

Moab watershed study completed

Eric Trenbeath Moab Sun News | Posted: Wednesday, September 27, 2017 7:07 pm

Findings from a completed U.S. Geological Survey (USGS) watershed study for Moab and Spanish Valley were presented on Thursday, Sept. 21, at the Grand Center to an assembled crowd of about 75 people.

The three-year study, which began in 2014, was spearheaded by the Utah Division of Water Rights (DWRI), to determine the rate of recharge for the Glen Canyon Group and Valley-Fill aquifers in order to arrive at a water budget for Moab and Spanish Valley.

The DWRI plans to use the study's findings to aid in the development of a groundwater management plan to guide future development in both the Grand and San Juan County portions of the valley.

“USGS did a great job on their study of the groundwater resources for Moab/Spanish Valley,” DWRI southeastern regional engineer Marc Stilson said. “The study helps us understand and more precisely define the safe yield from the valley's groundwater aquifers.”

Scientist Phil Gardner said the study estimated an annual watershed budget of 12,000 to 14,000 acre-feet of water. One-acre foot of water equals 326,000 gallons of water. The average home in Moab and Spanish Valley uses approximately 185,000 gallons of water per year.

Stilson said that current groundwater withdrawals in Moab and Spanish Valley total close to 4,000 acre-feet annually, but that on paper, more than 20,000 acre-feet have been allocated. He said most of the allocated water rights are held by Moab City, Grand Water and Sewer Service Agency and San Juan Spanish Valley Special Service District; they are not currently in use.

The total watershed includes Negro Bill and Ice Box canyons that don't drain into the Moab Valley. An estimated 1,000 acre-feet flow down those drainages directly into the Colorado River, leaving Moab/Spanish Valley with an estimated water budget of 11,000 to 13,000 acre-feet.

Gardner said the current water budget estimate is slightly more than half of the 22,000 acre-feet estimated by a 1971 study.

“What kept us up at night was wondering what was wrong with that first study,” Gardner said.

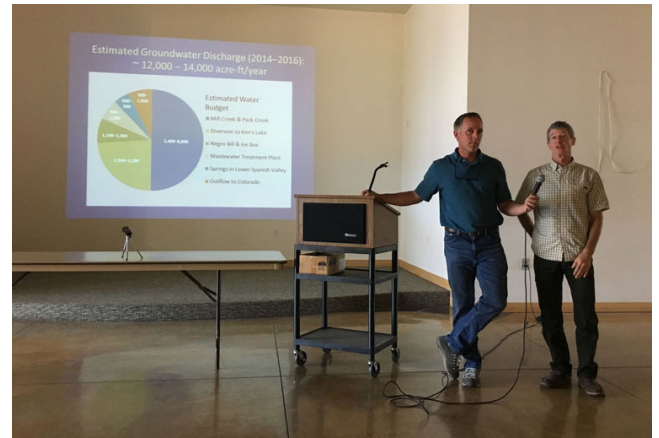
Both studies focused on measuring baseline discharge rates into the Colorado River through springs and streams, and through subsurface flows, to arrive at an estimate for recharge rates.

“Recharge components are nearly impossible to measure but it can be measured on the discharge end,” Gardner said. “But the tricky one is the subsurface discharge.”

Gardner said the biggest discrepancy was in the 1971 estimate of subsurface discharge, which he estimated at 11,000 acre-feet. The current study estimates 300 to 1,000 acre-feet.

Gardner said that there are many more wells in the valley today that help scientists measure “transmissivity,” or water's ability to move through aquifer material such as sand and gravel.

“(The 1971 study's authors) had much less information than we have today,” Gardner said. “When you



Phil Gardner and Vic Heilweil

U.S. Geological Survey scientists Phil Gardner and Vic Heilweil responded to questions at the Grand Center on Thursday, Sept. 21, about a presentation on the findings from a Spanish Valley groundwater study. [Photo by Eric Trenbeath / Moab Sun News]

look at the new information, you have to conclude that his estimate was way too high.”

The Glen Canyon Group Aquifer is the sole-source aquifer for culinary water in Moab and Grand County. It is located above the eastern benches of the valley in and around the Sand Flats area, in the porous Navajo sandstone.

USGS scientist Vic Heilweil said the study has shown that the aquifer is primarily recharged from high up in the La Sal Mountains, and that precipitation doesn't play as much of a factor as previously assumed.

Heilweil said that it was previously thought that runoff from rainwater helped recharge the aquifer by seeping in through washes, but that a harder layer of sandstone beneath the surface causes much of the water to run off.

“This area is not the big area of recharge that we thought,” Heilweil said.

The Valley-Fill Aquifer is in the valley bottom, where water is stored in sand and gravel. It is recharged primarily from the Pack Creek drainage. Independent wells in the San Juan County portion of Spanish Valley draw from this aquifer.

In 2007, San Juan County applied to DWRI to appropriate 5,000 acre-feet of water from the Valley-Fill Aquifer on rights obtained in 1967. The original water rights application called for surface water diversions from the San Juan River to be stored in a reservoir in southern San Juan County.

Protests to the transfer were filed by the City of Moab, the Grand Water and Sewer Service Agency, the Bureau of Land Management (BLM) and the Utah Division of Wildlife Resources over concerns of insufficient water availability.

Private citizens, and conservation groups such as the Canyonlands Watershed Council and Living Rivers, also protested.

In August 2013, DWRI granted only 500 acre-feet, pending the conclusion of the USGS study.

Living Rivers Conservation Director John Weisheit said that the study confirms what he has feared all along – that the system is overallocated.

“Moab is just like the rest of the Colorado River Basin,” Weisheit said. “Supply is down, consumption is up.”

Weisheit is worried about what increased development in Spanish Valley will do to the area's groundwater supply.

“The developers of water resources have no respect for the limits of nature and their chase for more and more water will only aggravate the scarcity issue we all face together,” Weisheit said. “We need to respect our carrying capacity or we'll be drinking Colorado River water, which is already overallocated.”

Grand County Council member Mary McGann said it is good news to find out that Moab and Spanish Valley are currently using less water than was going into the system. But she said, “We have to change our assumption that there isn't as much going in as we thought there was.”

Stilson said that the next steps in development of the proposed groundwater management plan will be to study and review the final USGS report; hold public meetings to receive water user and stakeholder input; develop proposed policy recommendations and finally submit those recommendations to the State Engineer for establishment of the Groundwater Management Plan.

“This process will probably take a couple of years to complete as there will undoubtedly be a lot of careful considerations about what to recommend for inclusion in the plan,” Stilson said. “A more robust monitoring system measuring water levels in wells around the valley and the volume of spring discharge

should certainly be included in the mix.”