CEDAR CITY – The state water engineer warned Iron County officials more than a year ago, to fix their water problems or he would.

In January 2016, representatives from the Utah Division of Water Rights held a public meeting at Cedar High School. There, the assistant state engineer James Greer told officials and residents that the Cedar Valley aquifer supplying most of the water to Cedar City, Enoch, Kanarraville and the unincorporated areas was supplying more water into the community than is available, resulting in overmining.

Greer’s figures showed that the aquifer could safely yield 21,000 acre-feet of water on an annual basis but instead was generating an estimated 28,000 acre-feet, or 7,000 more acre-feet than it can handle.

Water is typically measured in acre-feet, referring to the volume of water that would cover 1 acre to a depth of 1 foot. One acre-foot is equal to about 326,000 gallons, or enough water for one year for a family of four.

“We’re only getting about 20,000 acre-feet recharge to that aquifer annually every year,” Greer said.
Greer admitted to attendees that state officials are at fault for the deficit, at least in part, as they appropriated more water rights in the 1960s than were available in Iron County.

Two decades of lower-than-normal precipitation has also impacted the aquifer, he said.

State Water Engineer Kent Jones told county officials they will need to create a groundwater management plan to restore the rapidly depleting aquifer that, at current yields, cannot continue to meet water demands in Iron County. If the county is unable to do so, he said, the state must step in and if necessary begin eliminating water rights issued after 1935.

The state water engineer issued similar orders in 2007 for residents in the Beryl-Enterprise area to create a groundwater management plan. That plan came after it was determined the groundwater had been depleted faster than it could be recharged.

The 118-year plan was finished in 2012 and was adopted by the state water engineer.

According to the plan, the goal was for water depletion to be reduced over time until it matched the safe yield and included the elimination of water rights, with the newest ones first.

While Greer told Cedar City News it’s likely it will take Iron County a similar amount of time to finish its management plan, Central Iron County Water Conservancy District Executive Director Paul Monroe said he would like to see it done sooner than later.

“I don’t want to take five or six years to put this thing together,” Monroe said. “I’d like to see us have it finished before that time.”

Of late, a 10-member committee has already been formed to start creating that plan.

“The committee will be meeting monthly in an effort to solve some of our water challenges and help prevent the loss of personal water rights,” Cedar City Councilman Paul Cozzens said. “We’ve already met three times and discussed many options such as importing water, water conservation, unused water rights, future growth and recharge projects.”

In the meantime, CICWCD board members are continuing to work on several projects to restore the aquifer in hopes they can avoid the state water engineer having to take water rights away.

“If we don’t solve this problem, the state engineer will be forced to begin reducing water rights to restore the aquifer so we have to find ways to help solve the problem, there’s really only three ways to restore the aquifer – conservation, importing new water and recharge – that’s it,” Cozzens said, who has served on the board for five years and is in his first year of his second term.

**Airport recharge project**

One of these and really the first of its kind is a project that Cedar City has been doing for nearly 10 years.
Located on airport property, the project uses several ponds to recharge about 1,800 acre-feet of water a year. CICWD is also looking at the option of using the wastewater treatment plant to put 2,600 acre-feet of effluent to better use through agriculture and recharge.

**Enoch Graben recharge project**

The Enoch Graben Recharge project, started in late October 2016, is recharging the Enoch Graben aquifer and is a combined effort between the district, private property owners and Enoch City.

"We live in a desert. Clean ground water is always going to be the life source of the community, especially economically," Enoch City Manager Rob Dotson said, via a recent press release issued by the district. “Projects like this help to protect resources that we can only safeguard if we take responsible steps.”

Water began flowing through the pipe after property owners were finished using it for the season and will continue through the winter months. The water there only travels a few feet before it is absorbed into the ground.

The Graben area was a free-flowing spring more than 60 years ago, Monroe said.

“Some areas in the Graben area are near 100 feet below historic levels so the area is absorbing water like a conduit. It’s just sinking right into the ground immediately.”
The ground filters the water as it moves down. It is literally reversing years of taking water out of the aquifer and putting it back into the underground reservoir that acts as a storage without evaporation.

**Quichapa Lake recharge project**

Quichapa Lake fed by Coal Creek sits just west of Cedar City. However, the water there is largely wasted as it never makes it into the aquifer.

“Quichapa has lot of evaporation and that water just goes to waste,” Cozzens said. “The lake has so much clay and silt that has been built up over eons, it won’t allow the water to naturally percolate and recharge the aquifer. That water out there is absolutely no good to us.”

Officials from Cedar City, Iron County and the conservancy district along with property owners have worked together to build a new diversion structure that will divert excess Coal Creek water before it ever makes it to the lake.

The water will then be channeled northwest, under state Route 56, and pumped to a recharge area near Cedar City’s municipal well.

The project is located in an area that has seen the largest water level declines, Monroe said, as well as known subsidence at the ground surface.

To build the project, CICWCD received a $100,000 grant from the Enterprise and Iron Conservation District, which is under the Utah Department of Agriculture and Food.

“This project is going to help reverse the current trend of drawing down more water from the aquifer than what is being replenished,” Cozzens said. “So the majority of the water that is traveling to the Quichapa Lake and is wasted will now be captured and diverted to use to recharge the aquifer.”

**Flood mitigation**

Finally, the conservancy district is taking advantage of an opportunity to temporarily put water back into the aquifer via a flood mitigation project using a gravel pit owned by Western Rock.

The project was not built with the intention of recharge efforts but rather a way to help mitigate flooding during the spring months. However, Cozzens saw a chance for the district to use the water being pumped into the gravel pit as not only flood mitigation but as a way to recharge the aquifer.

The city had to initially get approval from the Federal Aviation Administration due to the project’s location near the airport and concerns that the water would draw in birds. As a result, airport personnel took steps to safeguard the airport runway from the birds.
City workers used 1,000 feet of 33-inch concrete pipe to pump the water from Coal Creek to the pit. By using 650 feet of used pipe the city had laying around the entire project only cost the district about $5,000 and the city another $5,000. It was completed in February and has already dumped more than 500 acre-feet of water into the pit with about 60 percent already going into the ground for recharge efforts, Cozzens said.

“This has been an amazing side benefit and a wonderful opportunity for us to be able to put water into the aquifer,” Cozzens said.

In addition to recharge projects, the conservancy district is also working on importing water from another basin located in the West Desert and conservation efforts to help restore the aquifer. Cedar City News will continue to cover these issues and bring our readers more information on what is being done to solve these issues affecting all Iron County residents.