

# THE BLUEPRINT

Winter 2015



Meyer, Meyer, LaCroix & Hixson  
Engineers and Land Surveyors

## IN THIS ISSUE

Planning Grants	Pg. 1
Alexandria Water Tank	Pg. 2
Fun Water Facts	Pg. 2
City of Winnsboro	Pg. 3
Bike Trail	
THMs	Pg. 4

## LOCATIONS

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## USDA Announces Planning Grants

The United States Department of Agriculture Rural Development has announced a new round of planning grants. These grants will assist eligible communities in planning for water and wastewater projects. **SEARCH grants (Special Assistance for Rural Communities and Households)** provide grants for predevelopment planning for financially distressed rural communities, districts and non-profits with populations of 2,500 or less and are based on need. These planning grant funds can be used for feasibility studies, technical assistance, and design assistance for water and wastewater infrastructure needs. **These grants may be issued for up to \$30,000 and no matching funds are required.**

**A Predevelopment and Planning Grant (PPG)** is another planning grant for the lesser of **\$25,000 or 75% of the project costs**. Communities and water or wastewater districts (publicly and locally organized) are eligible if the median household income of the proposed area is either below the poverty line or below 80 percent of the statewide non-metropolitan median household income. The funds are to be used to develop a completed application for a proposed project. These costs can include the preliminary engineering design and models required to develop a plan for meeting the water and waste needs of the community or water district.

The application process for the **SEARCH** or **PPG** grants involves completion of forms designed to show financial need of the community, as well as explaining the project being developed. The resulting document from a funded **SEARCH** or **PPG** grant is a Preliminary Engineering Report, which may then be used to apply for any needed funding for the project with **USDA-RD**. Meyer, Meyer, LaCroix & Hixson works with communities regularly to plan system improvements and prepare these documents. We would be glad to meet with you to discuss your community needs to see if one of these grants may be the start your community needs to make needed improvements in your system's infrastructure.



United States Department of Agriculture

Information provided  
By USDA

## City of Alexandria Replaces 70+ Year Old Tank



When the City of Alexandria decided their 70+ year old, one million gallon welded steel water tank needed to be repaired and painted, Meyer, Meyer, LaCroix & Hixson was selected for the project. MML&H engineer Heath McGuffee (pictured with the tank) inspected the tank and determined that the deterioration of the tank was more severe than originally believed. MML&H prepared a 20-year life-cycle cost analysis to compare various options for repairing and/or replacing the existing tank. Based on the analysis, it was soon realized that it would be more cost effective for the City of Alexandria to demolish the current welded steel tank and rebuild a new prestressed concrete tank in its place.

The prestressed concrete tank was selected over other alternatives because of its relatively long life and less maintenance requirements compared to a welded steel tank. Depending on market and site conditions, prestressed concrete tanks are also more cost effective than bolted steel tanks in larger sizes, generally starting at one million gallons. Prestressed concrete is engineered with single-wire prestressing to assure a permanent cylindrical compression in the tank wall, therefore the walls and floors are not required to be as thick as traditional concrete tanks. The majority of the floor for this one million-gallon tank is only 4 inches thick. The new tank was built by Precon Corporation on the same footprint as the previous tank. Although prestressed concrete tanks do not require coating, the City of Alexandria opted to paint their new tank with their City logo for aesthetics. Meyer, Meyer, LaCroix & Hixson has also designed prestressed concrete tanks for other clients including the City of Winnsboro, the Town of Delhi, the Buckeye Water District, and the City of Oakdale.

## City of Winnsboro Bicycle Trail

The City of Winnsboro is excited about the completion of their new bicycle trail. The bicycle trail is multipurpose for both bicycles and pedestrians to open up the residential communities for pedestrian traffic to the neighboring Franklin Parish High School. Of cities in Louisiana with populations over 5,000, Winnsboro is ranked 1st in percentage of bicycle commuters and 15th in percentage of pedestrian commuters, so this new bicycle route will be used by both cyclists and pedestrians.

Meyer, Meyer, LaCroix & Hixson designed the trail which has improved the fitness and exercise options in this area by providing residents of the surrounding neighborhoods with a safe place to walk, jog, and bike. This trail has also allowed children to walk or bike to school safely as a healthy alternative.

The City of Winnsboro received grant funds from the FHWA Recreational Trails Program for Louisiana (RTPL).

RTPL is a Federal-aid assistance program that provides funds for all kinds of recreational trail uses. RTPL is administered by the Louisiana Office of State Parks, Division of Outdoor Recreation and provides funding for recreational trails in both urban and rural areas throughout the state. RTPL will begin accepting applications for the 2016 RTPL projects starting July 1, 2015. This program provides 80% of required funds with the rest in local funds. Meyer, Meyer, LaCroix & Hixson would be glad to help you plan your Recreational Trail project.



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# Fun Water Facts



Did you know...

An elephant can smell water up to 3 miles away.

The first water pipes in the US were made from wood (bored logs that were charred with fire).

At 1 drip per second, a faucet can leak 3,000 gallons per year.

It takes more water to manufacture a new car (39,090 gallons) than to fill an average home swimming pool (20,000 gallons).

Water can dissolve more substances than any other liquid including sulfuric acid..

[http://water.epa.gov/learn/kids/drinkingwater/water\\_trivia\\_facts.cfm](http://water.epa.gov/learn/kids/drinkingwater/water_trivia_facts.cfm)



# TRIHALOMETHANES

Trihalomethanes (THM), the word alone is enough to make you stop and pay attention. If your water system has already exceeded the limits of disinfection byproducts trihalomethanes or haloacetic acids (HAA5s) you may be looking for answers to rid your water system of these unwelcomed potential carcinogens. Disinfection byproducts (DBPs) were once thought to be a problem only for surface water systems, but we have noticed several groundwater systems, particularly in the Sparta aquifer area, with elevated THM levels. No one likes having to send out the required notices to their customers telling them that their water may be tainted. Additionally, DHH has started pursuing enforcement actions against water systems with recurring exceedances of this primary contaminant. DHH's recent increase in minimum chlorine residuals has also contributed to higher levels of disinfection byproducts.

Disinfection byproducts are created within the distribution system when chlorine for disinfection reacts with naturally occurring organic (NOM) matter in the water over time. Since DBPs are produced within the distribution system, it is generally not feasible to remove them directly at each customer's tap. Therefore, control of DBPs requires control of their precursors. The primary precursors for disinfection byproduct production are organic matter, chlorine dose, and contact time. Reduction of any of these precursors will reduce disinfection byproducts. The presence of bromide and high pH levels can also increase the rates of THM formation.

Control of DBPs can range from operational adjustments such as better monitoring of chlorine levels and more frequent flushing, to relatively simple changes such as moving the fill line or changing the setpoints for a tank, to more complex solutions such as switching to chloramines, to even more complex (and costly) solutions such as ozone treatment or membrane filtration. Sometimes an effective control plan may require multiple solutions. The main thing to remember is to not attempt to control DBPs haphazardly. By doing so, you could spend a lot of time and money on solutions that don't work. Understand your water system first, and find out what each of your precursors are. Although there are many, many variables in a water distribution system, the chemical reactions creating DBPs are pretty straightforward and can be predicted.

Things to understand include:

- Know your source water. Sample each of your water sources for precursors. Is the problem from only one well or from all of your wells? There is no point in treating all of the wells if the problem is with only one.
- Know the typical water age in each part of the system. This can be done by computer modeling. Many rural water systems have water that is days old, yet the reactions creating THMs can sometimes occur in hours. In those cases, flushing and looping of lines will help, but will not solve the problem alone.
- Know what kind of DBPs you are producing. Not all disinfection byproducts are created equal. Trihalomethanes include four different compounds and there are five different compounds which make up haloacetic acids. The presence of elevated bromide in the water can limit your treatment options because bromide reacts with ozone to create a whole different class of disinfection byproducts.
- Know any other problems to be addressed. On some occasions, control of DBPs will also remove iron and improve the taste and color of the water. On other occasions, control of DBPs can make them worse. Each change to a water system will have some effect. You should carefully consider the implications of each proposed solution.
- Know your operational skills and budget. Some solutions which cost less up front may turn into O&M headaches in the future. A careful comparison of alternatives should consider both short term and long term costs.
- Know your funding sources. The days of "free money" are long gone, but there are some partial grants and low interest loans available.
- Know your regulatory agency. You should always be responsive to the regulatory agency. Disinfection byproducts are classified as a primary contaminant and cannot be ignored. On the other hand, getting an exceedance doesn't necessarily mean that you need to do something just for the sake of doing something. Although we do not presume to speak for DHH, they are rational people and would likely prefer to see you spend your money fixing the problem than paying fines. As long as you have a real plan and keep them in the loop, regulatory agencies will usually give you a reasonable amount of time to fix the problem.

Time and effort spent up front understanding your precursors and developing a control plan will save money and headaches down the road. Meyer, Meyer, LaCroix & Hixson has the expertise to help you understand your precursors and to develop a plan for DBP control that best fits your particular needs.