



Brazos River
Authority



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New Use for Old Technology

The North Bosque Watershed is home to 40 Public Law 566 (PL-566) flood control reservoirs. The PL-566 reservoirs were designed and positioned on feeder streams to store large amounts of inflow generated by rainfall events. The stored water is released through a drainage pipe over an extended period of time regulating storm water runoff and reducing the effects of flooding and erosion.

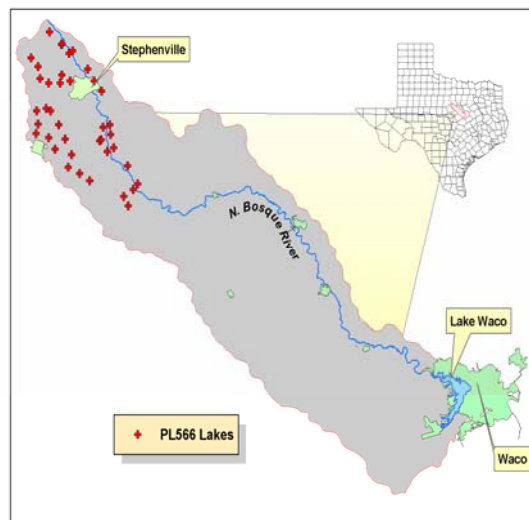
Many of these PL-566 reservoirs are located downstream of contributors of nonpoint source pollution including range land, crop land, dairy waste application fields, and native woodland areas. During storm events, the run-off containing elevated levels of phosphorus and other forms of pollution

flow into the PL-566 reservoirs. This fact sparked an idea to enhance the effects of the PL-566 reservoirs to settle out the pollutants, including phosphorus, before the water ever reaches the main stem of the Bosque.

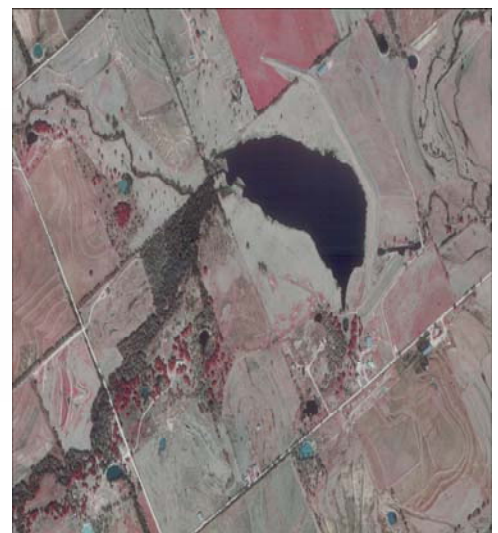
The idea is to treat a selected PL-566 reservoir storm water inflow with alum (aluminum sulfate). The alum is a compound which acts as a flocculent and causes the suspended particles, including phosphorus, to settle out of the water. This method of removing suspended particles by coagulation is the same method used in conventional water treatment plants.

A project was recently approved by the Brazos River Authority (BRA) Board of Directors to test

out the use of alum on one of the PL-566 lakes. Sampling upstream and downstream of the reservoir, to establish a baseline for the system prior to the use of alum, will begin as soon as possible. Once the alum is actually added, it is expected that the operation will continue for approximately one year undergoing constant monitoring. The project will be evaluated for effectiveness, feasibility, and any environmental impacts. The project as a whole will likely take 2 to 3 years to complete including initial baseline monitoring, implementation, operational monitoring, and project evaluation. The overall evaluation of the project will determine if future projects of this nature are warranted.



North Bosque River Watershed PL-566 Reservoir Locations



Aerial photograph of PL-566 flood retardation reservoir.

Reduction of Phosphorus in Dairy Rations Could Save Dairy Producers Cash While Reducing Phosphorus Accumulations on Dairies.

Phase one of the Total Maximum Daily Load (TMDL) Implementation Plan for the North Bosque River includes the development and implementation of a Comprehensive Nutrient Management Plan (CNMP) for permitted dairy Confined Animal Feeding Operations (CAFOs). The CNMP program focuses on various aspects that could impact phosphorous loading in the North Bosque Watershed including feed management, Waste Application Field (WAF) management, manure removal, and other management methods.

The reduced-phosphorous

feed management strategy was proposed by dairy representatives during the TMDL development. While reducing phosphorus in feed is a good approach, the issue of how much phosphorus each cow needs can be very complex. Excessive reduction of phosphorus could negatively impact milk production; however, careful feed mixing could result in a measurable reduction in the phosphorus content of cow manure with no detrimental effect on milk production.

The National Research Council (NRC) has performed

extensive research to determine phosphorus recommendations. Working with the NRC and dairy nutritionists, dairy producers may be able to provide their herd the optimal level of phosphorus, lowering potential phosphorus environmental impacts and reduce feed costs by not purchasing supplemental phosphorus that the cattle don't need.

More details on NRC animal nutrition studies can be found on NRC's website at: <http://www.nas.edu/nrc/>

New Monitoring System will Help Accurately Assess Water Quality Improvements in the North Bosque Watershed.

At a news conference, held October 14, 2004 in Clifton, Texas Governor Rick Perry announced the Texas Commission on Environmental Quality's (TCEQ) recent enhancement of their near-real time water quality monitoring system located in the Leon and Bosque River watersheds. This system, consisting of 4 separate monitoring locations, has been in operation for several years, but the recent enhancements enable around-the-clock monitoring of phosphate, nitrate, and ammonia. These additions compliment the parameters that

were already being monitored at these sites, which included temperature, conductivity, turbidity, dissolved oxygen, and pH. These automated systems collect and analyze the water samples at the sites and transmit the data electronically to a database network at TCEQ. This data is then available to be viewed through TCEQ's web site at: http://www.tnrcc.state.tx.us/cgi-bin/monops/site_info?water

This system should provide unique and unprecedented ac-

cess to a large amount of near-real time water quality data. Combining this around-the-clock water quality data with things such as river flow rates and rainfall patterns may allow a more accurate correlate of pollutants to potential pollution sources in the watershed. The near-real time analysis and electronic transmittal of data may also afford a more timely response by TCEQ and others to episodes of unusual pollutant loading in the watersheds.

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This newsletter is produced for the benefit of the North Bosque River Watershed Stakeholders. Its purpose is to inform the readers and to highlight positive activities taking place within the watershed. If you're involved in a project in the watershed or hosting an event related to pollution prevention or water quality enhancement and you'd like to see it in a future issue of this newsletter, please contact Chris Higgins (chiggins@brazos.org) or Kyle Headley (kheadley@brazos.org) by email or by phone at 254-761-3167.

THESE NEWSLETTERS, ALONG WITH OTHER ASPECTS OF THE PROJECT, ARE LOCATED ON THE AUTHORITY'S WEBSITE (WWW.BRAZOS.ORG) UNDER THE TAB LABELED "BASIN PROJECTS"

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