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By Hillary Hamm, Daily News staff writer
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Moses Lake is called a desert oasis.

The central Washington city sits on the shores of a like-named expanse of fresh water situated in the dryland of Grant County. Nearly 30,000 people live in an area supported by agriculture as the base of the economy.

More than 90 major industries and businesses contribute to growth in the area and bolster the city as a distribution and shipping hub in the Columbia Basin, exporting everything from sugar, potatoes and frozen foods to rocket propellants and silicon.

The expansive lake hasn't kept the city from experiencing water issues. In fact, the city draws from the Grand Ronde aquifer at a rate that has reportedly caused the levels to drop more than three feet each year.

City leaders aren't fretting yet.

City engineer Jerry McFaul said the decline hasn't impaired use and "other issues are screaming louder right now."

The City Council has not made it a priority to curb the perceived problem.

"We're not running out of water, and there hasn't been any rationing," McFaul said. "(Council members are) aware of it, but don't have the time to deal with it.

"If it's not broken, it's not a problem. For the majority of people in Moses Lake it isn't a problem because they turn on the spigot and water comes out."

Pendleton, Ore., sits about two hours south of Moses Lake. This dryland city of about 17,000 people was built around agriculture, but the economy has been converted by manufacturers, service-based industries and tourism. Manufacturing companies have flocked to Pendleton in the last 15 years to set up shop, making flour products, travel trailers and truck mirrors.

The city is the largest in northeastern Oregon and acts as a hub for retail trade. It also is the home of the Pendleton Round-Up, the area's annual rodeo event.

Pendleton city officials jumped into action in 2003 after watching the aquifer drop more than three feet a year. Their goal was to ensure the growing population would have ample drinking water in the future.

"We wanted to maintain this oasis," said Pendleton Public Works Director Bob Patterson.

Pendleton and Moses Lake are just two of hundreds of communities throughout the Northwest that are dealing with declining aquifer levels throughout the 63,000-square-mile Columbia River Plateau. Moses Lake is perched on the plateau's northeast edge, while Pendleton is positioned in the southern region. The Pullman-Moscow area is on the plateau's eastern border.

Pendleton and Moses Lake, along with many other municipalities, get their water from aquifer sub-basins within the expanse of the plateau. The intricate aquifer system encompasses a substantial area of southeast Washington, northern Oregon and a portion of western Idaho and lies between the Cascade and Rocky mountains, split by the Columbia River.

McFaul said the sub-basins in the Moses Lake area have experienced a decline of about 105 feet in the last 30 years. Irrigation and the area's growing population have a lot to do with the drop. Some landowners object when new municipal wells are drilled near their property, fearing there will be competition for water as the city expands.

"There's a lot of, 'Not close to me, because it's my water,' " McFaul said.

But the decline in Moses Lake has not slowed development.

Any water panic in Moses Lake is kept in check by what people see in the Quincy-Columbia Basin Irrigation District near the neighboring community of Odessa, where the aquifer is dropping more than seven feet per year.

"The eye has been more on them," McFaul said. "Though we've had problems, we can say we're not as bad as them."

Pendleton faced similar aquifer declines before leaders took action in the Umatilla Basin through a process called aquifer storage and recovery, which treats surface water from the Umatilla River and injects it into the aquifers for storage and eventual use.

Years of agriculture irrigation and increased municipal water use had caused the area's aquifer to decrease at a rate of about three feet per year, Patterson said. Rather than watch the resource dribble away or place water restrictions on residents, city officials pushed for a more proactive approach.

"In no way did we want to tell our customers they couldn't use water," Patterson said of the city, which uses up to 15 million gallons of water each year.

The city implemented the $13 million aquifer storage and recovery system in 2003. Aquifer storage and recovery allows water to be pumped from area waterways, treated to drinking water standards in processing plants and injected into aquifers. The process is similar to a water bank, in that deposits are made in times of surplus and withdrawals occur when demand is high. It is becoming a popular strategy to provide clean and ample water in communities where the resource may be dwindling.

Before the aquifer storage and recovery conversion, Pendleton relied on a series of local springs and eight basalt wells that dipped into the deep Grand Ronde aquifer. City leaders were required to develop a new source of water when the state determined that surface water had contaminated the springs.

Three wells are set up to both draw and inject water. Patterson said the system can expand to include five wells as the population and demand rises, for a maximum of up to 520 million gallons of water per year. In 2004, more than 385 million gallons were converted to drinking water at the city's automated treatment facility and injected into the aquifer and a series of reservoirs. High river levels in 2006 allowed 500 million gallons to be recharged, and the aquifer was documented to have only dropped two-tenths of an inch that year.

"If we can reach 500 million gallons ... on a regular basis, we'd really see a significant decrease in (aquifer) decline," he said.

Patterson said aquifer storage and recovery is an easier program to institute in Oregon than in Washington. In Oregon, state law dictates that water injected must be the same quality as the water in the aquifer. The water pulled for Pendleton periodically undergoes regular color and organic carbon tests to ensure it is of drinking quality.

In Washington there are stricter laws to ensure the water being injected meets the standards for drinking water, he said.

"From our perspective, hey, if it goes in drinking water and comes out drinking water, and there's no chemicals ... we're good," Patterson said. "You want the water to be as clean as it can be before you recharge it."

The success of the program has helped surrounding communities, which presents both positive and negative effects for Pendleton. Patterson said the aquifer is hydrologically connected to groundwater toward the west, in and around the city of Hermiston, where residents are able to draw Pendleton's treated water from the aquifer.

"As those water levels continue to decline, (Hermiston is) taking our water down too," he said.

Hermiston city leaders are working with Pendleton, area irrigation districts, the general public and a county groundwater task force to reduce the water level declines.

In Moses Lake, the city treats wastewater for irrigation that permeates back into the shallow aquifer.

The city also mandates large businesses that locate in the community already have a water right - or pay a fee

per acre-feet - before construction begins.

A bill signed in March by Washington Gov. Chris Gregoire is expected to provide additional water to the area, which often is plagued by drought.

The law allows water from Lake Roosevelt - located behind Grand Coulee Dam - to be drawn down an additional 82,500 acre-feet a year and piped to help municipalities and 10,000 acres of irrigated farmland in the Quincy-Columbia Basin Irrigation District area. As much as 132,000 acre-feet of water could be pumped in drought years.

McFaul said Moses Lake will benefit from the law. The water primarily will be used to irrigate the area's crops.

"That will really help us," he said. "That's a huge amount of water. Of course, that won't all go to Moses Lake, I'm sad to say."

McFaul said any additional water source will provide city leaders some time to launch their own plan to conserve water.

The city of Pendleton is operating on 25 percent well water and 75 percent surface water. The water recharged from the river is considered surface water. Officials hope the city eventually can rely 100 percent on surface water for municipal use.

"I think what we've done for the basin is show that this works," Patterson said.

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