record.

Original exhibits are on file at the Legislative Counsel Bureau Research Library in Carson City.

Contact the Library at (775) 684-6827 or [library@lcb.state.nv.us](mailto:library@lcb.state.nv.us).

*Continued Review  
of the  
Marlette Lake Water System*



*January 2001*

*Legislative Counsel Bureau  
Bulletin No. 01-20*

ORIGINALS ARE ON FILE IN  
THE RESEARCH LIBRARY

PAGE 1 of 10

ASSEMBLY GOVERNMENT AFFAIRS

DATE: 2-28-03 ROOM: 3143 EXHIBIT F

SUBMITTED BY: SUSAN SCHOLLEY

**CONTINUED REVIEW OF THE  
MARLETTE LAKE WATER SYSTEM**

**BULLETIN NO. 01-20**

**FEBRUARY 2001**

## TABLE OF CONTENTS

	<u>Page</u>
Summary of Recommendations.....	iii
Report to the 71st Session of the Nevada Legislature by the Legislative Commission's Marlette Lake Water System Advisory Committee.....	1
I.    Introduction .....	3
II.   Statutory Authority (NRS 331.165).....	5
III.  Historical Overview .....	6
IV.  Status Reports by State and Local Government Entities .....	9
A.   Division of Forestry, State Department of Conservation and Natural Resources .....	9
B.   Division of Wildlife, State Department of Conservation and Natural Resources .....	10
C.   Division of State Parks, State Department of Conservation and Natural Resources .....	11
D.   Division of State Lands and Nevada-Tahoe Resource Team, State Department of Conservation and Natural Resources.....	14
E.   Buildings and Grounds Division, Department of Administration .....	14
F.   Local Governments .....	15
V.   Water System Status Report, Current Projects, and Suggested Improvements .....	17
A.   Water System Status Report .....	17
B.   Current Projects and Suggested Improvements .....	17
VI.  Bibliography .....	19

VII.	Appendices .....	21
	Appendix A - Carson Water Subconservancy District Report .....	23
	Appendix B - Photographs of Areas Toured .....	117

## SUMMARY OF RECOMMENDATIONS OF THE ADVISORY COMMITTEE

This summary presents the recommendations approved by the Legislative Commission's Marlette Lake Water System Advisory Committee (*Nevada Revised Statutes* 331.165). The Advisory Committee submits these proposals to the Governor of the State of Nevada and the members of the 71st Session of the Nevada Legislature for their consideration.

The committee recommends:

1. Continuation of the project of the Carson City Water Subconservancy District, including a cost benefit analysis and involvement of all stakeholders.
2. Cooperation of Washoe County and the United States Bureau of Land Management with Storey County officials on reinstatement of original right of way of the waterline from Lakeview to Virginia City.
3. That staff of the committee summarize recommendations of each previous interim Marlette Advisory Committee, and their disposition.
4. Support for the commitment by the Department of Administration to perform additional metering of water transported and sold to Virginia City.
5. Conducting a tour, following the 2001 Session, of the following facilities:
  - Yerington Hatchery
  - Federal Lahontan Hatchery
  - Water Master's House at Lakeview
  - Water Treatment Facilities in Carson City
  - Environmental Improvement Projects in the Marlette/Hobart Watershed

## I. INTRODUCTION

The Nevada Legislature's Marlette Lake Water System Advisory Committee is a permanent committee authorized by *Nevada Revised Statutes* (NRS) 331.165. A copy of NRS 331.165 appears on page 3 of this report.

At its meeting of August 19, 1999, the Legislative Commission appointed three members of the Legislature and one staff member of the Legislative Counsel Bureau (LCB) to serve on the Marlette Lake Water System Advisory Committee. The other four members of the committee were appointed by the executive branch agencies specified in NRS 331.165. The members serving on the Advisory Committee between the 70th and 71st Legislative Sessions were:

Senator Lawrence E. Jacobsen, Chairman  
Assemblyman Joseph E. Dini, Jr., Vice Chairman  
Senator Mark E. Amodei  
Robert E. Erickson, Research Director, LCB (nonvoting member)  
Mike Meizel, Chief, Buildings and Grounds Division, Department of  
Administration  
Wayne R. Perock, Administrator, Division of State Parks, State Department of  
Conservation and Natural Resources  
Steve Robinson, State Forester Firewarden, Division of Forestry, State Department  
of Conservation and Natural Resources (January 17, 2001 meeting)  
Roy W. Trenoweth, State Forester Firewarden, Division of Forestry, State  
Department of Conservation and Natural Resources (October 15, 1999 meeting)  
Gene Weller, Deputy Administrator, Division of Wildlife, State Department of  
Conservation and Natural Resources, State Department of Conservation and  
Natural Resources

Additional Legislative Counsel Bureau staff services for the Advisory Committee were provided by Brenda J. Erdoes, Legislative Counsel, Legal Division; Kimberly Marsh Guinasso, Principal Deputy Legislative Counsel, Legal Division; and Bruce Daines, Senior Deputy Legislative Counsel, Legal Division; and Nenita Wasserman, Senior Research Secretary, Research Division.

The Advisory Committee held two meetings during the 1999-2001 interim period. The meetings of October 15, 1999, and January 17, 2001, were both conducted at the Legislative Building in Carson City. Additionally, the Advisory Committee conducted three information gathering tours.

Tours conducted by the Marlette Lake Water System Advisory Committee were:

1. October 15, 1999 - Facilities in the Marlette Lake and Hobart Reservoir watersheds, and pipeline and water facilities between Hobart and Lakeview.
2. November 12, 1999 - Water treatment facilities at Virginia City, and pipeline and water facilities between Virginia City and Lakeview.
3. June 13, 2000 - Rainbow trout spawning and egg harvesting program of the Division of Wildlife at Marlette Lake.

During the course of the 1999-2001 interim, extensive expert testimony was received from the agencies represented on the Advisory Committee District and also from:

- Edwin James, Carson Water Subconservancy District
- Pamela B. Wilcox, Division of State Lands
- Greg Hess, Chairman, Storey County Board of County Commissioners
- Richard Bacus, Storey County Public Works Director
- Jay Howard, Nevada-Tahoe Resource Team

The basic function of this committee has been oversight of matters relating to the Marlette Lake Water System. The Advisory Committee may make recommendations to the Legislative Commission, the Interim Finance Committee, the Department of Administration, the State Department of Conservation and Natural Resources, and the Governor concerning any matters relating to the Marlette Lake Water System.



### III. HISTORICAL OVERVIEW

A comprehensive discussion of the history of the Marlette Lake Water System is contained in Bulletin No. 79 of the Legislative Counsel Bureau - *The Marlette Lake Water System-A Report on the Feasibility and Desirability of its Retention*, February 1969. The following overview summarizes the historical sections of that report and provides additional information that might be helpful as Nevada enters the 21st Century.

The Comstock Lode, one of the richest mining areas in the world, was discovered in 1859 on the eastern flank of Mount Davidson in the Virginia Range. The Virginia Mining District was the first mining district organized in western Utah Territory. The great mining town Virginia City was established nearby, with its post office dating from December 3, 1859. The nearby mining towns of Gold Hill (1859) and Silver City (1860) were soon established, and all three towns supported large populations in the 1860s, 1870s, and 1880s.

The provision of water to the mining towns on the Comstock posed a serious problem in early Nevada. Originally, several nearby springs and streams fed a series of tunnels, flumes, pipes, ditches, and reservoirs that were constructed. By the early 1870s, these supplies of water had become inadequate. As the area continued to grow, a decision was made by the Virginia and Gold Hill Water Company in August 1871 to develop a water system stretching over 21 miles to the west into the Carson Range, part of the Sierra Nevada Mountains. Surface water was plentiful in the Carson Range, but the key to the system was the inverted siphon, pressure pipeline designed by Hermann Schussler, a German-born engineer from San Francisco.

In August 1873, the first water from Hobart Creek in the Carson Range reached Virginia City and Gold Hill. Wild celebrations by residents of the area reverberated up and down the surrounding canyons and mountainsides. Originally, the system included: (1) a small diversion dam on upper Hobart Creek at Red House; (2) a 4.62-mile wooden flume to a tank that marked the start of the pipeline, at an elevation 351 feet higher than the outlet end of the pipeline in the Virginia Range; (3) a riveted, wrought iron, 11.5-inch, pressure pipeline extending seven miles, down to the lowest point on the system at Lakeview and back up to the high point in the Virginia Range; (4) a 4.04-mile flume to a point where Five-Mile Reservoir was constructed; (5) a 5.66-mile flume to tanks located above Virginia City and Gold Hill. The pipe for the system was made of iron plates bent to a cylindrical shape and then riveted. The pipe was fabricated in San Francisco and shipped by train to Lakeview. The pipe came in 26-foot sections and the thickness of each pipe segment varied depending on where engineering calculations showed differences in internal pressure. The first pipe segments were laid on June 11, 1873, and just six weeks later (July 25, 1873) the last section was in place. There were 1,524 joints in the pipeline as laid, and 1 million rivets and 35 tons of caulking lead were used in its installation.

In 1875, a second flume and pipeline was installed adjacent to the original system to double the original maximum production of 2.2 million gallons per day. However, the flow of water in summer months from the Hobart drainage dwindled to about 700,000 gallons per day.

Lumbering operations on the Lake Tahoe side of the Carson Range on Marlette Creek by Duane L. Bliss and H.M. Yerington started in 1873. They had constructed a small dam across the head of the Marlette depression, thereby forming Marlette Lake. In 1876, the Virginia and Gold Hill Water Company received permission to draw water from Marlette Lake to supplement the water from the Hobart Basin.

The dam at Marlette Lake was then raised to a height of 37 feet and a length of 213 feet. The lake formed by these improvements contained about 2 billion gallons of water (6,100 acre-feet). Unlike the nearby Hobart basin, the flow of water into Marlette Lake is plentiful and more consistent from year-to-year, even during dry periods.

From the dam at Marlette Lake, a covered box flume was constructed some 4.38 miles to the north. At that point a three-quarter mile tunnel was driven through the granite ridge dividing Lake Tahoe drainage from Hobart Creek drainage to the east. Another flume of 8.25 miles in length, known as the "north flume," was constructed north of the tunnel to capture water from many small creeks on the west side of the Carson Range. This flume joined the flume from Marlette Lake at the west portal of the tunnel. The tunnel was completed in May 1877, lined with timber for over half of its length, and measured 7 feet high and 6.5 feet wide on its floor.

From the east portal of the tunnel, a 2.77-mile-long flume was constructed to upper Hobart Creek. A storage reservoir with a capacity of 35 million gallons was built a short distance above Red House. Water from the second pipeline and Marlette Lake did not reach Virginia City and Gold Hill until mid-1877.

In 1887, a third pressure pipe was installed in substantially the same location as the first two pipelines. When completed, the water system included three reservoirs, a total of 21 miles of pressure pipes, approximately 46 miles of covered box flume, several structures and one three-quarter mile tunnel. The total investment at that time was in excess of \$3.5 million.

With the decline of the Comstock in the years and decades to come, the fortunes of the water system suffered. In 1933, the water company's name was changed to the "Virginia City Water Company." By 1941, the company started to remove parts of the first (1873) and third (1887) pipelines to replace the flume between Five Mile Reservoir and Virginia City with pipes. Continued failures in the aging pipeline and a lack of funds caused the company to sell the water system to Curtiss-Wright Corporation in 1957. That corporation planned to use water from the system for a proposed missile test site on lands owned by that corporation in Storey County. However, the contract for the missile testing program was never approved. After making certain improvements to the system, Curtiss-Wright subsequently sold it to the Marlette Lake Company. In 1963, the Marlette Lake Company offered to sell the water system to the State of Nevada for \$1.65 million of the state's general obligation bonds. Included in the sale, which was approved by the 1963 Legislature, were water rights, over 5,300 acres of land, easements, pipelines, flumes, Red House, the caretaker's house at Lakeview (Lakeview House, 1873), and other water facilities.

A related water project dates to 1903, when the Nevada Legislature appropriated \$6,000 to secure additional water in Carson City for the State Capitol and State Orphan's Home. An additional \$10,000 was appropriated in 1905 for this same purpose. Over the years that followed, wells were drilled in several locations. In 1959, the Legislature appropriated \$15,000 to purchase water rights in Ash Canyon from the Virginia and Truckee Railway after the latter discontinued rail service to Carson City.

The sale was completed in 1961 and was enhanced with the purchase of the Marlette Lake Water System in 1963. For many years following those transactions, the State of Nevada was able to provide water to its Capitol Complex and maximum security prison. Subsequently, the State began selling water to Carson City, particularly during periods of peak demand.

Other notable dates in the history of the Marlette Lake Water System include:

- Tunnel collapsed in 1957. State of Nevada attempts to re-excavate that tunnel were abandoned after spending over \$50,000.
- Wooden flume from east portal to Red House replaced with a pipeline in 1968.
- Diesel pump installed at Marlette Lake in 1966, with pipeline to Hobart Reservoir for periodic use during dry water years.
- Marlette Dam raised 15 feet in 1959, thus increasing capacity in Marlette Lake to over 4 billion gallons (11,800 acre-feet).
- A 1974 contract between the State of Nevada and Storey County to ensure the supply of water by the State to Virginia City, Silver City, and Gold Hill on a continuing basis, and to convey the siphon system and rights-of-way relating thereto, located east of Highway 395, from the State to Storey County for \$500.