

# Norfolk Insider

City of Norfolk, NE

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## “Flood Damage at Wastewater Treatment Plant”



It was like an island in a lake of water. The City of Norfolk Wastewater Treatment Plant was situated in an unlucky location this June. It lays only a quarter mile from the Elkhorn River which had turned into a raging river a half mile wide after torrential rains fell in the area.

Highway 81 was closed. A railroad bridge and Cowboy Trail bridge were washed out. TaHaZouka Park was under water. Todd Boling, manager of the treatment plant, was monitoring the water levels around the plant. The water came close but didn't ever flood the buildings. It did rise up to two feet high on the road leading to the plant, preventing workers from leaving or

entering the area.

“We stayed up all night to manually operate the computer that controls the operations of the plant. Normally the sequencing batch reactor cycles four times a day. We were cycling once every hour,” Boling said.

Though the water didn't breach into the plant's tanks or equipment, it did damage an interceptor pipe bringing water to the plant. A sinkhole on June 17 revealed that the weight of the floodwater had collapsed a major pipe carrying water into the plant. A 36 inch line had caved in requiring Boling to contract with a pumping company to pump incoming wastewater around the damaged pipe so that it could be repaired. Then, on June 25, a 21 inch trunk line that had been in place since 1909 collapsed also.

The treated wastewater had to be diverted to a nearby field that would drain into the river while temporary fixes were made. Water from the flood continued to flow into the plant bringing with it tons of sand and grit. “We had to hand scoop the sand out of our equipment that was filtered out of the water. In all, we took out over 600 cubic yards of sand and grit,” Boling said.

More sand needs to be cleaned out of pre-aeration tanks, a task that now has to wait until warmer weather next spring. According to Boling, the sand continues to damage the equipment at the plant. “The sand definitely shortens the life of our equipment. We're still seeing repercussions from the flood,” Boling said.

An emergency manhole was installed to alleviate the problems caused by the failure of the 21" pipe. The City is now applying for Federal Emergency Management Agency funds to help with permanent repairs. New pipe built to withstand any future floods will need to be installed to replace the flood damaged pipe. It will cost \$1.8 million and will be installed in stages beginning in 2011.

Boling recently gave a presentation to wastewater plant operators across the state on what steps they might want to take if caught in the same situation and what he would have done differently.

"We put Band-Aids on the broken pipes for now. Overall, the plant was able to withstand a tremendous amount of water in a short amount of time. Hopefully, we won't have to deal with a catastrophe like this again for a long time," Boling said.