

City of Gallup Commercial Audit Post Audit Data Review
NM Office of the State Engineer/Bureau of Reclamation Grant No. 07-FG-40-2618
Water Conservation Training Audits and Retrofits for Food Services

Background

The New Mexico Office of the State Engineer (NMOSE) implement a water conservation audit program focused on training drinking water suppliers and food service establishments, in selected New Mexico cities, in efficient water use practices. The program, *Water Conservation Training Audits and Retrofits for Food Services*, was a coordinated effort with three selected municipal water suppliers (City of Gallup, City of Rio Rancho, Los Alamos County). The NMOSE and the drinking water suppliers worked together to identify potential food service establishments, such as restaurants and school cafeterias, by pulling their water use records for an evaluation. The auditing process used was developed employing research completed by the California Urban Water Conservation Council, the Arizona Department of Water Resources and others that have implemented similar programs. It included training the drinking water suppliers on the entire auditing process, which will allow them to continue the program after the grant was completed.

The drinking water supplier was responsible for follow up with the establishment to see if any additional actions had been implemented and to provide post-audit meter readings to the NMOSE. This report is a comparison of the before and after audit water usage and a summary of actions taken for the City of Gallup.

The New Mexico Office of the State Engineer reviewed one year of post audit data from Gallup, New Mexico. Audits in both the City of Rio Rancho and Los Alamos County were conducted earlier this year and did not have a full year of post data available. The Gallup audit was conducted in February 2008. Fourteen restaurants and one school participated in the audit. The city provided three years (2005-2007) of pre-audit data for 13 of the restaurants and the one school. The remaining restaurant only had two years of pre-audit data available (2006-2007). Post audit data was compiled for March 2008 – March 2009.

Audits

The audits were conducted by NMOSE's contractor, Daniel B. Stephens and Associates and a representative from the City of Gallup. The audits included gathering background information on the building and the volume of the restaurants business as well as a walk through of the entire restaurant inside and outside. During the walk through, every faucet, toilet, spray nozzle and other water features were tested for flow or volume. Thirteen pre-rinse spray nozzles were replaced at twelve of the establishments; four more nozzles were left for replacement by a plumber. Two establishments received two nozzles and one establishment did not have a pre-rinse station. Also during the audit all leaks, high volume fixtures, and inefficient practices were noted.

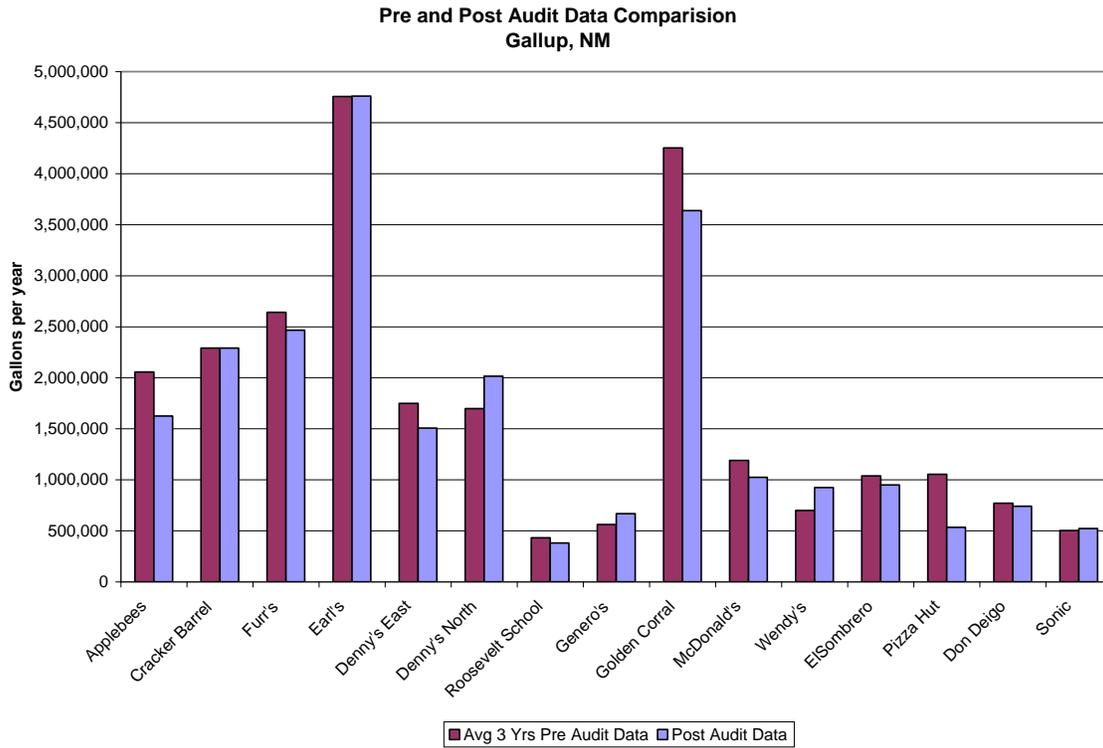
Each participating establishment received a post audit report from the contractor. The report included a copy of their audit form, details regarding the leaks, high flow fixtures,

or inefficient practices found and details regarding the City’s water conservation rebate programs. Recommendations were made to reduce water use. One follow up phone call was made by the City to the corporate office of one chain restaurant that had significant leaks. No other contact was initiated by the City to the participants regarding the audits.

Results

The NMOSE analyzed the post audit data provided by the City of Gallup. An average was calculated for the three years of pre audit annual totals and compared to the full year of post audit data, Figure 1.

Figure 1



Of the 15 establishments, nine showed a noticeable decrease in water use, three stayed close to their pre-audits figures, and three had an actual increase in use. Of the three that increased, Denny’s North went through a remodel and expansion the year prior to the audit and Genero’s changed owners in 2007 and had provided only two years of pre audit data. That leaves Wendy’s with the post audit unexplained increase in water use. Pizza Hut, who had the largest decline in use (49%) from the pre audit average, was already showing two years of significant decline prior to the audit, signifying alternative reasons for the drop off in water use.

Excluding the two remodels and Pizza Hut, the post audit data ranged from an increase in use of 32% to a decrease in use of 21%. Taking out the high and low, the average post audit results for the remaining 10 establishments were a decrease in use of 7%. A control group of five establishments was compared to the audited data. During that same time

frame, the control group's water use went up an average of 4%. Other than the pre-rinse spray nozzles that were replaced during the audit, the only known action taken by any of the establishments was a couple of toilet retrofit by Sonic. The City audited one of Sonic's two establishments in town. Sonic contacted the City and choose to retrofit both of their restaurants. They received a \$75 rebate from the City for each of the four toilets replaced.

Conclusions

The *Water Conservation Training Audits and Retrofits for Food Services* grant program has had a short term savings in commercial water use in Gallup, New Mexico. The program saw an average 7% reduction in annual water use for the year following the audits. This resulted in approximately 1.3 million gallons of water saved from one city. If the other two participating cities show similar results at the end of their first year, the grant program will have saved almost 4 million gallons (12.3 acre feet) of water from 33 establishments. All three participating cities are continuing with the commercial audit program with an additional 30 audits anticipated by the September 2009.

Since this was a pilot program used to develop a training packet for distribution across the state, the long term impacts of the program are anticipated to be much larger. The *NMOSE Food Services Industry Water Audits Instruction Manual*, along with the reports from all three participating cities and this post audit data review have been posted on the NMOSE website at http://www.ose.state.nm.us/wucp_pws.html. The material will be publicized through press releases, at relevant conferences and events and in trade newsletters.