LAS VEGAS VALLEY WATERSHED ADVISORY COMMITTEE
Southern Nevada Water Authority
100 City Parkway
Las Vegas, NV
July 8, 2014
2:00 p.m.

Members Present: Gale Fraser, *Clark County Regional Flood Control District (CCRFCD)*
Priscilla Howell, *City of Henderson (COH)*
David Johnson, *Las Vegas Valley Water District (LVVWD)*
Zane Marshall, *Southern Nevada Water Authority (SNWA)*
Dave Mendenhall, *City of Las Vegas (alt. CLV)*
Tom Minwegen, *Clark County Water Reclamation District (CCWRD)*
Randy Tarr, *Clark County (CC)*

Also Present:

Keiba Crear	Lisa Luptowitz
Doug Drury	Brian Oswalt
Adrian Edwards	Steve Parrish
Dan Fischer	Brenda Pohlmann
Sandra Harris	Peggy Roefer
Chuck Hauser	Andrew Trelease
Gerry Hester	Todd Tietjen
Ebrahim Juma	

1. Welcome/Call to Order
Tom Minwegen called the meeting to order at 2:00 p.m.

2. Public Comment
Seeing no request for public comment, Tom moved forward with the meeting.

3. Introductions
Participants introduced themselves.

4. Approve April 8, 2014 Meeting Summary
Motion to approve the summary passed.

5. Receive an Informational Update on Matters Related to the Las Vegas Valley Watershed Advisory Committee (LVVWAC) on Items that may appear on Future Regular Board Meetings of LVVWAC Members' Appointing Agencies
Gale Fraser, Clark County Regional Flood Control District, noted that flash flood season has begun and implored safety. The Nevada Department of Environmental Protection conducted an audit through the Stormwater Quality Management Committee. Those findings should be available in August or September to member agencies.

Dave Johnson, Las Vegas Valley Water District, reported that the conservation plan update is forthcoming.

Randy Tarr, Clark County (CC), reported that CC is supporting the submission of the Final Nevada Land Management Task Force Report to the Legislative Committee on Public Lands.

Zane Marshall, Southern Nevada Water Authority (SNWA) added that SNWA has an item to enter into an assistance agreement with the Bureau of Reclamation (BOR) to accept a grant to conduct bird surveys in the Las Vegas Wash.

6. Receive Update Regarding Status of Stabilization Projects Below Northshore Road Bridge

Gerry Hester displayed photographs of the effects erosion has had on the Northshore Road culverts and bridge over time. In 2003, the Federal Highway Administration (FHWA) built three weirs to slow down the head-cut. A fourth weir was expected that year as well, however by September of 2004, Weir 3 had a nine-foot net drop. By 2007 the same location had a 23-foot drop and required temporary repairs by the BOR. Those repairs lasted less than four years.

The construction for Weir 4 began with a bid opening in February. Wadley construction won the bid, coming in at $3.7 million. Construction began in April and the target completion date was August 2014. However, the diversion wall at Weir 4 began to sink because of the soil, so in May construction was halted and the completion date was adjusted to October 2014.

In 2009, FHWA developed a master plan to include nine weirs, however the plan did not include bank protection and only one weir would be built every five years. The approximate completion year for that plan was 2040.

7. Receive Presentation on the Climate Change Modeling of Lake Mead: Extrapolating Model Results to Biological Change

This item was presented by Todd Tietjen. The study received financial support from the BOR WaterSMART grant agreement, with matching contributions from the City of San Diego, Metropolitan Water District of Southern California, and SNWA. The purpose of the presentation was to predict how climate change would impact the water quality of Lake Mead. The Lake Mead Model (LMM) uses codes from the Estuary and Lake Computer Model (ELCOM) and the Computational Aquatic Ecosystem Dynamics Model (CAEDYM) developed by the Center for Water Resources. The LMM characterizes physical and biological characteristics of Lake Mead, specifically identifying trends.

Lake simulations were based on lower water surface elevations (WSEL) and changes in inflow volumes. Simulations based on Colorado River inflows were set at 9.23 million acre feet per year (MAF/YR), 14.78 MAF/YR and 7.00 MAF/YR. WSEL simulations were performed for elevations of 1,100 feet, 1,040 feet, and 925 feet.

The Hoover Dam intake structures have a profound impact on Lake Mead because of where water is withdrawn in the water column. Under low inflow conditions, warm water temperatures in Lake Mead are found at greater depths in the water column, and were more prevalent in the second year model simulation. Similar trends were observed when comparing

WSEL at 1,100 feet, 1,040 feet, and 925 feet. The lower intake can pull water down deeper into the water column but is not as significant when the surface elevation is nearest the lower Hoover Dam intake structure at 895 feet. Increases in total inorganic nitrogen (TIN), total phosphorus, total organic carbon and bromide were predicted based on a decrease of WSEL from 1,100 feet to 1,040 feet. TIN concentrations under climate change conditions would increase and cause exceedances in the water quality standard.

Water near SNWA Intake #3 was warmer under lower WSEL model simulations and predicted peaks in effluent tracer and total organic carbon. Simulations predicted suspended solids would increase, likely as the result of increased algal production, but also possibly due to imported sediments from the Colorado River. Changes to water quality are caused by changes in surface elevation; the same results may occur because of prolonged drought or changes in Colorado River hydrology.

The second half of the presentation focused on extrapolating the effects of climate change onto biological changes within Lake Mead. Water temperatures in Lake Mead are predicted to increase throughout the water column. The number of days that surface water temperature will reach 30°C increases from a couple of days to several months under the extreme 90 percentile simulation. Algal parameters cap their growth at 29°C. Chlorophyll a concentrations are predicted to peak earlier under the 90th percentile simulation and decrease during the summer months. A second peak occurs in the fall.

As the algal groups die off, phosphorus has the potential to accumulate in the water. The model only uses currently present algal groups whose growth is limited at 29°C but other groups could potential invade. Additional simulations included algal groups that can withstand 29°C. Smaller celled species tend to dominate over larger celled species under warmer conditions. Cyanobacterial species tend to become more dominant. Lake Mead is already dominated by small-celled species. Cyanobacteria could potentially cause problems because they are bloom-forming and some are toxin-producing species. Cyanobacteria produces significant blooms, but as long as phosphorus remains the limiting nutrient and loading is maintained at the current levels, blooms should be infrequent. Potentially toxic species are present in the lake, but toxin has not been detected during monitoring.

Under the simulation, there is a slight potential for increase in chlorophyll a. In addition, shifts in algal species composition are possible and have the potential to change the availability of food to the rest of the food chain.

Dissolved oxygen levels at the confluence have been falling since June. During the July 2, 2014 sampling, the bottom 10 meters of the water column between the Colorado River confluence and CR390 was anaerobic. Dissolved oxygen levels below 4 mg/L were found 10 additional miles into the lake, near the bottom. The Colorado River is entering Lake Mead as an interflow or overflow since the onset of stratification. Warmer inflow from the Colorado River may be contributing to the low dissolved oxygen levels. Anaerobic conditions have been seen before. There is no apparent impact to fish or recreation and thus far, no increase in phosphorus in the water column. Monitoring of dissolved oxygen and phosphorus will continue. Modeling efforts will be expanded to incorporate operating scenarios from Glen Canyon.

8. Approve the 2013 Regional Water Plan Accomplishments Document

Motion to approve the Regional Water Plan Accomplishments Document passed under the condition that two edits be made to the document.

9. Receive an Update on LVVWAC 2012 Strategies Document

Peggy Roefer provided the update. She began with a brief history. In 2009, the Regional Water Quality Plan was completed and adopted by all members' boards. In 2011, the Annual Operating Plan outlined tactics which were assigned to the appropriate agency for meeting the goals developed in the Regional Water Quality Plan. In 2012, tactics were replaced with accomplishment documents. Since then, the 2012 and 2013 Accomplishment Documents have been completed.

The 2012 Strategies Document identified six goals supporting the Regional Water Quality Plan. Peggy reviewed the six goals and associated strategies and sought feedback regarding potential updates. Tom Minwegen requested that the Accomplishments Document maintain ties to the goals developed in the Regional Water Quality Plan. Gale Fraser's asked to clarify what committee and document preceeded the LVVWAC. Peggy stated that the Las Vegas Wash Management Advisory Committee preceded the LVVWAC and the Las Vegas Wash Comprehensive Adaptive Management Plan was completed for that committee. Members expressed that they would like to review all the documents and discuss them at a later meeting.

11. Set Next Meeting Date and Propose Items for the Next Meeting's Agenda

Suggestions include an update on the Waters of the United States Notice of Proposed Rulemaking, an update on the MS4 audit and results and discussion of a letter of support of the lower Las Vegas Wash erosion control projects.

12. Public Comment

There were no comments. Meeting adjourned.