# Analysis Of Cedar Valley Water Presented To WAC

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Jeremy Aguero, principal analyst with Applied Analysis, presented a Water Resource Economic and Fiscal Analysis to the Water Advisory Committee last month.

Aguero started with a summary of what his analysis found, explaining that research suggests groundwater levels have been eroding for the last 50 years, that Iron County's economic climate supports continued growth but that it will place additional demand on the water supply and the long-term water demand is expected to exceed capacity, which can produce economic and ecological consequences.

He then used a timeline of events related to water rights to explain and identify the issue the Central Iron County Water Conservancy District (CICWCD) is currently facing: water resource stability; an issue facing not just Iron County but areas nationwide. Aguero discussed the patterns of drought since 2015 and commented on the projected population growth of Iron County as complications to planning for water sustainability in the future.

He added that as a response to this issue the CICWCD was created in order to manage the demand for water and plan for the future. The CICWCD's three main objectives for trying to rectify the overuse of water in Cedar Valley are to import, recharge and conserve water.

"(CICWCD) is an entity that has the responsibility of making sure there is safe, sufficient and stable water resources for the entire region," Aguero said.

The Utah State Engineer determined that the safe water yield for the area is 21,000 Acre Feet per year, but current depletion levels are measured at 28,000 Acre Feet per year. The suggested solution to solve the overuse was to: reduce water rights starting with the most junior in 2030; reduce water rights every 10 years to reduce depletion by an average of 6,000 acre feet every decade; and do a final reduction in 2070 to bring non-regulated rights to 20,143 acre feet in the Cedar Valley Basin.

## "I assure you conservation alone isn't going to solve this problem"

*Jeremy Aguero, Applied Analysis*

The CICWCD Groundwater Management Plan Committee responded to the State Engineer's plan with a more extended timeline: reduce water rights starting with the most junior in 2035; reduce water rights every 15 years; and complete a final reduction in 2090.

Aguero discussed Iron County's current economic climate as a factor in determining a solution as well, saying Iron County is one of the fastest growing counties in Utah and reviewed unemployment rates, median earnings, poverty rates, educational attainment, personal income and gross domestic product – which generally point to a strong economy.

He also reviewed Iron County's water demand and supply outlooks. Current depletion of water from well pumping, subsurface outflow, evapotranspiration and valley springs is divided mainly amongst irrigation for agriculture (75.9 percent) and municipal uses (18.8 percent).

"There's a lot of folks that would like us just to say 'let's just convert all this agriculture that we have in the state; that we don't really have a water problem, what we have is an agriculture problem,'" Aguero said. "That, to me, seems to ignore the importance of agriculture to an economy like this one and others throughout the western United States."

Assuming no conservation measures are put in place, municipal water depletion is expected to reach over 20,000 acre feet and agricultural depletion to reach 23,000 acre feet in 2080. Aguero provided several variations of conservation efforts between both sources of depletion to demonstrate that total water demand by 2080 could be anywhere from an expected 57,000 acre feet per year (no effort) to a projected 30,000 acre feet per year.

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## Aguero said there is an estimated of 50,000 acre feet of water rights owned, but only 21,000 acre feet of water are actually available.

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"We have essentially developed more water rights, secured more water rights than actually exist in terms of the water that's there," he said. "… This is why importation of water is such a critical, important part of this entire conversation, because I assure you conservation alone isn't going to solve this problem. It's got to be a combination of a number of strategies."

In addition to concerns of sustainable water sources, the Utah Geological Survey concluded that the long-term overuse of groundwater is the cause of land subsidence and earth fissures found in Cedar Valley.

“Each one of (the survey findings) essentially comes to the conclusion that drawing more water out of the ground is creating pressure on the ground, leading to environmental activities including everything from vegetation to fissures forming in the area and they are all problematic,” Aguero said.

Aguero also discussed the potential importation projects from Pine Valley and Wah Wah Valley, which could theoretically be available in 2025 and 2040 respectively and potentially increase CICWCD supply to 47,275 acre feet (with the safe yield of 21,000 acre feet considered). However, that additional supply is expected to be insufficient without added conservation measures in both municipal and agricultural uses.

He also discussed projected impacts on the aquifer’s running deficit (7,000 acre feet per year), which is currently estimated at 415,500 acre feet of water since 1940, and implications on ground water levels. Aguero said with the least aggressive water strategy, the total estimated aquifer deficit will be 507,000 acre feet by 2025 (24,000 acre feet per year of average additional deficit); with the most aggressive strategy, the water deficit could be relieved by 2065.

Aguero reviewed the potential economic impacts by implementing new water infrastructure, an estimated 419.3 million dollar investment for importing water from Pine Valley and Wah Wah Valley, as well as by doing nothing to improve water infrastructure.

“We’re talking about the stabilization of water, respecting the fact that there’s some uncertainty relative to at least 7,000 acre feet of water that’s out there,” he said. “We’re talking about developing a plan to protect this economy, to protect those residents, to protect those businesses overall. We’re also talking about the potential for growth. … Development of those water resources in order to ensure the ability to meet the expectations for growth overall, means developing these two water infrastructure projects, or combined one water infrastructure project … it’s another 41,000 residents, another 14,000 households, another 1.26 million dollars every year in personal income and another 2.3 million dollars in economic activity.”

He also presented several fiscal considerations to the committee, including the financing of the potential importation projects, debt service and operation and maintenance costs of the new infrastructure.