Water resources management at Fort Huachuca continues 15 years later

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Story Highlights

- Fort Huachuca's mission, as well as the region's water needs, depends on groundwater availability.

*Photo credit **Jennifer Caprioli (USAG Fort Huachuca)***

A Soldier examines one of Fort Huachuca's retention basins, located along Christy Street, Tuesday afternoon. The basins are used as a best management practice to manage stormwater runoff to prevent flooding and downstream erosion.

FORT HUACHUCA, Ariz. -- Since 1994, Fort Huachuca's personnel have been reducing, reusing and recharging the fort's water supply by implementing numerous projects and educating the work force and community about water and its importance to the installation.

The need for efficient water resources management, which encompasses water conservation, water augmentation, and reuse and recharge of treated waste water, is because Fort Huachuca is located in an area that receives about 15 inches of rainwater per year. Fort Huachuca's mission, as well as the region's water needs, depends on groundwater availability.

For the past 15 years, Fort Huachuca has reduced groundwater pumping by 60 percent through projects such as installing artificial turf on physical training fields, waterless urinals, installing water-efficient irrigation, and exploiting rainwater for irrigation of grassy areas.

"Implementing efficient water resources management is particularly important in this area because we're extracting, or using, more groundwater than is being replenished into the system every year," explains Tom Runyon, hydrologist in the Directorate of Public Work's Environmental and Natural Resources Division.
Runyon uses the "bank account analogy" to describe water usage by explaining, "we're drawing more money than we're putting into our bank account."

That means, at some point in the future, there is going to be a supply problem, he notes, explaining also that our use of groundwater competes with ecosystem needs for that same water.

Groundwater helps support perennial flow, which is year-round flow, in the San Pedro River. Some of the water used by Fort Huachuca and the community would have

eventually discharged into the San Pedro River.
Runyon says the first step is to "balance the bank account," then we have to account for all the time in which we were drawing at a rate that was higher than the rate it was being replenished.

"We've already impacted the groundwater system and potentially impacted flows in the San Pedro River," he says. "If we could get to a point where we're not just balancing it, but replenishing the aquifer, we're going to start repairing some of the damage that's been done."

Runyon believes we're about halfway to the point of balancing the aquifer, since 2004, but he notes it becomes more difficult once the straightforward initiatives, such as the waterless urinals, fixing leaks, and putting in action an aggressive irrigation policy, are tackled. "Our next steps are going to be difficult," he adds.
One of the most recent initiatives being put into place comes from personnel at Mountain Vista Community.
It began with an Army-wide utility initiative to charge residents who overuse gas and electricity, or give a credit for those households that use less than the household's monthly average.

"Sierra Vista and the Huachuca area have a different issue than most of the Army installations, when it comes to water," explains Sylvia Pete, chief of DPW's Housing Division.

"We elected, at Fort Huachuca, as part of our community management development plan, to include metering water so we could identify people who were using a lot," she explains, adding they also want to detect water leaks and water abuse.

Pete also notes the water metering system hasn't been made mandatory across the Army like the charging or credit for gas and electricity, but it's important because the system will allow MVC personnel to be able to detect not only underground water leaks quickly, but problems inside the house, which will help conserve more water.
Pete says they are still in the process of installing the meters and ensuring they are working correctly. MVC plans to have all meters installed by mid-August.

"As soon as they [MVC personnel] see there is a problem and they [residents] are using more than normal, they go in and do [a] utility audit of water, gas or electricity," Pete says.

They are going to do mock billing for a solid year, which is going to consist of metering the utilities each month, and educating people on water conservation.

"That's a huge step for us," Runyon explains, adding that metering in and of itself can save a lot of water through raising people's awareness and managing leaks.

By 2014, there will be 1,064 houses, which will be new construction, construction within the last 10 years, or historic units. All of these units will have a meter for water usage, as well as electricity and gas.

Runyon says they are also trying to go one step further and are experimenting with gathering rainwater from rooftop runoff and recharging it into the ground by putting it in a drywell, which could be a future initiative.

"In my opinion, rainwater represents an untapped resource," he says, noting 80 percent of the water needs at a military installation do not require drinking water. Examples of these include washing vehicles, construction, irrigation and cooling towers.

"If you harvest rainwater and do some amount of treatment [to it], that could meet a lot of demands that are out there," he says.

For more information on how to conserve water and energy, visit the Water Wise and Energy Smart Program's Web site, www.ag.arizona.edu/cochise/wwes.