

Farmersville DAC Water-Energy Initiative

ATTACHMENT 6

PROPOSAL MONITORING



Instructions: This attachment is limited to one page, single spaced, font size 12. Please describe how the System will be monitored to verify the water and energy savings and GHG reduction. The parameters that will be monitored need to be quantifiable. Only a general methodology for monitoring is needed for this attachment. Post-construction reporting will be a requirement for successful applications. Details of the monitoring program will be finalized through the agreement development process.

Overview: The City of Farmersville will verify quantifiable water and energy savings and GHG emissions reductions by first, developing a Project Monitoring Plan (as required) that will include baseline (pre-project) water use and energy use, proposed savings, brief discussion of how water and energy savings will be monitored, methodology of monitoring, frequency of monitoring, location of monitoring points, and performance targets. We anticipate submitting a single Post-Performance Report to the State within one year of completing the two projects included in this proposal.

Water Savings: The City estimates that the majority of the water savings will be realized from **Project 1**, the installation of 1,020 radio meters and conversion of the entire 2,558 connection system from a flat rate water billing system to a metered, tiered rate system. For purposes of this grant application, we are estimating a conservative 20% reduction in overall water use system-wide as a result of this change. Empirical evidence suggests that water use behaviors change dramatically after customers begin paying for the amount of water they actually use. According to the California Single Family Water Use Efficiency Study, sponsored by the California Department of Water Resources, municipalities have experienced upwards of a 28.7% reduction in water use due to volumetric meter pricing and the ability to detect leaks in real time. The methodology will include a system-wide baseline for water delivery to 2,556 connections in the city limits in 2014 and a comparison to post-implementation delivery amounts for the same 2,556 meters. (In order to have an equivalent before and after comparison, the data will not include 81 new connections that Farmersville will add to its system in 2015 in a neighboring community, Cameron Creek Colony, where private wells are drying up.) **Project 2**, replacing water-intensive landscaping (turf) with artificial grass. The methodology for water savings will also be a year-to-year comparison. Because the City Hall and the Community Center watering were not previously metered, the baseline estimate will include watering one inch per week for 9 months (2014) for 20,000 square feet of turf compared to a 90% reduction in water use. (Some water will still be necessary for trees and small flower beds.)

Energy Savings: The methodology to estimate energy savings will be based upon the City's energy intensity rate (the amount of electricity used to pump, treat and distribute) for one million gallons of water. The energy savings will directly be apportioned to the amount of water saved.

Greenhouse Gas Emissions Reductions will be calculated using the reduction of energy utilized as a result of the project including greenhouse gas emissions avoided due to fewer vehicle miles for maintenance crews to drive to City Hall and the Community Center for mowing, and the emissions avoided by completely eliminating mowing at both sites.