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A RIVER

RUNS THROUGH IT

Waste Management at Center of Controversy

By J.W. Siebert

The North Bosque is a small, 100-mile-long seasonal river that flows from north of Stephenville south to Lake Waco, the sole source of drinking water for about 150,000 people. During winter and spring, the river's flow consists mainly of stormwater runoff. In drier times, the river's water volume consists largely of effluent from a few small municipal wastewater treatment plants.

The North Bosque River watershed also is home to about 80 dairy farms, which are proving fertile ground for a growing controversy. Dairy farmers and the City of Waco have squared off on opposite sides of a battle over waste management and water quality.



SUNRISE OVER LAKE WACO illuminates the city's only source of drinking water. The North Bosque River, which feeds into the lake (inset), is home to some 80 dairies and to small communities with wastewater plants.



ACROSS THE NATION, the number of dairy farms is decreasing while herd sizes are increasing. Some North Bosque River watershed dairy farmers would like to invest in more cattle, but they have been unable to get expansion permits from the TNRCC. Some are abandoning dairy farming altogether.

“We have a real challenge dealing with their waste,” says an elected Waco city official. “We want people to clean up their own mess. We are faced with a huge capital cost [for water purification], and this does not seem fair to the people of Waco.”

“Nothing is enough,” says a North Bosque area dairy farmer. “They seem to want us out. I believe that is true. Soon only a few [dairy farms] will be left.”

The turmoil has reached the halls of the state legislature, the offices of the Texas Natural Resources Commission (TNRCC) and the city halls of smaller municipalities upstream from Waco.

Who Has Vested Interest in What

Dairy farmers. Dairy farmers on the North Bosque are not a unified group. Some have been dairying in the region for over half a century. Others are first- or second-generation Dutch immigrants, many of whom arrived during the 1980s and 1990s by way of Arizona and California. Significant differences exist in farmers’ herd sizes and expansion goals, making it difficult for them to work together as an industry.

Regulatory agency. The TNRCC is the Environmental Protection Agency (EPA)-authorized body that administers the Clean Water Act in Texas. The commission regulates dairy waste management practices. It requires producers to obtain permits to operate their dairies, submit to annual inspections, pay fines if they breach the terms of their permits, apply for an amended permit prior to expanding and renew their permits every five years.

Texas Institute for Applied Environmental Research. The Texas Institute for Applied Environmental Research (TIAER) began seeking scientific evidence on water quality problems in 1991. The institute has made the North Bosque one of the most studied watersheds in the country, facilitating scientific research as well as meetings among stakeholders in an effort to enhance North Bosque water quality.

City of Waco. As participants in the stakeholder meetings, City of Waco officials expressed concern over two issues: whether present regulations were being enforced by the TNRCC and whether those regulations were sufficient to guarantee Lake Waco’s water quality.

To investigate, Waco officials made a series of helicopter flights over the dairy farms. Several flights were made during the extraordinarily heavy 2001 winter rains, which resulted in overflowing waste lagoons at about 30 dairies. Many of these discharges were legal, but officials were nonetheless concerned.

A public health consultant concluded that the city had more to worry about than the phosphorus in the waste overflow. Fecal coliform and cryptosporidium also posed potential public health threats. The city’s policy began to change from trying to get TNRCC to enforce existing laws to lobbying Texas legislators to write new laws governing dairy waste. As compromises facilitated by TIAER ground to a halt, the conflict developed political overtones and moved to the state legislature.

Texas Legislators Act

In spring 2001, the City of Waco worked with local state legislators to request environmental compliance histories from the TNRCC on all dairy farms.

Dairy interests suggested that Waco look in its own backyard for pollution problems from septic systems, water contact sports, lawn fertilizer, family pets and upstream municipal waste treatment facilities. But the public’s perception of the problem was most influenced by the dairy cow manure, and opinion in the legislature swung against the dairy farmers.

A rider was attached to H.B. 2912 governing the waste management of concentrated animal feeding operations. The rider requires new or expanding dairy farms in the area to remove 100 percent of the collectable manure from any new cows. Permitting for herd expansion was made more strict, and the phosphorus count on dairy farmland was limited to a maximum of 200 parts per million.

Dairy farmers received financial assistance in the form of a two-year-long composting program. The program covers most costs for hauling manure from dairies to compost sites.

H.B. 2912 has not satisfied Waco city officials, who are expected to protest new dairy permits as well as expansion requests. Dairy farmers are less than pleased as well, for the bill does nothing to speed up the permit process.

Farmers are worried about the future value of their farm assets, which, except for the cows and limited equipment, cannot be moved. When a modern dairy relocates, unrecoverable costs can be as high as \$2,000 per cow (\$1 million for a 500-head herd).

According to the Texas Association of Dairymen (TAD), waste management capital costs in the North Bosque area average \$274 per cow while annual waste management operating costs average \$64 per cow. Considering the size of their businesses, dairy farmers’ costs are high compared to other waste producers on the North Bosque, such as municipal sewer plants.

No Effective Industry Response

“They [the dairy farmers] are never going to be effective with the TNRCC until [they are] effective in Austin, and they will not be effective in Austin until [they are] unified,” says a local

elected official serving in Stephenville, in the heart of Texas' dairy country. This individual has seen the problem of dairy waste increasing over the years, and sees lack of accountability as the single biggest problem faced by dairy farmers.

"They need to police themselves, with accountability to one another as an industry," he says. He also asserts that the dairy industry needs to launch a more united initiative to obtain assistance from government agencies, such as the Texas Cooperative Extension.

City, Rural Residents Remain on Offensive

The North Bosque River watershed includes parts of six counties. On Jan. 1, 2001, these counties contained an estimated 469,000 head of cattle and calves. The USDA estimated 31 percent were milk cows.

Waco's mayor sees animal waste issues as public health issues. "We need more knowledge here. Serious risks exist. . . . I do not want to lose any of the assets of our lake."

Waco's assistant city manager says, "Every dairy has a well. The cities [that neighbor Waco] rely on the Second Trinity Aquifer. The dairies are pulling down that aquifer. Water is then polluted by the dairy process, and then it comes down to our lake, the only other source for our water."

According to Waco's utilities director, Waco spends millions on comprehensive water quality studies, tests for nutrient overloads on land near the lake, construction of free disposal sites for boat

sewage and assistance for septic system users who want to connect to the municipal sewer system.

"I have to deliver water that is safe and with high aesthetic quality," he says. "This is important to citizens, the mayor, and the city council To the layperson, smell and quality are the same."

A rural resident recently filed suit against a neighboring dairy farm. This resident's small ranch sits on a creek downstream from the dairy.

"I am not against the dairy industry," says the resident. "I am not against dairies. I am against bad [polluting] dairies. . . . When they [dairymen] see a guy is bad, they rally around the guy and defend him. They act like it's our fault that he polluted our property. If TAD would just step up and say 'so and so is a bad dairyman' and support efforts to get him out, that would boost their credibility."

Herd Expansion is Sticking Point

Nationally, the number of dairy farms has dropped 37 percent since 1992, and the average herd size has increased by 50 percent. The predominant dairy industry perception is that dairy farmers seeking to stay in business are actively expanding herd size. Conversely, farmers not seeking to expand their herd size are viewed as likely to quit dairying.

But TNRCC expansion permits are hard to come by. One North Bosque dairy farmer who just relocated his herd to New Mexico says, "the problem with expansion here was that we couldn't."

A local dairy farmer whose family has dairied along the North Bosque River area since the 1930s states, "My own philosophy is to stay flexible and roll with the punches to survive. We are now milking 450 cows. We would like to go to 1,000 cows."

In February 1999, another dairy in the watershed applied for a permit to add 500 cows. As of June 2002, TNRCC approval was still pending.

In February 2001, the TNRCC placed the North Bosque under TMDL (total maximum daily load) restrictions for soluble reactive phosphorus with the objective of reducing the volume of phosphorus going into the river by 50 percent and thus controlling the growth of excess algae.

TNRCC will create a TMDL Plan that will regulate the amount of pollutants going into the river. The plan will likely



THE NORTH BOSQUE RIVER IS SEASONAL, filling its banks during winter and spring rains and slowing to a trickle in some places in dry times.

require dairy farms to make major changes in their operations, such as requiring a 50 percent reduction in dairy waste or requiring trucking of waste to other locations.

The TMDL Plan will be formulated specifically for the North Bosque River, not for Lake Waco, which is not officially listed as an impaired body of water by the EPA. In fact, a recent TNRCC report ranks the lake 39th best out of 111 Texas water reservoirs in phosphorus content.

Issues Become Clearer

Events continue to unfold. Today 86 dairy farms have manure hauled from their corrals to eight composting sites, where it is turned into a resource that can aid plant germination, growth and drought tolerance. The long-term success of the composting program will depend on generating uses and interest sufficient to pay transportation costs for the product.

City of Waco officials are likely to continue a number of efforts such as lobbying the state legislature, protesting individual dairy permits and suing individual dairy farmers. The city also wants the total number of cows reduced. Pressure on the TNRCC to increase regulatory enforcement seems likely.

Controlled lagoon releases, although legal, prompt the strongest objections from Waco officials. Why? The city may

have to build a \$70 million water treatment plant if lake water quality does not improve.

Dairy farmers view the freedom to expand herd size as critical to future financial success. Farmers are willing to make management concessions if they are free to grow.

Because of political pressure, individual dairy sites continue to be abandoned. Even if the remaining farmers expand their herds, the total number of cows may decrease.

Dairy farmers and City of Waco officials have recently met face-to-face, and there is reason for optimism now that the parties have begun talking. However, many more meetings will be necessary before this hotly charged issue nears resolution. ♣

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