Chapter 3
2007 On-Site
Technical Assistance Contacts

This chapter lists the on-site contacts made by Rural Water technicians (Circuit Riders) in each state. A technician or Circuit Rider is an experienced operator/technician/teacher that travels the entire state, day-in and day-out, providing immediate on-site assistance. They assure the most effective use of scarce funding and ensure problems are solved for the least expense. Their peer-to-peer relationship with local folks means better communication and more cooperation from the local officials.

Circuit Riders ensure that USDA infrastructure grants are used in the most cost effective manner and provide all small communities access to on-site and immediate technical assistance and water development planning with their utilities. As unbelievable as it may sound, each Circuit Rider makes on-site contacts with over 300 water systems each year. Circuit Rider contacts occur by the thousands each month as illustrated by the partial listing of significant contacts in the first part of this chapter. This is the only way to truly assist small community officials. Circuit Riders work for the communities free of charge, allowing them to work in the best interest of each community.

All communities receiving on-site assistance last year are listed in the following report with the following descriptions:

Operations	**TA On-Site**	**Loan Applications**
Management	**Compliance**	**Potential**
Security	**Loan**	**Public Health**
Treatment	**Conservation**	**Actual**
Regulatory Activities Agency	**Contact**	**Actual Compliance**
Public Education	**Exceeding Standards**	**Sustainability Activities**

The following are summaries of a typical contact:

Alabama, Lowndes - Mr. Franklin L. Buzbee, a Circuit Rider for The Alabama Rural Water Association, worked with Mr. Raymond Surles, full-time Certified Water Operator of Water Management Services, on November 25, 2007. The Lowndes County Water Authority is managed by Water Management Services and serves 1,100 customers in Lowndes County, Alabama. Mr. Surles can be reached by telephone at (334) 548-6235. The Lowndes County Water Authority produces all their metered water from ground sources. All customers are metered. All sources are disinfected at the source with chlorine gas.

Mr. Buzbee first met with Mr. Surles on Sunday, November 25, 2007 to locate a leak that had evaded location. Mr. Surles stated that the pump at the well that provides water for the South section of the system had been running since Saturday morning but the elevated storage tank was still empty. An emergency leak detection process was initiated upon arrival. Mr. Buzbee began the process by using the throttled valve technique to determine what area the leak was in. This

was successful. A leak was located on Alabama Highway 21 just West of Blue Hill Road about 500 feet from the storage tank. The pipe was excavated and repaired the next day.

The leak detection process took three and three-quarter hours. The leak located accounted for approximately 150 gallons per minute. With the leak repaired, the Lowndes County Water Authority should save approximately $7,776.00 per month using a cost of production figure of $1.20 per 1,000 gallons. The free assistance provided by the Alabama Rural Water Association occurred during a holiday weekend, which could have resulted in higher rates by other private contractors.

Alabama, West Blocton - On February 1, 2007 Alabama RWA Circuit Rider #2, Andrew Crawford, was contacted by West Blocton Water Works Certified Water Operator Mr. Jerry Fondren (205-938-7622). Mr. Fondren requested assistance in locating a leak.

The Town of West Blocton is a rural residential town located in Bibb County, Alabama. West Blocton Water Works serves 1,600-metered customers. West Blocton is also home to the extremely rare and beautiful Cahaba River Lilly, which lives in the Cahaba River. Started by the coal miners of West Alabama, it has long outlived the end of the mining era.

The Circuit Rider arrived on-site at the West Blocton Town Hall on February 1, 2007 at 5:30 PM to conduct a leak survey. After spending two days with a section of line valved off the Circuit Rider #2 found that a two-inch ninety-degree elbow pvc had blown off resulting in a 310 gallon per minute leak. This leak drained the Town of West Blocton's water supply causing an emergency.

As a result of this contact, the savings to West Blocton Water Works is $15,400.00 per month, using a cost production factor of $1.15 per 1,000 gallons.

Alabama, Rutledge - On September 18, 2007 Circuit Rider #3, Mr. Steven Meyers, made a site visit to the Rutledge Water Works. The system operator, Mr. Richard Swanner, (334) 335-6634, asked Mr. Meyers about the subject of Stage II DBP. Mr. Swanner stated that he would need assistance preparing a Standard Monitoring Plan for Stage II DBP. Mr. Meyers said that he would be glad to render assistance while he was in the area.

Rutledge Water Works is a small ground water system with only 280 customers; this places Rutlege Water Works on Schedule IV with a deadline to submit their paperwork to the EPA and ADEM by April 2008. Mr. Meyers reviewed Rutledge Water Works Stage 1 DBP test results and found that the system qualified for a 40/30 Waiver. With Alabama Rural Water Association's guidance Mr. Swanner was able to complete the 40/30 Wavier application six months ahead of schedule.

Private companies are charging between $500.00 and $1,000.00 to complete the 40/30 Wavier application. Alabama Rural Water Association provided this valuable service at no cost to Rutledge Water Works.

Alaska, Kotzebue - March 19-22, 2007 Alaska RWA Circuit Rider Laren Kowallis visited the water system in Kotzebue, Alaska; contact number 907-442-5209. The contact with Kotzebue was at the request of Randy Walker, Supervisor of the water treatment plant.

The system has 700 connections and has a master meter. The population is 3,000. There are four full-time operators and they are all certified. They use onset chlorination. This is one of the most complex systems in Alaska. They use six different chemicals in their conventional filter system and the water quality changes six times during the year from lake turnover. This was a follow-up visit to finish backflow training.

The first day there, their water production had suddenly dropped off and they could no longer make more water than they produced. Rates went from 290 GPM to 190 GPM. Backflow training stopped and trouble shooting the problem was top priority. Backwashing the filters and doing a high pressure surface wash was done first and then monitoring filter to waste flows; they where producing 290 GPM. When the turbidity levels reached 0.1 the flow was sent back to the storage tanks but it was only at 190 GPM. The problem had to be in the treated water distribution line. The line from the filters to the tanks is 250'; it starts at out as six-inch CPVC and runs 150' and was reduced down to four-inch CPVC and then to four-inch galvanized for 40' then back to six-foot CPVC. The old galvanized four-inch line was not replaced during the plant-repiping project due to running out of money and it was going to be the hardest to replace. The four-inch CPVC was used because they ran out of six-inch CPVC. The soda ash is injected just before the start of the four-inch CPVC. From experience the old four-inch line was going to be badly corroded and restricted the amount of water that could flow through it. The sudden loss of water production indicated clogging in the line.

Tuesday morning the plant was shut down and the flanged was opened and the pipe was restricted. The opening was reduced to two-inches. The soda ash used for corrosion control is also leaving a heavy deposit. The parts for a bypass were gathered and glued. Laren recommended that the system also replace the 15 feet of four-inch CPVC at the same time. They had the parts and it would only take a few more minutes. That pipe could be restricting the flow too or would be in the future. They decided against it, they only wanted to do what they had to do.

Wednesday the bypass was installed and the flows only increased to 200 GPM. There was a block in the four-inch CPVC. It was late in the day so Thursday morning they would shut the plant down again and break the flanges between the six-inch and four-inch CPVC. When the flanges where taken apart the six-inch CPVC had a three-inch buildup of soda ash inside and a large chunk of it had come loose and clogged the four-inch line at the elbow. The four-inch CPVC was replaced on Friday morning, production went back to 290 GPM and replacement of the four-inch galvanized line will be scheduled for May.

It took four days to get the problem corrected, for a total of 32 hours. The system is now operating as designed. The site visit saved the system $2,500 and averted running out of water in 10 more days.

Alaska, Thorne Bay - Alaska Rural Water Association was contacted by the State of Alaska's Division of Community Advocacy to assist the City of Thorne Bay in trying to find some immediate cost savings. Currently the community's water and wastewater system is being partially subsidized by city funds, which is putting a strain on the city's budget.

On April 17, 2007 Alaska Rural Water Association Circuit Rider, Brandon LeBaron, met with the Division of Community Advocacy's, Lawrence Blood and City of Thorne Bay's Water Operator, Billy Joe Phillip (907-828-3380). A thorough inspection of the community's water and wastewater system was conducted and several major deficiencies were found. The water system is currently on the significant non-compliers list for exceeding its disinfection by-products maximum contaminant level (MCL) by over three hundred percent. Disinfection by-products are formed when chlorine that is used to kill disease-causing organisms reacts with naturally occurring organics in drinking water. Some people who drink water containing trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous systems and may have an increased risk of getting cancer. Some people who drink water containing haloacetic acids in excess of the MCL over many years may have an increased risk of getting cancer.

The wastewater collection system has a major problem with infiltration. Infiltration is when ground water or surface water makes its way through cracks in pipes, unsealed manhole lids, or any other opening in the wastewater collection system. The utility then has to treat this rainwater and ground water as sewage at the wastewater treatment plant, which raises the utility's operating costs substantially.

The utility wastewater plant should be treating 30,000 gallons of sewage per day on average, but because of the infiltration problem the plant is seeing flows upwards of 500,000 gallons per day. This is costing the utility a substantial amount of money in electrical costs for pumping, wear and tear on equipment, and operator over-time.

The information Alaska Rural Water Association was able to gather was presented to Thorne Bay City Council, so they can make some informed decisions about their water and wastewater systems. Alaska Rural Water Association is continuing to work with the community to help them resolve their problems.

The City of Thorne Bay gets its drinking water from a small lake that was formed by building a logjam type dam. The water is then treated in a direct filtration treatment plant where a polymer is added to remove small particulates, soda ash for corrosion control, and chlorine for disinfection. The water distribution system serves 115 service connections that are mostly residential. Thorne Bay is 47 air miles northwest of Ketchikan on the east coast of Prince of Wales Island. On the island road system, it lies 60 miles from Hollis and 36 miles east of the Klawock Junction. Thorne Bay is located in the Ketchikan Recording District. The area encompasses 25.5 sq. miles of land and 4.8 sq. miles of water. Prince of Wales Island is dominated by a cool, moist, maritime climate. Summer temperatures range from 49 to 63; winter temperatures from 32 to 42. Average annual precipitation is 120 inches, including 40 inches of snow.

Arizona, Hatch Valley - On Saturday, August 25, 2007 Arizona Circuit Rider Frank Soto met with the Board of Directors for the Hatch Valley Domestic Water Improvement District in Truxton, Mohave County, Arizona, at the request of office manager Jerri Hughes. Hatch Valley DWID PWS# 08-014 is a ground water system that meters both its source and its customers. The system has a certified operator in the community and disinfects on a monthly basis.

The purpose of the meeting was to help the Directors understand the financing for Special Districts and to review the system due to low pressure problems and storage concerns. Circuit Rider Soto explained the financing options available to the district with the possibility of some grants.

The low-pressure problems are caused by to small of supply line (2") feeding an inline booster that can't keep up during peak demand. Circuit Rider Soto suggested that they put in a storage tank large enough to meet the peak demand so that it could be filling during off peak hours.

Savings to the system for consulting fees were approximately $1,500.00 while savings to the system for the pressure problem was $5,000.00. Contact person for the system is Jerri Hughes at 928-769-2213.

Arizona, Tombstone - On June 20, 2007 Arizona Small Utilities Association (ASUA) Circuit Rider #2 (CR2), Neal Whittle, was requested for technical assistance by Tombstone Territories. This is a small system of 25 connections in Cochise County, Arizona.

This system depends on ground water wells and uses full-time disinfection. The Certified Operator is John Robson (1-520-457-2584), and the system is also both Master and service line metered.

The request for technical assistance was a high arsenic level in one of the wells. During this one and a half hour on-site visit Point of Use (P.O.U.) was explained in detail. CR2 was involved with the ADEQ approval process of P.O.U. devices in Arizona and was assisted with help from Ed Thomas of National Rural Water and Watts Manufacturing.

This type of on-site treatment is a perfect treatment as only 13 connections are on this well. The technical assistance was greatly appreciated and savings to the system were in excess of $500.00 in consulting fees. A follow-up visit was planned after Mr. Robson visits the manufacturing facility for the P.O.U. devices.

Arkansas, Nail-Swaim - Mr. Daniel T. Johnson, Circuit Rider from Arkansas Rural Water Association, was called by the Nail-Swaim Water Users Association, located in Newton County, to help find a large water loss on the water system, which was costing them over $2,000.00 a month.

Nail-Swaim has 280 connections with the users and water source, a well, both metered. The system provides full-time disinfection.

Mr. Johnson went to the location March 12-14, 2007 and with the help of the full-time, certified water operator, Lynn Spradley, looked day and night for the leak. They found a very small amount of water leaking; this amount was not close to the total loss amount. At that time Mr. Johnson said it appeared to be a "High Pressure" leak that was only leaking when pressure was applied to the system by the high service pump. He suggested that a hydraulic pressure test be done. This was done and several leaks were discovered. It appeared to have helped a great deal in the total water loss.

As for savings to the system it is no doubt a large amount but until another billing cycle is done it is not possible to calculate at this time, but should be in the range of $1,000.00 to $1,800.00. Total contact time was 21.25 hours.

Arkansas, Little River - Tim Carey, Circuit Rider for Arkansas Rural Water Association, visited the Little River Water Association on May 10, 2007. Little River Water is located in Mississippi County and serves 350-metered connections for a population of 700. The manager, licensed operator and contact person is Dennis Pendergrast (870-531-2158). The system treats the water for iron and manganese. The only other treatment is chlorination. The two wells are also metered.

The problem with the system is that it is a sealed treatment operation with no aeration. With the current treatment, the system can't oxidize the iron and manganese. Tim had talked to another system that had purchased new equipment, and he managed to have the old equipment donated to the Little River Water Association. Tim picked up and transported two high service pumps and motors from N.E. Water located in Mountain Home, Arkansas, and an aerator located in Bono, Arkansas. The cost to the system was nothing.

Savings to the Little River Water Association was over $50,000.

Arkansas, DeQueen - On August 13, 2007 Josh Freeman, Circuit Rider for Arkansas Rural Water Association, was called to DeQueen Waterworks to help with meter problems. DeQueen Waterworks is located in Sevier County, which is in the southwestern part of the state. The system has full-time operators that are certified, a surface water treatment plant that has full-time disinfection and is metered. DeQueen Waterworks has 2,270 connections that are metered. The Mayor, Billy Ray McKelvy, contacted Josh Freeman and Terry Fortenberry (State Circuit Rider for Arkansas Rural Water Association) to come and help with the problem.

Mr. Freeman arrived at 12:30 p.m., Monday, August 13, 2007. Mr. Freeman and Mr. Fortenberry met Mayor McKelvy at city hall to discuss the problem. Mayor McKelvy told Mr. Freeman that he thought there was a problem with the meters at the chicken processing plant because the wastewater was metered and there was more water coming out of the plant than what was going in. Mr. Freeman suggested going to the plant and to look at the meters. On the second meter they came to Mr. Freeman and Mr. Fortenberry discovered that they were not reading one of the stationary zeros printed on the meter; instead of reading the meter in thousandths they were reading it in hundredths. Mr. Freeman left the site at 4:15 p.m. Monday afternoon. The savings to the system was approximately $10,000 a month. Phone #: 870-642-5313

Connecticut, Sprague - Sprague Water and Sewer Authority is a small community of 152 people in Sprague, Connecticut. The 421 services in the system draw water from three well sources. The water is disinfected with chlorine and also uses a phosphate in the treatment process. Todd Hastings is the full-time superintendent of the water authority; his phone number is 860-822-3000.

The Water and Sewer Authority had operated with one full-time and one part-time operator not including the superintendent. Over the past year Sprague lost its full-time operator to retirement and the part-time for other reasons. Todd now supervises two new employees that are anticipated to take the tests for the licenses needed. In the mean time Todd Hastings has been the superintendent and the chief operator.

In addition, the water utility of Sprague has been having large concern with the water supply. Todd has over the last two years attempted to put in new wells and draw more out of existing wells to no avail. In the process of training a new team to operate the water and sewer utilities, Todd, with the water and sewer board, is working with the Town of Sprague to go ahead with redeveloping their reservoir to be the primary drinking water source. Atlantic States also recommended this in previous board meetings in 2006. Despite many attempts by the State of Connecticut Drinking Water Division to dissolve the water system into a larger supplier, Sprague Water and Sewer, with assistance from Atlantic States Rural Water, strives to be a viable and sustainable public water system.

On March 14, 2007 Hastings contacted Atlantic States Circuit Rider Matt Cassedy to provide technical assistance and consulting on the matters at hand. Cassedy convened with the new employees on March 16, 2007 and discussed options and processes for Connecticut water and wastewater licenses. Cassedy recommended time schedules and classifications for each employee as well as appropriate classes and test dates for the next two years. In one year Sprague will have a fully licensed operator for the water and wastewater utilities. This will provide greater stability for the proposed surface water facility as more than one licensed operator is required.

Cassedy continued the meeting with Todd Hastings on matters of finances through the USDA Rural Development. The project cost is approximately 3.2 million dollars. The steps and process was communicated to Todd and in turn will be discussed with the board. Cassedy has corresponded with Johan Strauss at the Norwich USDA office to facilitate this ongoing venture. This major project will be an exciting development for the small town of Sprague and without the help from the USDA and Atlantic States Circuit Rider Program this would not be possible. For the time and consulting Cassedy provided $600 was saved by the Sprague Water and Sewer Authority.

California, Three Rivers - Mark Kerman, California RWA Circuit Rider, arrived at the Three Rivers CSD office for a requested visit at 11:45 a.m. on November 15, 2007. Three Rivers is located in Tulare County. It is a community water system with ground and surface water source that uses full-time liquid chlorination. Randy Pares, 559-561-3480, is the general manager and

certified operator for a population of 3,000 people with 940 service connections that are 25% metered. Three Rivers is a tourist destination close to Sequoia National Park.

Mark met with Randy and gave him information on how to complete the system's Vulnerability Assessment and Emergency Response Plans. Randy expressed his gratitude for the contact and felt confident he could finish the documents.

Mark left the system at 1:00 p.m. Cost savings to the system is estimated at $5,000.00.

California, Lanare - California Rural Water Association Circuit Rider No. 2, Roger Bennett, met with Lanare Community Services District General Manager, Ken Souza, (559) 977-3578, and USDA RUS Manager, Jose Guardado on December 19, 2007. The major thrust of the meeting was to assist Mr. Souza in completing the necessary paperwork to obtain funding for the installation of water meters in the district system.

Lanare Community Services District is in a small community located southwest of Fresno, California. The system has approximately 148 active, unmetered connections, and is served by two wells. One well recently had a new arsenic removal plant constructed next to the well. However, it turns out that the treatment costs were too great for the district to pay, and the well and treatment facility was shut down. Unfortunately, the treatment facility did not have a bypass between the well and the main distribution line leading into the community; and thus, the well was lost as a supply to the community. The other well is old and barely able to pump water into the distribution system. The system does not use disinfection, and all bacteriological tests have been negative. When Mr. Souza joined the district and began investigating the operations, he found that an excessive amount of water was being consumed over and above a reasonable amount of per capita consumption. Additionally, the district was bankrupt, with funds missing, and was dysfunctional overall. After receiving permission and partial funding from the California Department of Public Health, a bypass was installed at the treatment facility to permit use of the well. The part-time contract operator stopped providing any operational services because the district owed him in excess of $40,000.

Mr. Bennett has been advising Mr. Souza in the district operation and administration, as well as assisting the district in applying for funding for new water meters and other needed facilities. To date, Mr. Bennett has saved the district in excess of $50,000 in consulting and contracting fees.

California, Independence - Independence, California is a rural community located in Inyo County. This rural region of the eastern sierras has less than two percent private lands, therefore, is classified as extremely rural with minimal growth potential. Several small Native American tribes exist within the region including the Fort Independence Tribe. This small system has 43 chlorinated non-metered user water connections and operates on three metered ground water wells. Mr. Hardwick, California RWA Circuit Rider, has worked with this tribe on multiple occasions on a various range of technical areas.

Recently Mr. Norm Wilder, certified, part-time domestic water operator for the tribe, asked if Mr. Hardwick could assist them with a rate structure and capital improvement plan. Mr. Wilder

noted that the challenge was in getting the importance of these items through the tribal council level, and he needed CRWA'S assistance with this.

On April 19, 2007 Mr. Hardwick, Mr. Wilder and the tribal council met to cover the rate study and capital improvement planning spreadsheets. Mr. Hardwick outlined their current financial status; including the fact inadequate capital improvement planning deficiencies existed. A complete inventory of the system was reviewed and five-year budget projection presented and covered. The tribal council was very interested in the information presented and do feel they should now look at capital improvement planning as a part of their rates.

Mr. Hardwick will continue to work with the tribe to assist in the rate setting process. Based upon the three plus hours on-site time and numerous hours in preparation, this tribe has saved approximately $6,000 to $10,000 in comparison to an outside engineering firm. Without the assistance of CRWA it is doubtful the tribe would be able to afford the assistance provided for free by CRWA Circuit Rider Dustin Hardwick.

Norm Wilder can be reached at 760-878-8065.

Colorado, Colorado City - On April 11, 2007 Circuit Rider Curt Armstrong of the Colorado Rural Water Association made a requested visit to the Colorado City Metro District in Pueblo County, Colorado. Circuit Rider Armstrong contacted full-time, certified operator Dennis Baca at the Colorado City Metro District Water Treatment Plant. This plant has a metered surface water source that supplies full-time, disinfected water to 510-metered connections. The reason for requested assistance was a malfunctioning Hach CL-17 Chlorine Analyzer.

Operator Baca had performed normal maintenance on the analyzer after it began giving readings that were out of tolerance; this did not fix the problem. Operator Baca was aware of Circuit Rider Armstrong's many years of experience as an Instrumentation and Control Technician and called for assistance. Circuit Rider Armstrong performed an inspection and function test on the analyzer and determined that due to the length of time since major maintenance had been done some of the analyzer's parts were in need of replacement.

Circuit Rider Armstrong used this time as an opportunity to train operators Baca and Fezatte on the maintenance of the Hach CL-17. The analyzer was removed from service and Circuit Rider Armstrong assisted operators Baca and Fezatte in rebuilding the analyzer to Hach specifications. The analyzer was then function tested, calibrated and returned to service.

This requested three-hour visit saved the Colorado City Metro District approximately $800 in equivalent services and returned the chlorine analyzer to service in a timely manor. The system's contact number is 719-676-3345.

Colorado, Forest View – Forest View Acres called Colorado RWA on May 29, 2007 and requested information on how to flush their distribution system. They are currently under a boil order from the Colorado Department of Public Health due to losing system pressure caused by a supply line rupture. This system is located El Paso County, just north of Colorado Springs.

Forest View Acres' water supply comes from a metered well, and an emergency supply can be supplied by the Town of Palmer Lake, Colorado. They have approximately 320-metered taps on the system. They contract with Community Solutions, a company in Denver that supplies their water system contract operators. They chlorinate their supply full-time.

Colorado RWA Circuit Rider-2, Randy Thielemier, contacted Josh Hokum, certified operator, at 720-384-5909, and told him the procedures that should be followed. On May 30, 2007 Mr. Hokum called the Colorado RWA office and asked for assistance. CR-2 made an appointment for 10:30 a.m., approximately one and a half hours from the time of his request.

Upon arrival at Forest View, Mr. Hokum showed CR-2 the distribution system map. Mr. Hokum and CR-2 selected sites to flush and check for chlorine residual. The two men flushed these sites and resulting residuals were between 0.4mg/L and 1.2 mg/L. CR-2 informed the system that they needed to make sure that they had a residual at the tap that they are taking the samples from in order to avoid a false read. They had one last section of town to flush, so Mr. Hokum told CR-2 that they would finish up with this last flush and get the samples to the lab. CR-2 called Mr. Hokum and his crew the next day, and they said that they got four of the five samples to the lab, but had to flush the last section of the system for an extended time. Therefore, the last sample didn't get to the lab until Thursday, May 31st.

On Friday, the 1st of June, CR-2 called Josh Hokum and asked how the lab tests went. Josh said that the first four samples were good, and he would find out the results of the last sample at 3:00 p.m. That afternoon, Josh called and said that the health department had lifted the boil order and thanked CRWA for the help.

Total on-site time was four hours. Total savings to Forest View Acres was approximately $1,000.00 in personnel costs, if they would have hired personnel to complete the system flush and bacteria sampling. With CRWA's help, Forest View Acres had the boil order lifted just in time for the weekend.

Delaware, Dagsboro - On July 11, 2007 Delaware Rural Water Association Circuit Rider, Sherrie Turner, dropped in on the Town of Dagsboro per a request from Rural Development. This small Sussex County, Delaware town has only been operating their new water system for a year and a half and RD was concerned about their progress.

Sherrie met with the Mayor, Wayne Baker, part-time, certified operator, Bill DeHaven, and town manager, Stacey Long. They discussed unaccounted for water. It seems the system's purchased amount and their billed amount were quite different. The Town of Dagsboro purchases their water from their neighbor, the Town of Millsboro, who has full-time disinfected ground water. They are metered at the source and all 200 users are metered.

For that reason, Sherrie discussed the process of doing a water audit for this operation and maintenance contact. She explained in detail the procedures and steps to be taken until all were confident. Since they were new borrowers Sherrie questioned their status on the system's VA/ERP and offered training and assistance on that matter.

Consequently, according to two follow-up visits things were progressing nicely. Also as a result of this significant contact Dagsboro remains in compliance with their lending agencies, has a thorough knowledge of doing a water audit, is moving ahead with their VA/ERP, and knows that the Delaware RWA will be there when needed. With only two hours total on-site contact time and the benefit of e-mail the Town of Dagsboro has a monthly savings of approximately $2,000.00. Wayne Baker may be reached at 302.732.3777. All the help offered was greatly appreciated.

Delaware, Blades - On Monday, April 23, 2007 Delaware RWA Circuit Rider #2, Robert Slater, received a request from the Town of Blades (302/629-7366). Brandon Slater called and asked if Robert would stop by and help him with a hydrant they were having a problem with. The Town of Blades dates back to the 1700's but was one the last of Sussex County's unincorporated to incorporate. The municipal water system is made up of 320-metered connections. The town has two ground water sources that are metered with two full-time operators and full-time disinfection.

The Circuit Rider arrived at 8:30 a.m. and was informed that the day before the town was flushing hydrants at the new marina and found it would not shut off. They went to the street valve and found it to be over eight feet deep and not having a valve wrench that would reach, so they had to borrow one from a neighboring town. The delay caused a large water loss.

Upon the Circuit Rider's arrival the system employees and the circuit rider disassembled the hydrant and found that when it was installed to long of a control rod had been used, which jammed the brake away coupling. So when they tried to shut the hydrant off it unscrewed the seat so it did not stop the water flow. The Circuit Rider helped them determine the problem and order new parts and will help assemble the hydrant when the parts arrive.

After spending three and one half hours, not only the hundreds of dollars the Circuit Rider saved the town, the training that the operator received was invaluable.

Florida, Port St. Joe - In October of 2006, Mr. Lee Vincent, City Manager of the City of Port St Joe, P O Box 278, Port St Joe, FL 32456, (850-229-8261), contacted William Secoy, Florida Rural Water Association Circuit Rider. Mr. Vincent requested that Mr. Secoy do a rate fees study for both water and sewer.

Mr. Secoy started the rate review and also recommended a Capacity Fee study be completed on both water & wastewater as the city was experiencing such large growth and had several capital projects planned for the future. The city really needed to collect the proper fees to insure that the present ratepayers would not be paying for growth.

The City of Port St. Joe is located on the Gulf coast 45 miles East of Panama City, Florida. The system currently serves 100% metered 1,156 customers including residential and commercial. The city provides both water and sewer services. The raw water is supplied by the system's three (3) well sites drilled into the Florida Sand and Gravel Aquifer. Standby power is supplied. The

raw water is treated at the metered well site and monitored by the system contract operator. Treatment consists of full-time chlorination.

Mr. Secoy attended several meetings with the council, engineering and utility employees to answer any questions or concerns. The utility staff provided all information to Mr. Secoy to complete the study at that meeting.

On July 23, 2007 Mr. Secoy gave a presentation and training session to the council members on how rates and capacity fees are built. The council accepted the new water and sewer rates and capacity fees. Mr. Secoy has spent a total of twelve (12) hours during the month of July and a total of 75 hours on the project working for the system. Savings to the system is $150,000.

Florida, Gretna - The Florida Rural Water Association received a request for assistance from the City of Gretna, 850-856-5257, in rural Gadsden County for the development of a Capacity Fee Study. RWA Circuit Rider 2, Coy Donaldson, met with City Manager Antonio Jefferson and other city staff and collected information needed for the development of the study and preceded with analysis.

On November 6, 2007 CR2 Donaldson reviewed the proposed capacity fees with city staff and with their endorsement presented the proposal as Board Member Training to the elected City Commission of the City of Gretna. A follow-up contact after the meeting with City Manager Jefferson revealed the approval of the City Commission and a request for a model ordinance to adopt the proposal.

CR2 Donaldson again visited the City of Gretna on November 15, 2007 and presented a selection of model ordinances for consideration.

Approximately 30 hours research and development was devoted to this project with an estimated savings of $5,000.00 or greater to the system.

Florida, Umatilla - On Tuesday, May 29, 2007 Florida RWA Circuit Rider #3 Tom Gustafson received a request for assistance in rate setting from the City of Umatilla, (352) 669-3125. The request was made from the Public Works Director, Mr. Ken White. The City of Umatilla is a rural city with 1,230-metered connections located in Lake County in the central part of Florida. The city uses ground water that is metered and disinfected by chlorination having a full-time water and wastewater operator.

The Circuit Rider met with the City Manager, Glenn Irby, and Public Works Director to discuss the rate structure and costs. The Circuit Rider spent the day using FRWA's rate program to come up with a rate structure and price to present to the City Council that night. The Circuit Rider at the council meeting used a power point presentation to explain the need for a utility rate adjustment. The council was in agreement that rates needed to be adjusted and expressed their gratitude to the Circuit Rider for his assistance.

The rate analysis, if performed by an independent firm, would have cost the city upwards of $35,000. The rates when implemented will increase the city's revenue by over $300,000 per year.

Georgia, Garden City - On a routine on-site visit June 26, 2007 to Garden City, Georgia Rural Water Association Circuit Rider, Bud Crawford, met with Superintendent Charles Draeger (cell phone: 912-657-8809) and discovered the scales on the fluoride feed equipment were in disrepair and had been for two years. Mr. Draeger said he has been expecting grant funds to pay for new scales but hadn't received correspondence as of late.

Crawford contacted the GRWA Office to investigate the status of the grant application for the new equipment. In conversation with GRWA's Jay Matthews, Crawford discovered the grants were prioritized according to a number of factors and Garden City hadn't qualified in the original process. However, some cities failed to utilize their funds and a small pool of funds was available to be used for like equipment.

GRWA is now working with Garden City to obtain cost estimates on new scales and assisting in arranging necessary payment. The approximate cost of the new scales is $3,000.00 if total funds are available.

Georgia, Nashville - The City of Nashville, 229-686-5527, is located in Berrien County in South Georgia. Water is supplied by two-metered ground water wells of which chlorine, fluoride, and polyphosphates are added at each site to meet State of Georgia Water Quality requirements. The city serves 1,725-metered service connections.

Over the past few weeks, the city started experiencing severe entrapped air in several locations within the distribution system. Extensive flushing was not alleviating the problem. John Reynolds, Water Superintendent/full-time, certified operator, notified Georgia Rural Water Association (GRWA) asking for assistance with this problem.

The initial meeting was held on November 15, 2007. Attending were Mr. Reynolds and GRWA Circuit Rider (CR2) Cleve Edenfield. A plan of action was devised and implemented to evaluate all source water levels and air release valves. No problems were noted or found. GRWA then recommended making visual inspections of all fire sprinkler systems because of compressed air induction to prevent freezing. After several evaluations, the problem was located and the valve was closed off. Afterward, this proved to correct the entrapped air and returned the system back to normal.

A follow-up visit was held on December 11, 2007. Present were Mr. Reynolds, City Manager Amanda Luke, City Clerk Johnny Hall, and CR2 Edenfield. GRWA implemented a cross-connection program to regulate the city's water source from becoming contaminated from other foreign materials.

Total time spent was 11 hours, of which seven hours was spent on-site. This was a learning experience for the city on how cross-connection effects water quality and can be the source of the system's problems. Due to GRWA assistance the city will save approximately $1,000 weekly by not having to flush excessive thousands of gallons of treated water and unnecessary man-hours spent trying to manage the problem.

Georgia, Cave Spring - The City of Cave Spring, Georgia (706-777-3382) is located 15 miles south of its county seat, Rome, in Floyd County in Northwest Georgia. Cave Spring is the home of Georgia's first School for the Deaf established in 1846. The water supply lends its name to the city, hence one CAVE, one SPRING. The water supply is a protected, disinfected mineral spring in use since 1829 and capable of producing seven million gallons per day at a temperature of 56 degrees Fahrenheit. The spring is under the control of the city's Certified Operator, Terry Sentell. The city supplies treated water to 563 city users, 561 county users and 365 Alabama customers.

On July 23, 2007 Georgia Rural Water Association Circuit Rider #3 (CR), Mickey Spinks, made an unannounced call to the city to discover that the city has been loosing over nine million gallons a month for the past year due to unknown causes. CR met with the City Clerk, Mayor and Certified Water Operator to determine possible causes of the loss. The city requested that GRWA assist in this project. It was determined that storage tanks were emptying and filled on an unscheduled rate, whereby CR contacted Reserve Control Systems in Birmingham, Alabama to make an on-site inspection and submit a presentation of installing a SCADA control system.

The CR advised the city to consider placing additional master meters in significant areas (city, county and out-of state water lines) to determine if treated and metered water to these areas may determine correct master metering recording, usage and billing. Presently, the project is ongoing but if successful a savings of $42,000.00 per month may be achieved.

Hawaii, Kawela – Robert Brokate, Hawaii Wastewater Circuit Rider, met with Lisa Foster and her staff from the Kawela Plantation Water, M system, on Molokai, Hawaii. After an initial introduction and short meeting Robert accompanied Kaleo Puaa for a brief look at the system.

At the lower storage tank we discovered an emergency bypass valve to the pilot valve opened in error. We went over the sensing piping layout and operation providing Mr. Puaa with an improved understanding of the system.

Kawela Plantation uses ground water and disinfects with sodium hypochlorite. At present the system employs two maintenance persons, neither is currently certified but both are anticipating sitting for the next exam.

Idaho, Roberts - On February 27, 2007 at 9:00 a.m. Idaho RWA Circuit Rider Bill Hays made a requested on-site contact with Mayor Gary Mitchell at the City of Roberts. Mr. Mitchell can be contacted at 208-228-3220.

The City of Roberts is located in Jefferson County, Idaho and has 171 service connections that are metered and a population of 600. The city's water supply is ground water that is metered and is disinfected full-time. The city has one full-time licensed distribution operator.

Mayor Mitchell had contacted Circuit Rider Hays about conducting a Vulnerability Assessment and completing an Emergency Response Plan. Circuit Rider Hays met with Mr. Mitchell, City Clerk Gayle Scrivner, and Distribution Operator Rick Lamb to assist them with the city's Vulnerability Assessment and Emergency Response Plan. Circuit Rider Hays used a laptop computer and the SEMS Software program to help complete the Vulnerability Assessment and

Emergency Response Plan and meet compliance with Rural Development requirements as well as Idaho Department of Environmental Quality rules requiring an Emergency Response Plan.

Circuit Rider Hays spent approximately six and one-half hours on-site during this contact and saved the City of Roberts approximately $15,000. Circuit Rider Hays will follow-up on this contact as requested to update the city's Vulnerability Assessment and Emergency Response Plan.

Idaho, Melba - On August 13, 2007 the Idaho Rural Water Association Circuit Rider, Kevin McLeod, was contacted by the City of Melba (208-495-2722) for assistance with total coliform hits on their monthly routine samples. Melba is located in Canyon County. The city has a population of 500 people. They serve 175-metered connections with two deep-metered wells and an 80,000-gallon storage tank. Melba is primarily a farming community. Mr. McLeod's contact was with the system's new operator, Dennis Rogers. Mr. Rogers is not yet certified. The City currently has a Rural Development loan for wastewater.

After taking the routine sample for the month of August, the sample came back positive for total coliforms. Four follow-up samples also came back positive. After the follow-up samples turned out positive, Mr. McLeod assisted Mr. Rogers with connecting the system’s old chlorine pump to the primary well. Two other samples (one on the primary well and one at the original positive site) came back e-coli positive. The State then ordered a mandatory boil order. A positive sample at the well prompted an immediate shut down of the primary well. The secondary well was then activated; samples from this well came back negative. The chlorinator was then connected to the secondary well. The system was chlorinated and flushed several times. The system did not chlorinate before this event.

Mr. McLeod spent over thirty-three hours in Melba assisting Mr. Rogers and also attended a City Council meeting to bring the council and citizens up to date. Two consecutive days with clean samples allowed the State to lift the boil order. Chlorination will be ongoing from now on. Follow-up tests will be conducted on the primary well to test for surface water influence. Idaho Rural Water Association staff will conduct these tests. Mr. McLeod will continue to work closely with Mr. Rogers and the City of Melba in the future.

With the help of Mr. McLeod and IRWA staff, savings to the system will be $15,000 to $20,000 dollars in engineering fees, plus future fees for the additional test to be conducted.

Idaho, Craigmont - On March 29, 2007 Idaho RWA Circuit Rider Diane Sauer along with Wastewater Tech Virgil Leedy arrived in the City of Craigmont to perform a rate study on the water and wastewater systems. The operator and clerk had requested this service under the direction of the mayor. Contact telephone number for the city is 208-924-5432.

Craigmont is located in Lewis County, which is situated in the northern part of the state. Lewis County is part of the Palouse, a wide and rolling prairie-like region of the middle Columbia basin. The Palouse is a region of Eastern Washington, North Central Idaho, and, in some definitions, extending south into northeast Oregon. It is a major wheat-producing agricultural

area. The city serves water to 345-metered connections from a metered ground water source that is disinfected. Monte Thomason, the operator works full-time and is certified.

The Circuit Rider and Wastewater Tech spent 12½ hours on-site over two days. Time was spent performing two rate studies and presenting the information to the Council during a meeting on March 30th.

The City is breaking even on its water system and not really putting any money aside for capital improvements or depreciation. The system is approximately 50 years old and has fully depreciated. Some major upgrades and repairs need to be performed to continue providing safe drinking water to the approximately 550 residents.

The Circuit Rider and Wastewater Tech were able to show the council, clerk and operator that there is a shortfall and made some suggestions on how to start building up the City's reserves. The City's General Fund has been taking the brunt of the City's expenses and it was explained that the Enterprise Funds need to be self-supporting. The Council was given some good information and will be raising both the water and wastewater rates. The Circuit Rider and Wastewater Tech offered to return for the public hearing.

Savings to the system for the work performed by the Circuit Rider and Wastewater Tech as opposed to a consulting firm was in the $5,000.00 to $10,000.00 range.

Illinois, Winslow - The Village of Winslow, 815-367-3651, was provided assistance on December 13, 2007 by Illinois Rural Water Association Circuit Rider Gale Moore as requested. The Village of Winslow is located in Stephenson County, Illinois. This system has 160 connections, metered ground water as their source, user metered, part-time operator, contracted certified operator, and full-time disinfection.

In the three hour fifteen minute contact with certified operator, Marlin Mason, water-sampling procedures were discussed. Marlin stated their supply was chlorine exempt until they started getting unsatisfactory sample results. The Illinois Environmental Protection Agency required them to attend a seminar on sampling technique and procedures. Gale presented the needed information. Possible savings to the system was approximately $1,000.00

Illinois, Greenwood - Greenwood-Creek Nation Water District is located in Franklin County, Illinois, (618-724-4816). The metered surface water purchase system services 696-metered connections. The system provides full-time disinfection and a full-time certified operator.

On July 11, 2007 Alice Schablowski, district clerk, and Corky Berner, certified operator for the district, requested assistance from Patricia Gammill, Circuit Rider #2 for Illinois Rural Water Association. The Circuit Rider spent three hours and fifteen minutes at the system.

The Circuit Rider was able to provide assistance with Alice and Corky's Emergency Response Plan, Vulnerability Assessment, Cross Connect Control Survey questions and Environmental Protection Agency inspection concerns. These issues are not only important but are also required

by the EPA and Rural Development. Due to the assistance the system was able to save an estimated $3,000.00 in engineering fees.

The certified operator for the district also had concerns about the system pressure. With equipment supplied by IRWA the Circuit Rider was able to loan the system a pressure chart recorder and give instruction on its use. This way the operator can monitor the system and save an estimated $2,000.00 for the purchase of such a piece of equipment. Both the clerk and operator were very thankful and pleased with assistance provided by the Circuit Rider and Illinois Rural Water Association.

Illinois, Nutwood - On December 17, 2007 Circuit Rider John Bell was contacted by Field Staff Coordinator Wayne Nelson regarding his conversation with USDA-RD Area Specialist Robert Mashhoff in Jacksonville, Illinois. The conversation concerned the fiscal and operational status of the Nutwood Water District.

Mr. Nelson informed Mr. Bell that a background e-mail of the Nutwood situation had been sent to Mr. Bell detailing the concerns of Mr. Mashhoff. Mr. Nelson requested that any previous scheduling on Mr. Bell's part be set aside so that he could assist the Nutwood Water District as soon as possible. Circuit Rider Bell scheduled a meeting with Nutwood Water District Board President Joe Eckart for December 18th to discuss and provide assistance on two major problems that needed immediate attention in the district The problems were 1.) The water district had been operating without the services of a certified operator and IEPA had informed the district that punitive action was close-at-hand if the matter was not quickly resolved, and 2.) The fiscal reports to USDA-RD had not been processed for the previous fiscal year. A recent meeting with the Nutwood Water District and Mr. Mashhoff had not resolved the matter to Mr. Mashoff's satisfaction.

The Nutwood Water District includes all of the unincorporated area of Nutwood, Illinois. The water district, located in Jersey County along the Mississippi River flood plain, receives its treated water from the City of Jerseyville. The population of the Nutwood is 72 with 28-metered customers. The water district had employed certified operator Greg Beckwith but had discontinued his services. At the time of Mr. Bell's meeting with Board President Joe Echart, Mr. Echart was performing all the operational duties for the water district but was not a certified operator.

On December 18th, Mr. Bell met with Mr. Echart and reviewed the above information. Mr. Bell gathered the necessary details from Mr. Echart to complete a rate study. The rate study would partially resolve the data needed by Mr. Mashhoff. Mr. Bell informed Mr. Echart that he would be meeting with the City of Jerseyville Superintendent of Water and Sewer, Robert Kincaid, to determine if the City of Jerseyville could/would provide a certified operator for the Nutwood Water District. Mr. Echart stated that he and a Board member would meet with Mr. Kincaid later that afternoon to also discuss the certification matter.

Mr. Bell met with Mr. Kincaid and informed him of the above situation. In addition Mr. Bell requested billing data from Mr. Kincaid regarding the Nutwood Water District. Mr. Bell completed the rate study on the night of December 18th and phoned Mr. Echart concerning his

findings. Mr. Echart stated that he concurred with Mr. Bell's study and that the document could be forwarded to Mr. Mashhoff. Also, Mr. Echart stated that he had met with Mr. Kincaid and Jerseyville Utility Chairman Billy Reese and that the City of Jerseyville would provide a certified operator for the Nutwood Water District. Mr. Kincaid had been instructed to contact IEPA and inform them that this matter had been resolved. Mr. Echart was informed that Mr. Bell would contact Mr. Mashhoff on December 19th and forward by fax the rate study that had been completed. Mr. Echart stated that he would also contact Mr. Mashhoff by phone and update Mr. Mashhoff as to what had transpired.

On December 19th Mr. Bell contacted Mr. Mashhoff and Wayne Nelson concerning the information for the water district. Mr. Mashhoff requested a detailed back up to the rate study, which Mr. Bell provided. Mr. Mashhoff also stated that Mr. Echart had contacted him and things were moving along to Mr. Mashhoff's satisfaction. A quick review with Mr. Mashhoff, Mr. Nelson and Mr. Echart suggested that the Nutwood Water District had saved from $5,000 to $10,000. The savings attached to the rate study was $2,000 and the avoidance of an IEPA penalty of $3,000 to $8,000 based on other such penalties assessed by IEPA for similar infractions.

Indiana, Veedersburg - On January 11, 2007, Lonnie Frazier, Circuit Rider #1 for Alliance of Indiana Water Association, proceeded to Veedersburg in Fountain County, Indiana. The full-time operator, Paul Keeling, had asked Circuit Rider #1 to help determine why he wasn't getting enough chlorine residual out to the system.

Veedersburg receives its water from deeply drilled wells, which are metered. The system has 850 connections, which are also metered. It does have one large factory, which draws around 250,000 gallons of water a day. The town disinfects full-time. The rest of the town's draw is about 100,000 gallons a day. The state primacy agency, IDEM, had called the operator and wanted to know why the operator wasn't retaining a chlorine residual of at least 0.02 in the system, which is required of all systems in Indiana.

Upon the inspection of the system's chlorination system, Circuit Rider #1 found that the chlorinator was maxed out and wasn't big enough to put anymore chlorine in the system than what it was at the present time. The town council wanted to save some money when the old chlorinator went out and got the cheapest they could find. Also, Circuit Rider #1 found that the injection system for chlorine was bad. As for the 'guts' in the injector, they were worn out and the injectors overall needed to be replaced. Also Circuit Rider #1 found a leak in the top of the injector.

Because of these findings, Circuit Rider #1 saved the town an estimated amount of $500-$1,000 trip charge that an engineer or sales consultant would charge. Also, if the town doesn't correct these problems, IDEM could put a fine of $250-$25,000 a day on the town and require the town to issue a boil order until the problem is corrected. The town could also have the expense of providing the entire town with bottled water. That could run into the thousands of dollars before the problem is fixed. The operator was going to order the necessary equipment to fix the problems.

Indiana, Ramsey - The Ramsey Water Company (812-347-2551) is a large rural water system located in Harrison County, Indiana. They serve a population of 13,500 with 5,000-meter connections and sell water wholesale to other smaller water systems in the area. The water system has a Rural Development loan for water system improvements. Their source of water is ground water that is disinfected and metered at the treatment plant and pumped into the distribution system where it is metered at each customer service connection. The water system has approximately 400 miles of water main with over 500 flush and fire hydrants.

Mr. David Popp, General Manager and full-time certified operator for the Ramsey Water System contacted the Alliance of Indiana Rural Water's Circuit Rider #2, Gordon Meyer. Mr. Popp requested assistance from the Alliance in conducting a water audit on the entire distribution system.

On July 9, 2007 Mr. Meyer traveled to Ramsey and met with Mr. Popp and Mr. Brandon Hawkins, a distribution system operator for the water system. Mr. Meyer explained the concept of conducting the water audit, which consisted of traveling throughout the water system and listening to the hydrants for the sound of water leaks by using the Alliance's sub-surface leak detector. Mr. Meyer and Mr. Hawkins then traveled throughout the distribution system during the next three working days listening to approximately 275 of the hydrants and over half of the distribution system. They were able to locate six areas of water leaks.

The Ramsey Water System is a very well maintained system with very little water loss. Due to a prior commitment, the water audit could not be completed. Mr. Meyer met with Mr. Popp and agreed to return at a later date to finish the water audit. The total time spent on-site during the first part of the audit was 23 hours. Ramsey Water saved approximately $15,000 from the assistance provided, which would have been needed to hire a private firm to conduct the audit. Lost revenue would also be saved from the unaccounted for water loss caused by the water leaks once they are repaired.

Iowa, Le Grand - On November 8, 2007 Circuit Rider Jennifer Schwoob went to Le Grand, Iowa to visit with full-time certified operator Doug Beadle on his water loss. Le Grand is located in eastern Marshall County in central Iowa. Le Grand has a population of 883 residents with approximately 353 service connections. Doug can be reached at 641-750-7714. Le Grand buys 100 percent of their water from Central Iowa Rural Water Association (CIWA). Le Grand had two wells that had contaminants that were causing a constant problem, so they decided the best thing for them would be to hook up to CIWA.

Since they buy all of their water, Doug keeps a close eye on water loss. Doug has a loss of only about 8 percent in a normal month. In September Doug flushed fire hydrants and he started showing a significant increase in water loss after that. Doug typically pumps about 60,000 gallons per day and he went to 90,000 gallons per day after this. Jennifer and Doug had previously discussed several things he could do to try and find this leak. He was unsuccessful; therefore, Jennifer arrived to help. After only about an hour Jennifer had found a leak at the local grain elevator. They had a 500-foot service line that was leaking into a drain tile that went under the railroad tracks and out of town. Jennifer saved the city about $2,500.00 in time and lost water that they are buying.

Iowa, Elliott - Elliott, Iowa is a community of 402 with 161 connections located in Montgomery County in western Iowa. The water supply for the city consists of two wells located within the city limits. There is no treatment and the only metering done is at each well. Elliott has no certified operator at this time. The previous operator collects samples and handles reporting for the city until a new employee, Mike Christensen, can become certified with the State of Iowa.

On August 24, 2007, Iowa Rural Water Association's Western Iowa Circuit Rider, Dale Barrie, was contacted by Matt Rhodes of DNR's Field Office #4 requesting assistance with a bacteriological violation at the City of Elliott. Samples collected by the mayor (the part-time operator was on vacation and not available) on August 21st were both positive for E-coli bacteria. This was especially significant since the city does not disinfect the water entering the distribution system. Shortly after speaking with Mr. Rhodes, Mr. Barrie was contacted by Elliott's Mayor, Steve Howell (712) 767-2351, requesting assistance. Mr. Barrie provided Mr. Howell with contact information for a well service company who had the ability and equipment to shock chlorinate the wells and to chlorinate the distribution system. Upon arrival on-site, Mr. Barrie assisted city staff with preparation and distribution of public notification and the boiled water notice. Since there is a grade school in town, special assistance was provided in order to provide the students with information and drinking water.

The system was then inspected to try and determine the source of the contamination; there were several issues with the well vent screens and bulk water sales, which would need to be addressed. It was also determined a sewer project was underway and several water lines had been cut during the project which may have allowed a direct connection between the sewer and water systems. These items were discussed with city personnel and corrective actions determined. After the arrival of the well company a plan was set into place to shock chlorinate both wells and add a chlorine level of 3.0 to 4.0 mg/l throughout the system and storage tank. Flushing and dechlorination of the discharge were also addressed. Mr. Barrie provided training and equipment for Mr. Christensen to monitor the chlorine levels.

It was also determined after visiting with the lab used by the city that the samples that had been collected on Thursday could not be used due to the use of the wrong bottles for sampling and replacement samples would have to be collected and delivered to the lab by 4:30 pm. Mr. Barrie agreed to deliver the samples to the lab in Newton by that time. Correct sample bottles were located and proper sampling procedures were shown to Mr. Christensen. After confirming the status of the disinfection procedures with DNR and the city and the status of the public notification, Mr. Barrie left after four and three-quarter hours on-site to deliver the replacement samples. Follow-up phone and on-site contacts will be made to assure proper disinfection was completed and to assist to prevent reoccurrence in the future.

Kansas, Harper - Kansas Rural Water Circuit Rider No. 1 Jon Steele provided assistance upon request of Sam Troyer, Operator for Harper RWD 5, on May 29, 2007. The district requested assistance operating the system while the storage tank was out of service for repairs. Harper RWD 5 is located in Harper County in the south central part of the State. The system provides service to 110 connections. The water source is ground water purchased from the City of Harper. The operator is a part-time operator in training. The system uses chlorination for full-time

disinfection. The total time required providing this assistance was three hours off-site and six hours on-site. This assistance represents a savings estimated at $1,000 to the district by using the state association.

The operator now has a better understanding of how the system is designed and how to operate the system with the south tower out of service and how the tank can be efficiently drained. The Circuit Rider also helped the operator replace the master meter in the north pumping station. This will help the operator to understand where the water usage is taking place, better monitor for water loss and also to help isolate the system section for maintenance issues.

Kansas Rural Water Association provides follow-up documentation on significant contacts and assistance. The follow-up for this assistance was sent to Sam, the Board Chairman, District Accountant and Kansas' primacy agency. It was copied to state regulatory agencies and to USDA Rural Development. It reads as follows:

May 31, 2007

Sam Troyer
Harper RWD 5
1015 Central
Harper, KS 67058

Dear Sam,

It was a pleasure to assist you with the District's operations while the tank was out of service to repair a leak and inspect the interior of the tank. You had checked the pressure at 4 am and it had fallen below 20 psi so you had no choice but to restart the pumps. The pumps ran and filled the tank to a level to provide 35 psi by 6 am. At that point we had 81 feet of water in the tank. The Idea is to shut the pumps down to allow the water to be used out of the tank just to the critical point, then shut the tank down and restart the pumps to keep the system in pressure. This ensures conservation and the least amount of wasted water.

From our previous work we knew that the tank could be isolated from the system and drained from the hydrant that was plumbed in between the tank and the valve. We opened the hydrant to drain the tank. We calculated the amount of water in the tank at just over 30,000 gallons. We installed a hose and a meter on the hydrant to determine just how much water we were going to lose. At 34,000 gallons on the meter we knew something was wrong. The valve to isolate the tank wasn't holding and water from the system continued to enter the tank. We worked on the valve and got another half a turn on it. That stopped the flow and we completed the draining process. 36,000 gallons were drained.

After opening the tank and cleaning the bottom we discovered the cause of the leak was due to a pitted weld at the fill tube. The tank company did the welding repairs and painted the repaired area. The tank was disinfected and then the valve was opened to start the refilling process. While in the cleaning phase we found a couple of bird skeletons in the bottom of the tank. This was due

to a screen missing on the vent tube allowing birds to enter the tank. The screen was replaced. This as I recall was a problem 10 years ago when I cleaned and inspected the tank then. The coating on the interior of the tank looked pretty good at the bottom. At the top there is some rusting starting to show. There was also a film on the interior of the tank. It is possible this could be from food grade oil used in oil lube vertical turbine pumps that is used by the city since you purchase your water from them. There are still a few of these types of pumps around but most have been replaced with water lube systems. The safety climb cable on the tank ladder was flapping in the wind and rubbing the paint off; it was tied off with nylon ties to prevent this.

We also changed out the master meter at the north pump station. By having a functioning meter here we can better determine how much water is going to this part of the district and keep a close eye on water loss problems.

Sincerely,

Jon Steele
Circuit Rider
C: Sid Burkholder, Chairman
Gene Grabs, Accountant
Vickie Wessel, KDHE
Gary Smith, USDA Rural Development

Kansas, Crawford - Kansas Rural Water Circuit Rider #2 Bob Kirby provided assistance upon request to Ed Thompson, water operator for Crawford Chicopee Water Corp., 620-231-2115 on December 21, 2007. The assistance concerned high unaccounted for water. This system is located in Crawford County in southeastern Kansas. It serves 190 connections. The operator is part-time and is not certified. The system utilizes continuous disinfection. The water source is Public Wholesale 11.

The total time to provide this assistance was one and one-half hours off-site and seven and three-quarter hours on-site. The potential savings to the system because of this assistance is estimated to be $ 25,550. Kansas Rural Water Association provides follow-up documentation to many of the technical assistance visits. A letter was provided to the system summarizing this assistance; the letter was copied to appropriate state agencies as well as USDA Rural Development. The letter provided to the system read as follows:

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December 23, 2007

Ed Thompson
Crawford Chicopee Corp.
212 South Pesavento Ave.
PIttsburg, KS 66762

Dear Ed,

This is in follow up to the recent visit by KRWA concerning the problems with unaccounted for water the system was experiencing. It was a pleasure to meet you and I would like to thank you for the opportunity to assist you with this issue.

On Friday December 21, 2007 we met and performed a water loss survey in and around Chicopee. After some valve work we were able to determine the general area where a significant leak was located. When the area was walked, we found a significant leak in front of the residence at 401 West Crestview Avenue. The leak was located in tall grass and was running under the vegetation into an irrigation pond for the golf course.

This leak was estimated to be running at almost 14 gallons per minute or around 20,000 gallons per day. The system purchases water from Public Wholesale District No. 11 at a cost of $3.50 per thousand gallons. With this repair the system should recognize a monthly savings of $2,100 and an annual cost savings of $25,550.

Please call Kansas Rural Water Association if we can be of further assistance. Also, visit the KRWA website www.krwa.net for news and information concerning water and wastewater utilities, upcoming training opportunities and other KRWA programs.

Sincerely,

Bob Kirby
Technical Assistant
C: Jerry Lomshek, Bookkeeper

Kentucky, Muhlenburg - The Muhlenburg County Water System is located in Muhlenburg County, Kentucky. Muhlenburg County Water System has 6,040-metered service connections. The community utilizes purchased water from the Centertown Water System. The raw water is metered and disinfected by the producer. Muhlenburg County has chlorination booster systems at the pump stations to improve disinfection controls. The system has a full-time, certified operator.

On July 27, 2007 Jeff Spurlin, certified operator for Muhlenburg County Water, contacted Kentucky RWA Circuit Rider #1, Tim Blanton, for assistance in leak detection. Within the Powderly distribution area, the operations crew and Circuit Rider 1 performed leak survey work. After locating and isolating valves it was determined that the leak was on an eight-inch PVC

water line and was leaking at a rate of 56 gallons per minute. It was reported by a homeowner that this leak had appeared 18 months earlier.

The effects of a leak of this nature on a water system adds up to 80,000 gallons per day, and a loss in revenue of $96.00 per day, or $2,880.00 per month, and $34,560 per year. To more efficiently find and repair water leaks like this Circuit Rider 1 has assisted the system in designing an ongoing leak detection program. With ongoing efforts water losses of this severity can be identified and corrected in a timelier manner. Circuit Rider 1 spent five hours and forty-five minutes on this leak discovery, saving the water system $34,560 per year.

Kentucky, Marion – On August 21, 2007 Kentucky Rural Water Circuit Rider #2 Dell Harris provided technical assistance to Marion County Water District, which is located in Marion County, Kentucky. Marion County Water District is a water system with 5,401-metered service connections. They purchase treated surface water. The raw water is metered and full-time disinfection is required. The system has a full-time and certified operator. Jimmy Mudd, General Manager, (270) 692-2004, contacted Circuit Rider #2 for assistance in completing his Initial Distribution System Evaluation (IDSE). This requires systems to pick sites for disinfection by-product sampling, and submit a formal sampling to the Environmental Protection Agency (EPA).

Circuit Rider #2 utilized an IDSE template developed by National Rural Water Association (NRWA). This template explained requirements, helped the system justify the new sampling sites and set a schedule for these samples. A consultant would have billed the system for assisting with the IDSE. This would have cost the system in excess of $6,500. The Circuit Rider spent three hours working on-site.

Kentucky, New Haven - Jeff Lee, the #3 Kentucky RWA Circuit Rider, responded to a request from Tim Bartley, the certified full-time water distribution superintendent for the City of New Haven (502-549-1002). The request for assistance was help with leak detection.

Jeff arrived on July 30, 2007 at the city's distribution water system. New Haven buys their water wholesale from the City of Bardstown. Bardstown has an Actiflo water treatment plant. The plant is metered at the raw water inlet line. The plant has gas chlorination as its full-time disinfection. New Haven's distribution system has 680 water connections that are metered. New Haven also has other full-time operators.

The total on-site time was five hours at the Nelson County system. Jeff helped the system locate some service line leaks, which added up to 30 gallons per minute. A one-time savings up to $90 dollars a day was realized by the system. The total on-site savings were $2,700 a month.

Louisiana, St. Charles - The St. Charles Parish Waterworks District (ph 985-783-5112) is a metered surface water system serving 10,200-metered customers, using chloramines for full-time disinfection and is operated by Mr. Todd Champagne, certified operator.

Mr. Dondi Troxler, operations manager, contacted the Louisiana Rural Water Association (LRWA), requesting assistance in locating a 15,000,000-gallon per month water loss, found

during their water audit. Mike Gonzales, LRWA Circuit Rider # 1, met Mr. Champagne on-site September 10, 2007 and discussed the distribution system and the areas the operator wanted to look for the leaks. Many of the water mains cross under several canals, bayous, woods and wetlands where leaks can develop and not be seen. Mike surveyed the areas using the isolation valves to determine if there was a leak and to estimate the size of the leak. Several mains were found to be leaking, giving Mr. Champagne locations where he can begin repairs. Mike also used the leak survey as a hands on training for the system personnel in regards to the equipment used, how to get the best use and results from the equipment and methods used by the LRWA on locating leaks.

Mike was on-site for 17 hours saving the system $1,190 based on the hourly rate of $70 per hour had the system hired the services of an outside company. Mike also saved the system hundreds of dollars in training personnel.

Louisiana, South Toledo Bend – South Toledo Bend Water District (STBWD), phone #(318) 586-9836, operates and maintains a surface water treatment plant that utilizes surface water from the Toledo Bend Reservoir to produce drinking water for the sixteen hundred eighty four (1,684) metered water service connections in the district. STBWD water system is operated and maintained by nine (9) operators that are certified or working on acquiring the proper level of certification. The raw water sources are metered and the water system uses chloramines for continuous disinfection purposes. The water system provides water for homes, camps, and the Ebarb Water District #1 in the western part of Sabine Parish of west central Louisiana.

In August of 2007 the STBWD Board of Directors resigned their positions and the Sabine Parish Police Jury appointed a new set of board members to govern the water district. The new STBWD Board President, Ms. Diane Lampman, requested board management training from Louisiana Rural Water Association (LRWA) Management Trainer Ronny Steele. Due to the recent events at the STBWD, Ronny requested assistance from LRWA Water Circuit Rider Rusty Reeves, with the management training session.

On October 22, 2007 Ronny and Rusty conducted the management training session, providing information and answering system specific questions in regards to the water system management, operations, and maintenance. Attending the training session was water district board members, operation staff, and the local Police Juror. Much of the discussion centered on the required number of certified operators and the level of certification required by the State of Louisiana. Based on the discussion, the board members had been advised and were under the impression the water system required level three certified operators to be in compliance. Rusty advised the board that a recent Louisiana Department of Health and Hospitals Sanitary Survey stated that the system had sufficient number of operators on staff at level two certification based on a per house count of population.

Rusty and Ronny were on-site during this visit for five and one-half hours, and supplied information to provide a more effective operation of the water system. Savings to the water system will be realized as a result of the operators not having to seek the level three certification. The system will also avoid, at this time, the higher salaries for such operators, which will result in a savings of approximately six thousand dollars ($6,000) annually per operator.

Louisiana, Coteau - While making technical assistance visits, Louisiana Rural Water Association Water Circuit Rider Timmy Lemoine was called by Shirley Huval, Manager of the Coteau Water System, for assistance with a rate study as the Coteau Water System is in the process of applying for a new loan with RUS and was required to do a rate study before a loan would be issued. Timmy informed Shirley he would be glad to assist her with the rate study.

The Coteau Water System would like to upgrade one mile of two-inch main to six-inch main due to customer complaints of low pressure under peak demand. The Coteau Water System has three metered wells and 2,117-metered customers in rural Iberia Parish, Louisiana. One Class IV operator in Production, Treatment and Distribution operates the system. The system utilizes gas chlorine for disinfection purposes with caustic soda for ph control, potassium permanginate for oxidation, greensand filters and an ortho phosphate for sequestering.

Shirley told Timmy the next board meeting would be on March 19, 2007 and that they would like to perform the study before the meeting. Timmy and Shirley, 337-367-6111, scheduled March 15th as the date to perform the survey.

Timmy arrived on that day and began to compile information with Shirley. The system's current rate is $13 for the first 2,000 gallons and $3.00 per thousand thereafter. According to expenses and the new anticipated loan note, Timmy suggested several rates for the board to consider. The most liked rate proposed by Shirley was to keep the minimum at $13 and go to $3.50 per thousand thereafter. This rate would generate an additional $53,000 and not affect the customers on fixed income who would not use more than 2,000 gallons.

On March 19th the board met and adopted the rate of $13 for the first 2,000 gallons and $3.50 per thousand thereafter, which was what Shirley and Timmy anticipated. The Coteau Water System benefited from the seven-hour visit by avoiding having to hire a CPA to perform a rate study at a cost of approximately $3,000 and will generate a minimum additional $53,000, which is more than adequate to generate revenue to repay a loan with RUS.

Maine, Bethel - Maine Rural Water Association Circuit Rider Ronald Boivin was contacted on July 12, 2007 by Carlton Gardner of the Maine Drinking Water Program and asked to provide emergency assistance to the Bethel Water District. Bethel Water District (1-207-824-2342) is located in Oxford County, Maine. Lucien Roberge is the Superintendent of the water district. Currently the Water District serves 450 customers. From 1893 until July 12, 2007, Chapman Brook has been the town's water supply. The water system meters the drinking water at the chemical building (all customers are metered). Lucien Roberge, the full-time water superintendent, is licensed to operate a public water system of this size. The water district disinfects its drinking water using sodium hypochlorite.

On July 12, 2007, at approximately 1:00 a.m. a microburst deposited six-inches of rain within two hours to parts of Oxford County. Huge mudslides occurred upstream from the water district's intake compound, completely filling the collection area with trees, rocks, silt, roots and possibly dead fish or animals. These mudslides completely demolished a water system building located on top of the reservoir. The town's water supply that had been utilized since 1893 was completely destroyed within two hours of the initial rains. Maine Circuit Riders Mike

MacDonald and Ronald Boivin worked with water district personnel and town volunteers to install a temporary dam along a secondary brook from which 1,300 feet of temporary water lines would be run and connected into the existing water mains. Ron Boivin also assisted the district with the installation of a pump and a temporary chlorination system to a private well that was donated by a local citizen. This well is currently being used to supply water to the town. The Governor of the State of Maine declared the affected area a disaster.

Total time spent on this project by Ronald Boivin was approximately 25 hours, with a savings of thousands of dollars to the water district.

Maine, Richmond - Maine RWA Circuit Rider 2, Mike MacDonald, worked with Richmond Utilities District (207-737-4721) to locate service stops and a possible water leak. Operator Tom Webster asked for help locating some curb stops they could not find and wanted to investigate what appeared to be a leak on a service that was getting into a basement.

Richmond Utilities provides water and wastewater services in this town of 3,500 population situated along the Kennebec River. The district supplies water to 525-metered connections from a gravel pack well. The water is metered and disinfected as it is pumped to two storage tanks on the opposite end of the town. Two full-time certified operators and a newly hired operator monitor the daily functions of both water and wastewater systems.

Mike spent three and a half hours locating valve boxes with his digital correlation equipment. Mike's effort proved that no leak existed at the service and also provided the crew with accurate locations for the valves, saving the district $6,000 - $7,000.

Maryland, Greensboro - Maryland Circuit Rider #1, Charlie Bowman, was requested to provide technical assistance by Town Manager, Dave Kibbler for the Town of Greensboro, Maryland (Caroline County). The town was losing approximately a million gallons of unaccounted for water per quarter.

Upon arrival on February 12, 2007, the Circuit Rider started a survey on the town's distribution system using correlation equipment. Working with town employees with knowledge of the system, we were able to complete only 8,000 feet of water main finding over 30 leaks. This was enough to alert the town of major problems with failing water mains. At this point the Circuit Rider met again with Town Manager Kibbler to report his findings and to help with a course of action.

Greensboro serves about 850-metered customers and has full-time treatment with disinfection and certified operations for their well system. Just identifying leaks will save the town about $3,000.00 but will also save much more in time and loss of water.

Maryland, Leonardtown – On Thursday, December 13, 2007 the Town of Leonardtown in Saint Mary's county requested technical assistance from the Maryland Rural Water Circuit Rider #2, Christopher McAfee. Jay Johnson, (301-475-9791) the superintendent, requested the help of the association. Jay needed training for the leak detection program he had started. The town had recently purchased equipment to find their own leaks. Chris McAfee arrived at the treatment

plant at 8:00 a.m. and worked on training Jay's staff until 11:45 a.m. for a total of three and three-quarter contact hours. They covered different techniques using the ground mikes to using extension rods. Chris made sure they were conducting a thorough survey making good contact points on valves and hydrants to meter pits. This type of training saved the town over $2,000.00.

Leonardtown has 800 connections with 500 new connections coming on line in the spring. They have three wells and use chlorine for full-time disinfection. They have three full-time certified operators in addition to Jay. The three wells and the 800 connections are metered.

Massachusetts, Russell – On October 3, 2007 the Russell Water Department contacted Mass Rural Water Association to ask for help with regards to fire hydrant repair and or replacement options. The hydrant in question has not been in operational condition for many years and has been on the replacement list for about the same time.

During Mass RWA Circuit Rider Dick Kilhart's six and one-half hours on-site visit he suggested that the system break down the hydrant and first attempt to rebuild it. After locating the tools required in the water system's own office, the hydrant was disassembled and a small Teflon washer was replaced. The hydrant is now in good working order and the cost savings would have amounted to $2,500.00 - $5,000.00 if the hydrant had to be completely replaced.

Russell Water Department is located in Hampden County, Massachusetts. The Water Commissioner, Lyle Maxwell, is the contact person for the system, which has 1,218 connections. The department's water source is ground water that is metered. All users are metered as well. They do not have a full-time operator nor do they have full-time disinfection. The system part-time operator is certified.

Massachusetts, Deerfield - On August 21, 24, and 27, 2007, Mass Rural Water Association Circuit Rider #2, Michael Leach, responded to a request from Superintendent Brian Nartowicz for assistance in dealing with a positive bacteria sample in the Deerfield Fire District.

Brian is the full-time, certified operator of this chlorinated, not fully metered, ground water system with 324 connections and can be reached at telephone number 413-773-3359. Detailed information was provided regarding chlorine dosing in order to maintain a residual in the system. An additional five hours was spent inspecting a tank that was the likely cause of the contamination. Circuit Rider Leach made recommendations on cleaning, chlorinating, and testing this source before returning to service to ensure a return to safe drinking water.

Michigan, White Pigeon - Circuit Rider Chuck Klies of the Michigan Rural Water Association visited the community of White Pigeon on April 11, 2007 and spent one-half hour with licensed water operator Earl Baldwin (269-483-7044) about any need they might have for used water meters. This ground water system, located in St. Joseph County, has about 605 connections and is metered at the source and the consumer.

During this visit the Circuit Rider noticed the brand and type of customer (residential) meter this system was using. Earlier in the month Chuck received a call from another community that is

replacing water meters of the same type with new radio read units. The water operator of White Pigeon expressed an interest in obtaining the used meters.

By getting the used body and register and purchasing new measuring chambers for $15.00 a piece (instead of $70.00 for a complete meter) this results in a savings of $55.00 per unit. Therefore, 300 units at a $55.00 savings per unit would save the system $16,500.

Michigan, North Muskegon - On July 9, 2007, Michigan Rural Water Association (MRWA) Circuit Rider II, Roy R. Anklam, arrived at 12:30 p.m. on-site in the City of North Muskegon in Muskegon County and met with, per his request, the water superintendent, Bruce Moore, phone number 231-744-1621, Public Water System Identification (PWSID) Number: MI0004780, to assist him with his compliance with the USEPA Stage 2 DBP's Rule.

The water supply serves 4,301 customers who are all metered and the system has 1,389 water connections. The water source is ground water purchased from the City of Muskegon. The source water and all users are metered and full-time operators that are certified by the State of Michigan Department of Environmental Quality man the North Muskegon Water Department. Full-time disinfection of the water takes place at the wholesaler, City of Muskegon.

MRWA Anklam assisted the water superintendent by first reviewing the system's Stage 1 DBP's sampling results, which showed that the system could not do a 40-30 certification for Stage 2 DBP's Rule. So MRWA Anklam assisted the water superintendent by supplying him with a Standard Monitoring Plan (SMP) and instructing the water superintendent step-by-step until the SMP was completed, including the required schematic of the water supply, with sampling sites chosen.

MRWA Anklam saved the community nearly $11,000.00, since that is what some of the engineering firms and counties are charging to complete a SMP. MRWA Anklam left the system at 3:45 p.m. after three and one quarter hours of on-site assistance.

Michigan, Capac - On June 14, 2007 Michigan Circuit Rider III, Ron Perry, arrived in the Village of Capac. CR III Perry had loaned the Village a metal detector that has the capabilities of erasing different types of metals when it is searching for one type of metal. The village over the years had a lot of valve boxes and service boxes buried and they needed to find them and according to the D.P.W. superintendent this machine did the trick finding about 90% of what they were looking for. Circuit Rider III Perry’s contact for this meeting was Candy Franckowiak, the Village clerk phone #810-395-4355 ext.11.

The Village of Capac is located in St. Clair County, Michigan and has a population of 1,775 with approximately 600 connections. Capac is a well system with full-time certified operators and at this point uses chlorination as its disinfection method. Its well's and user's are metered. Capac is about one-half of the way through a new arsenic removal plant and distribution update. The arsenic plant will use filtration and chlorination in its operation, and the USDA at $2.6 million provided funding. Savings to the system was approximately $700.00 in the cost of the machine, and CR III Perry provided assistance approximately four hours over a period of six months while the village had this machine.

Minnesota, Belgrade - The city of Belgrade is located in Stearns County, Minnesota. The city's water system is fairly old; it utilizes a metered ground water source with iron and manganese removal. The water system is chlorinated and serves 295-metered customers. Tony Olson who is a full-time certified operator operates the water system. Corrine Bahe is the city clerk and she can be reached by phone at 320-254-8220.

Mike Roers, Circuit Rider with Minnesota Rural Water Association, has worked with the city of Belgrade several times in the past. Mike was aware of the system's desire to upgrade their existing water filtration facility. The city council had requested a meeting with Mike and Jeff Dale, another MRWA Circuit Rider, to discuss the process of hiring an engineer for the project. Mike and Jeff met with the council on September 10, 2007, for two hours.

With over 50 years of combined experience between Mike and Jeff, they went through the process of finding out what the city council needed to know. Additionally, some of the city council members had never been to the existing water treatment facility. Mike explained how important a facility of this nature is to the City of Belgrade and how they should be familiar with the basic processes. Mike also gave the city some information on other facilities in the area for the council to look at. Currently, arsenic is an issue in one of the two city wells. Mike suggested that the city eliminate the well that is high in arsenic and drill one or two more wells in the aquifer with less than 2 ppb of arsenic.

This process can be started without a consultant and it would determine the amount of treatment in the new water plant that the city is considering. The council thanked Mike and Jeff for their honest opinions and looked forward to working with Minnesota Rural Water Association on this process in the future.

The long-term benefit to the City of Belgrade is that they will be familiar with the actual process and will be able to tell a consultant what they need to provide a quality product to their citizens. With the "A" (arsenic) word not having to be mentioned, the City of Belgrade should save $50,000 and get an affordable project.

Minnesota, Freeborn - The City of Freeborn is located in Freeborn County in southern Minnesota. The city has a population of 305 non-metered service connections. Bill Guggisberg is the full-time licensed water and wastewater operator. The water utility consists of two ground water wells with chlorine for disinfection.

This city, like many small rural communities, needs to update their aging infrastructure. Jeff Dale, Circuit Rider with the Minnesota Rural Water Association (MRWA), was asked to attend a council meeting on October 8, 2007 at 7:00 p.m. Jeff attended the council meeting for one hour. The city's engineering firm was also on-site to show the council some options for funding the water improvements. The city is looking at spending $1.5 million on distribution improvements.

The city's engineering firm suggested that the city not use Rural Development as a funding option. The reason that the engineering firm gave to the city was that the engineering firm felt that Rural Development's funding is too restrictive and time consuming. This firm evidently did not know the relationship between Minnesota Rural Water Association and USDA Rural

Development (RD). Jeff explained that Rural Development should be the first avenue researched by the city and their engineering firm. Jeff further explained that RD has full-time people to assist in their application process. He also pointed out that RD would be the primary agency to supply grants for the project. The engineering firm also suggested hiring a grant writer. Jeff disagreed with this at this time until RD options were looked at.

This contact is a very good example of why every small city that is entering into a project without the assistance of Minnesota Rural Water Association, can be led down a path not to the city's benefit, but to the engineering firm's benefit.

Mississippi, Shady Grove - In August of 2006, the Mississippi Rural Water Association Circuit Rider #1, Kirby Mayfield, received a request for technical assistance in performing a rate study for the Shady Grove Utility District. The Shady Grove Utility District is located in Jones County in south Mississippi. Shady Grove serves 830-metered connections. The water source is ground water, which is metered and is full-time disinfected with chlorine. The association has a full-time certified water operator. The call was received from the Operator, Mr. Chris Ainsworth. Mr. Ainsworth explained that the association had received a loan from Rural Development in the amount of $1,000,000.00. He went on to say that he had received a letter from Mr. Mark Hatcher, Loan Specialist for Rural Development, requesting that the association have a rate study performed.

On Wednesday, August 02, 2006, Mr. Mayfield arrived on-site at the system and met with Mrs. Ann Ainsworth, office manager for the district, and the operator, Chris Ainsworth. Using the information from the most recent audit, a rate study was completed. The current rates at Shady Grove was $6.00 for the first three thousand gallons of water and $3.50 per thousand for the next four thousand and $3.00 per thousand thereafter. The information obtained from the study showed that the system had annual revenue of $236,836.00. The total cash requirement for the association, including the new loan obligations, was $291,933.00. This was a shortage of $55,097.00. Mr. Mayfield explained the results of the rate study to Mr. Ainsworth and left him with several rate options for the board's consideration. Mr. Ainsworth had explained that the board wanted to keep the base rate as low as possible.

On a follow-up visit on Thursday, June 28, 2007, Mr. Mayfield met with the operator, Mr. Ainsworth. He informed Mr. Mayfield that Rural Development had approved the recommendation and that the board had voted to increase the rates as recommended. The new rates will be $7.00 for the first 3,000 gallons and $4.50 per thousand thereafter. The rate increase had already taken affect. These new rates will produce projected annual revenue of $336,042.00.

The Circuit Rider spent a total of three hours and forty-five minutes on-site time at the system and the benefits of these contacts will increase the revenue for the Shady Grove Utility District by a projected $99,206.00 annually. Mr. Ainsworth can be reached for comments at his office at 601.428.0311 or on his cell at 601.498.8928.

Mississippi, Oak Hill - The Oak Hill Water Association recently contacted Tom Abernathy, Northern Circuit Rider with the Mississippi Rural Water Association. During one of several visits to the system they express their concerns that many of their customers were experiencing

colored water. Every time anything happened on the system it would cause a rash of calls from all over the system with complaints of colored water. After determining what the problem was it was decided that the best thing for the system to do was pigg the lines.

Mr. Abernathy started developing a plan that would let them do this in steps. The first step was to start at the well site and work their way out until all of the lines were clear of all of the debris attached to the walls of the pipe. Mr. Abernathy scheduled a training session that would let other water systems come and see for themselves how this was done and what the process involved. They set a date and notified the customers that would be affected by this project. The day before they were going to insert the soft pigg they met and dug up the line where the pigging would begin and end.

On May 31, 2007 a group of about 45 people showed up for this demonstration. Using Mississippi Rural Water equipment they were able to monitor the water as it went into the line and by doing this they could predict where the pigg was located at all times and also tell when it should come out the other end of the pipe. This exercise went off as planned and everyone there was pleased with the results. It was unreal the amount of build-up that had accumulated in this line over the years of use. After running these piggs through the three and two-tenths miles of main line, the water was crystal clear when they were through.

The Oak Hill Water Association is located in Pontotoc County. Ricky Herndon is their part-time operator and currently serves about 1400-metered connections using chlorine as a disinfectant to their ground water source, which is metered also.

As a result of the 13.75 hours on-site by the Circuit Rider, the Oak Hill Water Association has made significant progress towards increasing their ability to provide an adequate supply of safe drinking water both now and in the future. They also understand the importance of doing more line pigging and how they can do this themselves as well as all of the other people that were there.

Mississippi, Forest - On Wednesday, October 24, 2007, the Mississippi Rural Water Association Circuit Rider #3, Randy Turnage, received a request for technical assistance in helping repair an altitude valve for the City of Forest. The City of Forest is located in the central part of the state. The city serves a total of 2,000-metered connections. The system is supplied by a ground water source, which is also metered. The City of Forest uses chlorination for full-time disinfection. The call was received from the full-time certified water operator, George Randall (601-469-2921). Mr. Randall explained that the altitude valve on one of his elevated tanks has not worked properly in years, causing the water to become stagnate. He went on to explain that he had contacted several companies about repairing the valve but had not found anyone that could. The city also considered replacing the malfunctioning valve.

The Circuit Rider arrived on-site at the system that same day and met with the operator. The Circuit Rider trained the operator on how to trouble shoot the valve to isolate the problem. After trouble shooting the valve, the problem was isolated and the operator and Circuit Rider took the valve apart to make the necessary repairs. After the repairs were made, the valve was placed

back into service. At this time the Circuit Rider showed the operator how to test the valve to see if it was working properly and how to set the valve to the required adjustment.

The Circuit Rider spent a total of seven and one-half on-site hours at the system and saved the City of Forest an estimated $11,000.00 in repair bills and water loss.

Missouri, Seligman - On June 19, 2007 the Circuit Rider with the Missouri Rural Water Association, Billy Everett, provided technical assistance to the City of Seligman. The Mayor of Seligman, Mr. Duane Corn, met with the Circuit Rider and asked for help with current well problems and future water shortage concerns. The Circuit Rider spent two days and a total of nine and one-half hours on this contact.

The City of Seligman is a small water system located in the southwest corner of the State in southern Barry County. The city has three deep wells that range from 1,700 to 2,150 feet deep and one abandoned well, two storage towers and approximately 600 full-time users. The city does not chlorinate their wells. At the present time the Mayor is the only certified operator that the city has.

The current issue that the city was dealing with was a well that had been problematic and had finally failed. As it was being serviced, one of the other two working wells had failed. The Circuit Rider was able to provide some electrical diagnostic work and found the problem and fixed the failure of the second well.

The second issue concerning the city was the long-term capability of the wells. The city asked the Circuit Rider to review all available information on the abandoned well and give an opinion of its viability. The Circuit Rider performed an evaluation of the information and also made some calls to the State Primacy Agency for information the State might have. The Circuit Rider then compiled the data and presented it to the Mayor for the consideration of the city. Further study will be needed, but it appears at this time the costs would be prohibitive for the amount of water the well yields according to the original pump tests. Further data collection is ongoing.

The City of Seligman expressed their appreciation for the Circuit Rider's assistance. The approximate savings to the system could be as much as $2,000.00 annually.

Missouri, Breckinridge - On May 22, 2007 Missouri Rural Water Association Circuit Rider, Joe Anstine, made a requested visit to the City of Breckinridge, Missouri. The City of Breckinridge is located in Caldwell County and has 201 system connections. This system has a surface water treatment plant that can produce 90 gallons per minute. The city utilizes chlorine as its full-time source of disinfection. The city may be contacted at (660) 644-5614. This number is to the water plant as the city does not employ a full-time person to open City Hall on a daily basis.

Mrs. Linda Bills, a Missouri State Certified Operator, and employed full-time, made contact with Missouri Rural Water Association Circuit Rider Anstine about concerns of high water loss within the system. Mr. Anstine used Missouri Rural Water Association's X-Mic leak detection equipment to do a leak survey of the system. Mr. Anstine found three fire hydrants leaking and

two service taps that were leaking. Mrs. Bills stated that the city would replace the fire hydrants and repair the service taps.

On August 18, 2007 Mrs. Bills contacted Mr. Anstine about the City of Breckinridge being unable to produce enough water to consistently keep the pressure above 30 psi in the system and believed the city was experiencing a leak to cause this problem. Mr. Anstine asked Mrs. Bills if the district they serve water to had recently had any leaks causing the city to lose pressure. Mrs. Bills stated that she would check and get back with Mr. Anstine.

On August 20th Mrs. Bills called and asked Mr. Anstine to come to the City of Breckinridge and provide assistance with finding a leak. Mrs. Bills stated that the leak was getting so bad that all pressure had been lost several times over the weekend and the system had been placed on a boil order by the Missouri Department of Natural Resources.

On August 21st Mr. Anstine arrived on-site at the City of Breckinridge. Mr. Anstine assisted by the city water treatment plant operator, Perry Addison, started listening to all fire hydrants and meters in the system. Mr. Anstine found two fire hydrants and one service line leaking. The city contracted with a local contractor to do the emergency repairs to the system. During the repairs of the leaks, Mrs. Bills stated that the leaks that had been found and repaired in May of 2007 had reduced the production of water by 17,500 gallons per day.

On August 22nd Mr. Anstine returned to finish listening to the system and to see if the repairs from the previous day had helped in the loss of water and pressure in the system.

Mr. Anstine contacted Mrs. Bills on August 24th to see if the water usage had dropped off since the repairs that had been made on the 21st. Mrs. Bills stated that the production rate at the plant had returned to normal and the system had regained pressure and was in the process of doing bacteriological samples so the system could be taken off the boil order list with the Missouri Department of Natural Resources.

The savings to this system in May of 2007 was an average of the 17,500 gallons of water per day at a cost of $3.50 per 1,000 gallons which saved the city approximately $1,837.50 per month in production cost. The savings to the system on the August leaks will save the city an average of 28,800 gallons of water per day at the cost of $3.50 per 1,000 gallons, which will save the City approximately $3,024.00 per month in production cost. Theses contacts lasted 18 hours in total.

Missouri, Stewartsville - Sam Clary, Certified Water Operator and Water Superintendent with the City of Stewartsville, contacted Missouri Rural Water Association Circuit Rider, Jim Balmer, requesting assistance with a Hydrant Flushing Plan. The Circuit Rider contacted Sam at City Hall, 816-669-3278, and scheduled a meeting.

The Circuit Rider was on-site May 17, 2007 at 2:00 p.m. to meet with Sam Clary and to review the city's distribution map. The Circuit Rider gave an overview of the flushing plan noting that gallons per minute and distribution line pressure could be recorded using equipment provided by Missouri Rural Water Association. Discussion was had regarding needed personnel and

scheduling was accomplished. The Circuit Rider was off-site at 3:15 p.m. for a total of one and one-quarter hours.

Stewartsville, located in DeKalb County, Missouri, purchases its water from a metered, disinfected, surface water supply and has 350-metered connections.

Circuit Rider Jim Balmer was on-site at 8:30 a.m., June 20, 2007 meeting with Sam Clary and his assistants. The Circuit Rider reviewed with the personnel that day pressure and flow measurements along with the hydrant condition that would be documented. Two of the thirty hydrants tested could not be opened; the location was recorded and servicing by the city was planned. With a hydrant flushing and maintenance program in place along with pressure checks on distribution lines, water quality and integrity of the city's water will be accomplished.

The Circuit Rider was off-site at 5:15 p.m. for a total of eight and one-quarter hours. The value of this service provided by the Missouri Rural Water Association to the City of Stewartsville is $820.00 with the possibility as high as $1,070.00.

Montana, Manhattan - The Town of Manhattan, Montana (406-284-3235) is located in Gallatin County and serves 475 connections that are not metered. The town's water system has a ground water supply with three wells that are not metered or chlorinated at this time. The town has three full-time certified water operators. The town clerk, Vicky Ellison, called the Montana Rural Water Circuit Rider, Harry Whalen, and requested assistance in establishing a new-metered water rate for their water system.

The Circuit Rider traveled to the Town of Manhattan on April 5, 2007 and met with the town's Mayor, Tony Haag; Clerk, Vicky Ellison; and the town's Public Works Director, Stewart Cooper, for three hours to discuss the installation of water meters in the town and setting a new metered water rate.

The meeting was continued until April 19, 2007 at which time the Circuit Rider met for over six hours with the Mayor, Clerk, Public Works Director and continued into the evening with the Town Council. During the evening part of the meeting the Circuit Rider was asked to assist the town with the public hearing on the new water rates, which will be held in late May of 2007.

The cost savings to the town is approximately $5,000, had outside engineer services been used.

Montana, Wibaux - The Town of Wibaux is located in Wibaux County in the northeastern part of Montana. The community has 240 connections and a population of 517 people. They have two metered ground water wells with full-time disinfection. The community is metered. They have two full-time certified operators. The Montana Rural Water Systems (MRWS) Circuit Rider, Nick V Clos, contacted the town clerk, Ginny Archdale - phone # 406 796-2412, in March concerning the Rural Development requirement to develop a VA/ERP.

On March 7, 2007 the Circuit Rider arrived in the Town of Wibaux and met with the clerk. For two hours the Circuit Rider went over the Security and Environmental Management System

program (SEMS). This program helps systems set up a reliable and effective Vulnerability Assessment and Emergency Response Plan (VA/ERP).

The MRWS Circuit Rider later arrived in Wibaux on April 4th and spent one and one-half hours going over the SEMS program and helped the clerk complete the VA/ERP. The VA/ERP are mandatory for systems with a USDA Rural Development loan, which the Town of Wibaux has. They are also required for applications for Homeland Security money through county EDS agents.

Savings to the Wibaux community is about $20,000.00 if Homeland Security Grants are achieved. The savings in system security is unknown.

Nebraska, Scribner - Jack Cordes, the full-time, certified operator for the City of Scribner contacted Randy Hellbusch, Nebraska Rural Water Association Circuit Rider, for assistance. The city was not meeting annual expenses of their water system with their current rates. The City of Scribner serves 430-metered connections. The system utilizes ground water wells, which are metered. The Scribner water system does disinfect.

Randy Hellbusch visited the Scribner water system on February 16, 2007 and spent six and one-half hours conducting a water rate study. A history of past expenses was used as well as projections of costs for the next three years. A close look was also taken at current users and projected water use. After all of the data was compiled the Circuit Rider met with the system board members for two and one-half hours on February 26th to help explain that a rate increase was indeed necessary to keep the water system in good financial shape as well as meet all of the regulatory requirements of the Safe Drinking Water Act. The City Council accepted his recommendations and increased water rates to the appropriate level.

The system will generate approximately $24,000.00 more revenue annually. This will help ensure that money will be available to deliver safe water to the residents of the City of Scribner. This is an example of how a Circuit Rider can assist a small system by working with the operator as well as decision makers to keep water systems viable into the future.

Nebraska, Douglas - The Village of Douglas is located in Otoe County, Nebraska and serves 60-metered service connections. The contact number is 402-799-2029. The system purchases all of their water from Otoe County RWD #3. The system is not chlorinated. The Village Clerk, Vicki Focken, contacted Russell Topp, the Nebraska Rural Water Association's Circuit Rider, to help the village find a water leak that would not surface.

The Circuit Rider met with the system's part-time Grade 4 Water Operator, Greg Boldt, several times in recent months trying to find this particular leak. The Circuit Rider spent three and one-quarter hours on April 9, 2007 and was finally able to identify where the leak was. The leak was repaired the following day. The Village of Douglas had been looking for this leak for several months.

The leak was costing the village approximately $2,600 every month in lost revenue. Total cost savings for the village on an annual basis is approximately $31,200. This is an excellent example

of how the equipment of the State Association and the knowledge of the Circuit Rider can save a small water system a considerable amount of money.

Nevada, McGill - The Nevada Rural Water Association Water Circuit Rider, Dan Tarnowski, rendered technical assistance to the McGill Water and Sewer District in the form of guidance in running a public hearing and water rate increase. The process started several weeks prior to the December 17, 2007 public hearing. Office Manager Ms. Vana Workman was vital in providing water usage data and liaison to the District Board of Directors.

With information provided from meter readings a database was developed that would show the public who would be affected by the proposed increase and at what cost. Proposed rates were published and informational flyers were sent to customers. Mr. Wayne Cameron, Board Chairman, was given all information and he in turn briefed his board prior to the public hearing. Mr. Tarnowski was at the meeting on behalf of the Board to answer technical questions and make a brief presentation. It was brought to the attendees' attention that the Board was obligated to protect the public's investment in the water system and an increase in operational funds was necessary to accomplish this.

The end result was a calm well-run public hearing, a unified Board, and an increase to the operational budget of $50,000 to $60,000 annually.

Nevada, Stagecoach - On October 16, 2007 Circuit Rider 2, John Allred of the Nevada Rural Water Association, made a follow-up visit at Stagecoach General Improvement District regarding a request for assistance to develop and write a water conservation plan for the district. This request came on October 10, 2007 from Mr. Marlon Cook. Mr. Cook is the system's manager and may be reached at (775) 721-4709.

Using a template developed by Nevada Rural Water and adapting it to the Stagecoach GID, Mr. Allred assisted Mr. Cook in the completion of a draft, which will be presented to the Stagecoach GID Board for approval.

Stagecoach is located in Lyon County on Highway 50. The GID has 412 connections, which are metered. The water system has two ground water wells, which are also metered. Both wells use sodium hypochlorite for full-time disinfection. Marlon Cook is a certified operator. Joe Seng is a new operator for the GID who is also a certified operator. The phone number for Stagecoach General Improvement District is: (775) 629-0849.

On-site time spent on this visit was four and one-half hours. Savings to the GID in terms of consultation and engineering fees would be about $400.

Hew Hampshire, Rollingsford - On September 18, 2007 Granite State Rural Water Circuit Rider Jay Matuszewski responded to a request for assistance from Jack Hladick the full-time Certified Operator for the Rollingsford Water Department. Rollingsford is located in Strafford County and serves 450-metered connections with a metered ground water supply that has full-time disinfection. Rollingsford is having some issues with its current supply in that near the end of the pump runs the water turns milky white; this could be caused by numerous different things.

The operator also mentioned that the water chemistry also changes at the end of the pump runs. After reviewing the water analysis and other recorded data the Circuit Rider decided to conduct well draw down tests with the operator.

The Circuit Rider spent five and one-quarter hours with this system conducting the tests and reviewing data. After the conclusion of the drawdown test it appears that the wells are being over pumped if they run five hours or more at a constant rate. The Circuit Rider recommended to the Operator that he change the timing of the pump runs to two hours on and two hours off. By doing this simple change the wells would have time to recover in between pump runs and not be at risk of pulling in air causing the milky water. It could also eliminate the problem of the water chemistry change by keeping a stable pumping level.

The initial savings to the system is about $5,000.00 in consulting fees; if the recommendations work there is potential savings of over $300,000 in the cost of a new source. The Circuit Rider will do a follow-up visit with the Operator to check on the results of these suggestions. The Operator can be reached at 1-603-742-8124.

New Hampshire, Plymouth Village - On April 10, 2007 Granite State Rural Water Association Circuit Rider #2 Scott Clang responded to a request from the full-time system Administrator, Carol Kennison – 603-536-1733, to review procedures to satisfy recommendations from an earlier letter of deficiency (LOD) report sent by the NH Department of Environmental Services Water Supply and Engineering Bureau to address total coliform bacteria monitoring programs, distribution flushing and monitoring and overall water quality of the drinking water at the Plymouth Village Water District.

Plymouth is located in Grafton County and is the home of Plymouth State College. Plymouth is the hub of many surrounding smaller mountainous rural communities that rely on the towns larger businesses and resources. Plymouth's history goes back to the Northern New Hampshire logging industries and many of the existing buildings and mill complexes still standing are home to the hospitality and service industry. Plymouth Water District serves its 985-metered customers via two-metered 350 gallon per minute gravel packed wells located along the Pemmigewassett River watershed. It treats for corrosion control with soda ash to comply with the Lead and Copper Rule and disinfects its drinking water with a chlorine tablet feeder injection control system. Its distribution system is made up of two interconnected main systems; a low pressure side of the system that is serviced by a newer two million gallon concrete prestressed storage tank and the high pressure side which is serviced by an older 300,000 gallon concrete storage tank. Higher elevations along the system are served by poor pressure and older substandard tuberculated water lines. This latter tank is scheduled to be replaced in the next two years.

Hydraulic limitations have reduced the operational parameters of this system. The two million gallon tank's operating water level is limited to the top two feet of a total of 28 feet total water storage to provide distribution pressure and boosted water flow to the 300,000-gallon tank. These future upgrades will enhance both the pressure and turn over of the tank thereby increasing water pressure and quality. Along with distribution system upgrades the district is nearing completion of a second water supply source located within the Baker River watershed, which is of higher

water quality and will enable the system redundancy in providing reliable water service under most all conditions.

The Circuit Rider provided many other hours of technical assistance throughout this project and assisted in satisfying requirements of the LOD to include a bacteria monitoring program, chlorination program and most recently improvements to the department' hydrant flushing programs. The Circuit Rider provided three hours of instruction and assistance in follow-up meetings for the month of April. Overall, cost savings to the system for this project averages about $7,500 to $10,000 in consultant and or engineering costs. By being able to assess and have ready much information of the system; any or all research by engineering can be limited saving the system many more dollars in engineering fees. The Circuit Rider has committed more time to assist the full-time certified operator, Bruce Tucker – 603-523-2769, in the month of May 2007 during their hydrant flushing program changes. Field help will allow the operators to complete the flushing program on time and implement changes as required with on-site technical assistance during actual flushing operations.

New Jersey, Brooklawn - On Monday, April 30, 2007 Dave Barclow, Head of Public Works for Brooklawn, New Jersey, contacted Eric Denslow, Circuit Rider #1 for New Jersey Water Association, about getting some help with leak detection. He had recently found a leak in the water system that was flowing into a nearby storm drain but could not figure out exactly where the leak was coming from.

Brooklawn, New Jersey is located in Camden County. Brooklawn was incorporated as a borough on March 11, 1924 from portions of the now-defunct Centre Township, based on the results of a referendum held on April 5, 1924. The borough was reincorporated on March 23, 1926. As of the United States 2000 Census, the borough population was 2,354, with 900 water connections. It is a ground water system that is fully metered with a part-time certified operator.

On Tuesday May 1, 2007 Eric met with Dave to assist in finding the location of the leak. Using the Ground Penetrating Radar, to locate the water main, and the LD-10 Subsurface Leak Detector Eric was able to find the leak so Dave and his crew could dig it up and repair it.

In conclusion Dave was very appreciative of the services provided by Eric Denslow and the New Jersey Water Association. By utilizing this free service Brooklawn was able to save roughly $1,500 in the cost of the leak and the cost of paying an outside contractor to come in and assist in finding the leak. Dave Barclow can be contacted at 856-456-0750.

New Jersey, Manasquan Boro - During the New Jersey State Annual Conference on September 19, 2007 held in Atlantic City New Jersey, NJWA Circuit Rider #2 Lester Mattison was approached by Tom Nicastro, CPWM, Manasquan Boro, Monmouth County, New Jersey, 732-223-0369.

CR2 Mattison had previously assisted Mr. Nicastro with obtaining contacts for consulting engineering firms regarding the Boro's plan to construct a new water treatment facility. Mr. Nicastro asked CR2 Mattison if he knew of any alternative funding avenues for this project, which has a projected budget of $7 to $9 million. CR2 Mattison told Mr. Nicastro of the

programs available through USDA Rural Development and that in fact Mrs. Victoria Fekete, Business and Community Programs Specialist from RDA, was in attendance at the conference. Later CR2 Mattison introduced Mr. Nicastro to Mrs. Fekete. During the meeting, Mrs. Fekete gave Mr. Nicastro a rundown of the programs that could be available to the Boro as well as informing him of the grant program which could possibly provide up to 75% depending on the population data that would be provided during the application process. Mr. Nicastro and Mrs. Fekete will make an appointment to meet and discuss the project at the USDA Rural Development offices Mt Laurel, New Jersey.

New Mexico, Lumberton - The small community of Lumberton is located in Rio Arriba County in northern New Mexico. Lumberton Mutual Domestic Water Association has 54 connections and is all metered. They have full-time disinfection. The water for Lumberton comes from a river and the plant is metered. Mike Vantage is the certified water operator.

On May 29, 2007 the President of the water association called Lupe Aragon, Circuit Rider for New Mexico Rural Water Association, as Lumberton was out of water. Lupe arrived at the association on the same day and started working with Joey Valdez, one of the board members. The men worked up to 8:00 p.m. that night trying to get water in the tank.

On May 30th when there was 10 feet of water in the tank the men started doing leak detection but could not find the leak. On the 31st of May the men pressurized the system and found the leak. They worked on the leak and had it repaired about 7:00 p.m. The next day the Association's customers all had water.

On this contact the Community saved approximately $10,000.00. The contact phone number is 505-220-5429.

New Mexico, Penasco - On September 6, 2007 Daniel Lee Valdez, Circuit Rider for New Mexico Rural Water Association, was asked by Pete Pacheco, operator for Penasco MDWCA, to help him and Lupe Aragon from New Mexico RWA to find the pressure problems they have been having with the system.

Penasco, New Mexico is located in Taos County and has ground water wells for its source that feeds 171 connections and has full-time disinfection.

We started by checking pressures throughout the system and then went to the prv's and started cleaning, testing, and replacing gauges. We found two of the eight not to be in working order. These two were fixed and then we adjusted all of the prv's. We also located some valves that the system could not find.

Mr. Pacheco has a level 2 certification in water and can be reached at 505-587-2570. We saved the system about $700 as if a contractor would have performed the work.

New York, Hancock - On December 7, 2007 New York Rural Water Association's Circuit Rider, Richard Winters, went to the Delaware County Village of Hancock in response to a request of the village's DPW Superintendent Andy Falsetta. Mr. Falsetta was looking for information on a grant to purchase new radio read meters for the village's water system. The village has a ground water source consisting of two wells that are metered and serves a total of 473 water connections that are also metered. The water is treated full-time with chlorine for disinfection purposes and the village also has a full-time, certified, water treatment operator. They can be reached at (607) 637-5341.

The Circuit Rider told Mr. Falsetta about a grant the village would be eligible to try for from the New York State Archives. He and Mr. Falsetta then went to the village Clerk's Office to use her computer to go online and download a copy of the application. The Circuit Rider explained to Mr. Falsetta that if they were chosen to receive the competitive grant that they could get up to $75,000.00 toward their meter replacement effort. They then proceeded to look over the application and decided to make a call to a representative of the Archives for his advise on how to make their application more likely to be chosen.

During the course of all this, some how a conversation came up about the well house and how it had been under water during a recent flood. Some of the control system for the wells had to be replaced and now one of the pumps that was not designed to be under water was showing signs of impending failure. Although this was not what Mr. Falsetta had asked the Circuit Rider to help him with on this visit, the Circuit Rider started to ask for more information about the flood and thought about a completely different way to help the village. The Circuit Rider asked Mr. Falsetta if he would be interested in looking into a grant from the USDA Rural Development that would enable the village to possibly replace the entire building and wells pumps, as well as, raise it above the flood plain. The Circuit Rider told Mr. Falsetta about an emergency grant the USDA had that he felt the village would qualify for. The Circuit Rider then called the State Director of the USDA, Dave Miller, to run the idea past him. When he finished explaining some of the details to the director, he was told that they should proceed with filling out the application for the project. Mr. Miller explained to them that they could be eligible for up to $500,000.00 in emergency grant funds. This would most likely be more than enough to fund the entire project.

At the end of the four hour visit, not only had the Circuit Rider been able to give the Village a possible source for funding for their meter replacement, but might have given them a solution to a much bigger problem that they had no idea they were even eligible for.

New York, Clayville - The New York Circuit Rider II, Douglas R. Smorol, received a call for assistance from Harold Brown, Certified Water Operator from the Village of Clayville (315-839-6222) at 3:15 AM on February 14, 2007.

Mr. Brown had received a low-level alarm at 11:30 p.m. on February 13th indicating he was rapidly losing water from his storage tank. By the time Mr. Brown could respond he had lost over four feet of water from the tank. After quickly surveying the system Mr. Brown was unable to locate the water loss and decided to contact the Circuit Rider. The Circuit Rider instructed Mr. Brown to isolate his storage tanks from the system to conserve any water still within the tanks. The Circuit Rider arrived on-site at 4:30 a.m. at which time Mr. Brown informed him that he was

unsuccessful in isolating the storage tanks. The Circuit Rider advised Mr. Brown to declare an emergency and begin public notification procedures. The New York State Department of Health was contacted. The New York State Department of Health issued a boil-water order and Mr. Brown proceeded to call the local TV, radio, and newspaper. The Circuit Rider and Mr. Brown then began to locate and close line valves in an attempt to isolate the broken line from the source. This work was hampered by a raging snowstorm that dumped 27 inches of snow and was accompanied by high winds and single digit temperatures. Day one ended at 7:15 p.m. with water service/pressure still not restored to the system.

The Circuit Rider returned on February 15th and after several hours was able to assist Mr. Brown in re-routing water to the storage tank. By 4:30 p.m. on February 15th the Circuit Rider and Mr. Brown were successful in restoring water service to 95 percent of the Village of Clayville customers. The broken main was located in a creek crossing on February 16th and repaired on February 19th. The New York State Department of Health removed the boil-water order after successful bacteriological testing on February 22nd.

The Village of Clayville is located in Oneida County in the Mohawk Valley Region of Upstate New York. The system serves a population of 500 through 167-metered service connections. The system has a ground water source and full-time disinfection.

The Circuit Rider was on-site a total of 14.75 hours. The assistance provided by the Circuit Rider to the Village of Clayville represents an estimated savings of $20,000.00 based on what the cost would be to hire a private consultant to provide the same services.

New York, Seneca Nation of Indians - On May 23, 2007, Circuit Rider Dan Tousley of New York Rural Water Association responded to a request for assistance from Michele Keyes, Disaster Preparedness Coordinator (phone number 716-532-4900 x 5024) for The Seneca Nation of Indians, located in southern Erie County in Western New York State. The Seneca Nation of Indians purchases full-time treated water metered to them from the Erie County Water Authority. No post treatment is required. Superintendent Dale Sherman and full-time licensed water operator Doug Seneca maintain the distribution system supplying water to 2,728-metered service connections.

The Seneca Nation of Indians had completed their HAZNY with surrounding counties in December of 2006 and had been awarded a Pre-Disaster Mitigation Plan through FEMA. Michele and her staff were working on Phase II-Risk and Vulnerability Assessments. They had no direction and were at a loss as to how to continue. She contacted the Circuit Rider and requested any assistance he could provide to them to get the program moving again.

The Circuit Rider met with Michele in her office and introduced her to the SEMS Vulnerability Assessment/Emergency Response Plan that New York Rural Water Association had been using in water systems across the state. He downloaded the program on Michele's computer and instructed her on its use, completion, and updating. Michele was very pleased with the program and felt it was exactly what she and her department needed.

Two hours were invested assisting the Seneca Nation of Indians with this project.

North Carolina, Autryville - The Town of Autryville, 910-525-4567, is located just east of Fayetteville, North Carolina in Sampson County. The town has 192-metered customers who receive their drinking water from the county through master meters. The county provides full-time disinfection of the water for the town. The town contracts with a certified water operator to oversee their operations.

On June 4, 2007, North Carolina Rural Water Circuit Rider, Nelson Brinkman had called on the town clerk, Diane Autry. During his visit he was made aware of the difficult financial situation that the town was in due to inadequate water rates. He was asked to look over their proposed budget for 2007/08 and do a rate study. In discussion with the town clerk and studying last year's budget, the Circuit Rider noted that the town clerk had to cash in a certificate of deposit in order to use nearly $9,000.00 to balance the water department's expenditures.

On June 27th the Circuit Rider provided an analysis of the town's financial needs and offered several water rate options for the town board to consider. These options, if approved, would provide the needed revenues to meet the administrative and operation budget in the water department for next year without borrowing monies from the general fund.

Savings to the town will be approximately $10,000.00 for the next fiscal year, if the board adopts the water rates proposed by the Circuit Rider. This was ascertained by showing in the analysis how much of a shortfall the current water rate revenue will bring in when considering the expenditures for next year's water budget.

North Carolina, Nashville - On March 5, 2007, Circuit Rider Dean Byrd, with the North Carolina Rural Water Association (NCRWA) arrived at the Town of Nashville, (252-459-3962), for an on-site visit. Mr. Byrd met with Mr. Larry Williams, Public Works Director and full-time certified distribution operator, and Mr. Jamey Baines, Director of Public Utilities and full-time certified water treatment operator. Mr. Baines stated that they were having difficulty with their Initial Distribution System Evaluation (IDSE), which is due by April 2007. Mr. Byrd informed him that each individual system is required to have an IDSE, which is mandated by the Stage 2 Disinfection By-Product Rule under the Safe Drinking Water Act.

The Town of Nashville is located in Nash County and serves 1,725-metered connections. The town operates five wells but purchases over eighty percent of their water, which is surface, from the City of Rocky Mount, which is metered and disinfected by the use of chloramines. Mr. Baines stated that they had contacted Nash County and inquired how they were following through with their IDSE and were told that they have contracted with their engineering firm to assist them. Mr. Baines, who uses the same firm, then asked what the cost for this service was and was told a price of $17,000. Mr. Baines asked Mr. Byrd if there was any way that they might be able to get it done for less. Mr. Byrd assured Mr. Baines that they could do it in house and offered to provide assistance. With the help of Mr. Baines, Mr. Byrd completed their monitoring plan.

As the result of a three hour and fifteen minute on-site visit the Town of Nashville saved $17,000.

North Carolina, Sparta - On Friday, February 2, 2007 North Carolina Rural Water Association Circuit Rider #3, Mike Hill, arrived in the Town of Sparta (336-372-4257) to revise their rates. The Town of Sparta, which is located in Alleghany County, operates a ground water system and their main disinfection is by chlorine, which is supplied in a sufficient amount to maintain residuals throughout their system. They have 1,269-metered connections and have a certified operator to oversee their system. All wells are metered.

Mr. Hill met with Bryan Edwards, Town Manager and Peggy Choate, Town Clerk. They had requested technical assistance from Mr. Hill in preparing a rate structure that will show the various examples so that it could be presented to their Board, who are unsure of the impact the increases may present. Sparta is also looking into building a Mico-Filtration Plant along the New River in partnership with Independence, Virginia. Mr. Hill presented Mrs. Choate with a detail report showing the current consumption and the revenues generated from it, along with their current structure. Mr. Hill then presented several different examples of rates that would generate the necessary funds to make the system financially sound now and into the future. After the presentation Mr. Hill then provided Mrs. Choate with the computer program and instructions on its use so she may be able to try different scenarios. Mike Hill said they could generate $120,000.00 more in revenue by going to a user fee and going up on their flat rate per thousands by one dollar.

As a result of a six hour on-site visit Mr. Hill saved the system approximately $2,000 in fees if completed by an outside source. Also if the system implements a variation of the rate examples it could result in a $120,000.00 increase in yearly revenues.

North Dakota, LaMoure - The City of LaMoure is located in LaMoure County in Southeastern North Dakota. The city has a population of 944 with 549-metered connections. LaMoure's current ground water source exceeds the MCL for arsenic. They will be receiving water from the City of Lisbon via the Southeast Water District in the near future. This ground water supply will be metered, treated with gas chlorine for full-time disinfection and lime softened.

Del Kindelsire, the full-time certified operator, asked about pigging the older section of LaMoure before they are hooked up to the new water supply and about cleaning up the arsenic in their water mains.

On October 18, 2007, North Dakota RWSA Circuit Riders Tom Sieg and Mike Ritteman arrived in LaMoure. Del had located and worked the gate valves before the start of the project. Circuit Riders marked on their system map fire hydrants that hadn't been touched. After about three hours working with the hydrants, pigs were sent in and the north half of LaMoure cleaned up very nicely. The next morning there were about 30 blocks to be pigged. This was the lower section of the city. The tower provided good pressure and that section was cleaned up without any problems. Hydrants were put back into service and the Circuit Riders discussed some directional flushing Del should do after the system is hooked onto Lisbon's water supply.

Circuit Riders spent 16 hours pigging in LaMoure and a few more hours working on the system map before the project. Savings to the community could be as much as $5,000 plus a good chunk

of the iron, manganese and arsenic that was removed from the water mains. This system can be reached at 701-883-5957.

North Dakota, Selfridge - The City of Selfridge is located in Sioux County, North Dakota. The City has a population of 223 with 80-metered connections. The system is supplied with metered ground water and they use liquid chlorine for full-time disinfection and poly phosphates for iron sequestering.

On November 12, 2007, the North Dakota Rural Water Systems Association Circuit Rider, Les Sigette, received a call from Janice Schneider, a member of the Selfridge city council. She stated that they were looking for help in finding several curb stop valves that needed to be shut off because of overdue accounts. She also stated that an evaluation needed to be done on piping and valves in their well house.

On November 19, 2007, the NDRWSA Circuit Rider arrived in Selfridge. He met with Selfridge Mayor, Marvin Strobel. Marvin has been taking care of the water system because the city has no certified operator. The Circuit Rider used locating equipment to find several curb valves around the city. The city has had trouble collecting money for service for a long time on some of these accounts and they decided to turn them off. One of these services will be dug up and physically disconnected from the water main.

Following the location of the curb valves Marvin and the Circuit Rider went to the well house. Marvin explained the water flow to the Circuit Rider. The system has two wells that enter the building and then combine into a single pipe for chemical injection and metering before going out to distribution. The cast iron pipe was in very bad condition and had water seeping out of it where the chemicals were injected. The Circuit Rider suggested that the system convert the old pipe in this area to pvc pipe. It should be easier and cheaper to install the pvc.

The Circuit Rider spent three and one-quarter hours on-site in Selfridge. The system can be reached at 701-422-3396.

Ohio, Wakeman - On February 6, 2007, Trisha Summers contacted H. Jay Koralewski, Circuit Rider 1 (CR1) with Ohio Rural Water Association (ORWA), seeking assistance in locating a large water leak in their water system. Ms. Summers is the billing clerk for the Village of Wakeman, which is located in Huron County in northern Ohio. The population of Wakeman is approximately 950 people with 375 water service connections. The phone number for the village is 440-839-2622. The source of water for the Village of Wakeman is purchased surface water from a neighboring water system. The supplying water system utilizes continuous disinfection with chlorine and the Village of Wakeman does not add any additional chlorine in its system. The purchased water is metered through a master meter and all of the village's consumers are also metered.

When the master meter was recently read, it was noted that the usage for the village had increased by approximately 45 - 50%, from an average usage of 80,000 gallons per day up to about 150,000 gallons per day. After trying to locate a water leak over several days, the village decided to contact ORWA for assistance.

On February 8, 2007, the CR1 visited with Mr. John Fowler of the Village of Wakeman. Mr. Fowler is the full-time operator of the water distribution system and is not currently certified. A technical consultant is utilized as the person in responsible charge of the water system. Mr. Fowler is the only full-time employee in the village's utility department. The CR1 and Mr. Fowler inspected some areas where it was likely that a leak may be and had discovered a storm sewer line running at a greater than anticipated flow rate. The water tested and appeared to be treated water, so the area was inspected in greater detail. Using ORWA's leak locating device, it was determined that the leak was in the street at an intersection. A contractor was called in and began digging, but due to deteriorating weather conditions and it being late in the day, the contractor came back the following morning and fixed the leak.

The CR1 spent approximately six and one-half hours on-site with Mr. Fowler in locating the leak and assisting with the initial leak repairs. By discovering this leak, the Village of Wakeman was able to realize a savings of approximately $165.00 per day or $5,000.00 per month for each day or month that the leak was not located and repaired. Mr. Fowler and the Village of Wakeman were grateful for the assistance of Ohio Rural Water Association in performing the leak detection services.

Ohio, New Vienna - This contact took place in the State of Ohio, in the County of Clinton for the Village of New Vienna on Wednesday, September 5, 2007 with a follow-up visit on September 6th to check everything out. The contact lasted a total of 10.5 hours for the two days.

New Vienna has 550-metered connections. Their water sources are wells that are metered, but they can only produce half the water the town needs. They have another metered connection to Highland County Water who supplies the rest. They have a part-time contracted worker who is working to get certified and several of the board members help with the system. New Vienna does have full-time disinfection. Steve Valentine, several board members, and the Representative Congressman contact Ohio Rural Water about a very large water loss that the town was having. Aaron Reinhart, Ohio RWA CR2, and Jay Koralewski, Ohio RWA CR1, went to the town to provide assistance to the system. The system was using approximately 300,000 gallons a day, when the average usage was around 130,000 gallons a day. The weekend before Aaron and Jay showed up they had found three leaks on their own and had gotten them fixed. New Vienna had gotten their water usage back down to 150,000 gallons a day. Aaron and Jay decided that they would just check a few of the problem areas around town. They ended up finding three more leaks. One very small one, a larger one, and finally a very big one that they estimated was loosing around 50,000 gallons a day. New Vienna fixed the very large one and was working on getting the other two fixed last time Aaron talked to them. The system’s water usage had dropped to an all time low and the system pressure was at an all time high.

Aaron and Jay plan on going back to New Vienna in October and finish looking for leaks on the rest of the system. Total cost savings to the system for the leak detection would be around $1,500.00 and cost savings for the lost water would range around $650.00 a day not including electric and wear and tear on the equipment; therefore, the total cost savings for the month would be approximately $21,000.

Oklahoma, Minco - Richard DeShazo, Circuit Rider #1 for the Oklahoma Rural Water Association, responded to a request from the Mayor of Minco, Oklahoma on July 19, 2007, Mrs. Kelly Rupp, for technical assistance. The membranes in the R.O. treatment plant had scaled over shutting the treatment plant down. The town was forced to replace the membranes at a cost of $58,000.00. Mayor Rupp wanted Mr. DeShazo to work with the plant operator, Tim Anderson, to help determine the possible cause of the plant failure.

On July 24th, Mr. DeShazo and Mr. Anderson, along with Jon Blickenstaff from Sequoyah Engineering, checked the KDF filters and found them to be in good condition. The clear well was the next point of inspection; a considerable amount of sediment was detected in the clear well. Mr. DeShazo and Mr. Anderson drained the clear well and found around eight-inches of sediment in the sump. This sediment was being picked up by the pumps and pumped into the pre-filters on the R.O. unit fouling the pre-filters every 24 hours at a cost of $240.00 a day. All parties involved felt that the excessive sediment would have caused the scaling of the membranes.

Minco is in Grady County and has 659 meters. Their water source is well water and they use chlorine gas for disinfection. Savings to the system was $240.00 per day and potentially $58,000.00 for another set of membrane filters. Contact phone number is (405) 352-4274.

Oklahoma, Lincoln County (Agra) - On April 9, 2007 Terry Ingham, Water Circuit Rider with the Oklahoma Rural Water Association, did a follow-up contact at Lincoln County RWD #4, which is located in Lincoln County and has 958 connections. The office is located in Agra, Oklahoma (918/375-2625). The system has wells and also purchases water from the Town of Chandler and Lone Chimney Water Association. All water is metered, connections are metered and full-time disinfection is in place from all water sources. The manager and two full-time employees are certified. Mr. Ingham is working closely with this system as the manager and operators are new employees. The contact person was the distribution manager, Clinton Pruitt.

Mr. Pruitt's concern was that of the three tanks in the distribution, the high water level at one tank was 30 feet lower than the other two. Mr. Pruitt shut the one tank off because it ran over all the time. Mr. Ingham looked at the map to see if the system could be made into two separate systems to utilize the short tank. It could not. Mr. Ingham advised Mr. Pruitt to contact an engineer to see if a 30-foot addition could be added to the tank. If the system can add to the tank, this would save them from constructing a new tank at a cost of $160,000.

The total on-site time was forty-five minutes.

Oklahoma, Elm Bend - On October 22, 2007, Mr. Terry Wickham contacted Bob Hughes, Circuit Rider of Oklahoma Rural Water Association concerning problems with a pumping station and a standpipe. The system is Elm Bend Rural Water District, located in Nowata County. The district purchases water from the City of Nowata where all water is metered at the point of entry; also water is metered at all 380 connections. Nowata uses full-time chlorination and the district has a booster chlorination station. The office phone number (918) 273-1279.

Mr. Hughes visited the system on October 24th and after assessing the problem found that a line was plugged on the altitude valve at the tank; thus, keeping the valve in the closed position causing all water to bypass the tank. This situation caused the pumps to cycle off and on every few minutes. This was not good for the extended life of the motors and pumps but more importantly was the condition being caused by the water not being circulated through the tower. This could result in a serious health hazard by water staying in the tower for a prolonged period of time, possibly months. Resulting in water that could contaminate the entire system if the tower should release the water at a later date.

This is a situation concerning public health that a dollar figure cannot be placed on. Approximately three hours were spent on this contact.

Oregon, Lady Creek - On July 19, 2007 the Oregon Association of Water Utilities' Circuit Rider, Jeff Swanson, made a requested on-site technical assistance visit to the Lady Creek Water System (503-254-8150). Lady Creek is located in Clackamas County. Mark Wever is the operator for the system but at this time is not certified. The system obtains its water from a metered ground water source and provides full-time, disinfected water to 450-unmetered service connections. Mark asked Jeff to meet with a pump technician on the 19th.

The system had an ongoing issue with the wells being pumped dry unless the valves were turned down to a significant setting. Jeff suggested that by placing a level transmitting device and flow meters, the operator would be able to optimize the output of the existing wells. A quote was given to rehabilitate the wells at a much larger cost. The Circuit Rider mentioned that for the estimated cost of $36,000.00 for rehab, there was only a 50% chance that any significant yield could be attained. He did mention that in the process of placing the level indicators that it might be wise to camera at least one of the wells to see if rehabilitation would be feasible. The pump technician also mentioned that a single and larger production well could be another answer. The cost of such a project could be well over $45,000.00 and not guarantee a much larger well yield.

At this time, the Circuit Rider believes that for an estimated cost of $7,000.00 for the level and flow metering equipment, the amount of water available to the system could be plenty. Considering that there will be no more future impact to the water system, the existing water yield should be sufficient. He also noticed that the storage capacity was about half the needed storage during peak demand. Optimizing the current yields would also enhance the extra storage capacity.

The Circuit Rider spent a total of about 15 hours and with consultation has saved the system about $3,000.00. Should the recommended optimization of the system be made, the system could save another $35,000.00 by not having to perform potentially ineffective rehabilitation.

Oregon, Falls City - On February 6, 2007, Scott Berry, a Circuit Rider for the Oregon Association of Water Utilities, responded to a request for contact by Don Poe, the Operator for the Falls City Water System. Mr. Poe is a certified Operator in charge of a water treatment and distribution system that provides water to a population of 970 through 400-metered connections. The Circuit Rider was requested to assist the utility in compiling data for an Emergency

Response Plan in preparation for an upcoming Sanitary Survey to be conducted by the Polk County Sanitarian.

The Circuit Rider assisted in completing the ERP as well as conducting a pre-survey of the system infrastructure. The Circuit Rider detected some small problems in the system that were not critical for the efficient and safe operation of the utility and assisted in correcting those that could be done right away.

The Circuit Rider spent several hours on-site over four separate visits to the water system and provided the utility with services worth approximately $3,200.00.

Oregon, Clark Branch - On June 15, 2007 Clark Branch Water Association requested assistance from a Circuit Rider to evaluate their filter. Darrel Lockard, Circuit Rider for Oregon Association of Water Utilities, met with the Association President, Chris Bingham, and Ed Kenny, full-time, certified Operator concerning their filter. The system is located in Douglas County, Oregon and has 80-nonmetered connections and the raw water source is a local river and that is not metered. The system is disinfected full-time.

Chris and Ed wanted to troubleshoot their water treatment filter. They were under the impression that they had to remove all the media and replace it. The Circuit Rider sampled the media and determined the filter media did not require replacing, although other maintenance and pumps are required to provide proper operation of the filter. The Circuit Rider discussed chlorine detention time and log removal requirements to inform the Operator and President of State regulations.

Circuit Rider Lockard was on-site approximately six hours and saved the system $15,000 - $20,000 in repairs and consultant fees.

Pennsylvania, Claysville - Glenn Cowles, Circuit Rider 1 from Pennsylvania Rural Water, was contacted by Jay Hickman, the Water Superintendent and certified, full-time water operator, from the Claysville Donegal Joint Municipal Authority in Claysville, Pennsylvania located in Washington County (724-663-7770), (Public Water System ID #5630040) because of a high unaccounted for water loss that they were unable to locate. The water system was producing the maximum amount of water the filtration plant was capable of and not able to keep their storage tank full. Claysville Donegal has 594 water connections, serving a population of 1,600 people, where both the source and users are metered with full-time disinfection. Their water system is classified as a surface water source obtaining it from the School Street Reservoir in the borough and providing filtration at their School Street Water Plant.

Glenn spent a total of 14 hours on-site on May 15, 16, and 17, 2007 helping Jay locate a leak using a meter at the water filtration plant, a listening device and correlator. This leak was found on a three-inch cast iron line serving a Pennsylvania Highway Welcome Center on Interstate 70. It was leaking an estimated 86,400 gallons per day. Total savings to the system was estimated to be $126,144.00 annually based on a $4.00 per thousand-gallon purchase price.

Pennsylvania, Tunkhannock - Tunkhannock Boro Municipal Authority is located in Wyoming County, Pennsylvania along the Susquehanna River and Route 6. Tunkhannock has a metered ground water source with full-time disinfection as well as 976-metered customers.

On January 30, 2007 Rural Water Association Circuit Rider, Chris Shutt, met with the general manager and certified operator, Rodger Hadzel, and his full-time certified operators. This meeting was for the purpose of leak detection assistance. It was found that the system was losing 100,000 gallons of treated water a day, above and beyond the normal usage of the system. Rodger and his crew were able to isolate the leak area by shutting down different main line valves in the system. They had it confined to a four-block area but couldn't pinpoint the leak. Chris was asked to assist and using Pennsylvania Rural Water Association equipment the leak was found and pinpointed so it could be repaired.

The length of this visit was four hours. The savings to the system was approximately $109,500.00 in lost revenue, treatment, and contractor's fees along with possible upgrade to the plant and storage facilities to accommodate the extra production. This is a cost of $3.00 per thousand gallons per year. Rodger Hadzel can be reached at 570-836-3493.

Puerto Rico, Asomante - On February 28, 2007, the Puerto Rico Circuit Rider visited the Asomante Water System. The Asomante Water System is located at road #921 in the municipality of Las Piedras, Puerto Rico. Mr. Delfin Rivera, the Decision Maker of the water system called Mr. Apolonio Morales, the Puerto Rico Circuit Rider, in order to evaluate the water net of the community at Asomante ward.

The Asomante water system serves 800 people (300 connections approximately), has two deep wells and two distribution tanks. The water system is operated with a non-licensed operator and has no water meter.

The Puerto Rico Circuit Rider visited the water system in order to evaluate the water net and work with the community problems. As a result of the visit of the Puerto Rico Circuit Rider, the community can expect to save more than $18,000 per year in water loss and chemical waste once the water escapes are solved.

Rhode Island, Pascoag - On Wednesday, November 29, 2006, Atlantic States Rural Water Circuit Rider, Mike Romano, was contacted by Mike Lima, Superintendent of the Pascoag Fire District (401-255-7714) for technical assistance. The fire district is located in Pascoag, Rhode Island, a village in the Town of Burrillville that is located in the northwest corner of the state. Mr. Lima requested the assistance of Atlantic States Rural Water in conducting a leak survey of the fire district’s distribution system.

Due to a major MTBE contamination of the fire district's water supply five years ago, the district now purchases water from the neighboring Town of Harrisville. Purchasing water has led to a greater desire to conserve water and reduce unaccounted for water loss. Also, the Rhode Island Department of Health encourages systems to conduct yearly leak surveys.

Circuit Rider Romano worked with the Pascoag Fire District a total of 74.75 hours over a three-month period. In that time Mr. Lima and Circuit Rider Romano were able to complete a leak survey of the fire district's entire distribution system, which identified three leaks. They then pinpointed and repaired the leaks. Surveying and pinpointing were conducted using specialized equipment provided by Atlantic States Rural Water consisting of a Z-Corr Digital Leak Correlator, a Metrotech HL-400 Amplifying Ground Mic, 16 Flow Metrix Uni-Loggers and a Metrotech 810 Line Locator. Using the Atlantic States Rural Water equipment a savings to the Pascoag Fire District was estimated at $6,000.00 on services and labor costs.

South Carolina, Starr-Iva - South Carolina Rural Water Association (SCRWA) received a call in August 2007, from Scott Wooten requesting assistance with an Initial Distribution System Evaluation (IDSE). Scott Wooten (864-352-6717) is the assistant manager at the Starr-Iva Water and Sewer District. Scott is a full-time, certified operator. Starr-Iva Water and Sewer District is located in Anderson County, South Carolina. The district purchases metered surface water that is full-time disinfected. The district has 3,960-metered connections. The Starr-Iva Water and Sewer District has to submit an IDSE to the South Carolina Department of Health and Environmental Control (SCDHEC) and the Environmental Protection Agency (EPA) in order to remain in compliance.

Kevin Simpson, a Circuit Rider from SCRWA, visited the district on August 23, 2007. Kevin met with Scott Wooten and assisted with completing the IDSE.

The Circuit Rider was at the district for approximately seven and one-quarter hours and saved the district approximately $6,000 that another agency would have charged. The Starr-Iva Water and Sewer District remains in compliance with SCDHEC and EPA.

South Carolina, Honea Path - On July 12, 2007 South Carolina Rural Water Association Circuit Rider (SCRWA) #2, Patrick Jackson, responded to the request of the Town of Honea Path Utiltiy Manager and certified operator, Matt McCullah (864-369-2968), for assistance with the development of Initial Distribution System Evaluations (IDSE) for Belton Honea Path Water Authority, City of Belton, Honea Path and Donalds Due West Water Authority. Belton Honea Path Water Authority produces and sells, by master meter, disinfected surface water to each of the above entities. The IDSE, an EPA mandated disinfection by-product sampling plan, is an assessment of two specific groups of disinfection by-products known as Trihalomethanes and Haloacidic Acids. This plan will help the system evaluate their water quality and protect their customers by examining the levels of these know carcinogens throughout their water systems.

In just over three hours the Circuit Rider completed three IDSEs for these Anderson and Abbeville County water systems. The combined savings provided by SCRWA to the systems' approximate 6,000 customers is estimated at $18,000.

South Dakota, Spearfish Meadows - Contact Time: 6 1/2 hours.

Spearfish Meadows is a small housing community located one mile west off of I-90 exit 10 in Lawrence County, southwest of Spearfish, South Dakota. The system's contract operator is Ron

Waterland, 605-720-5010. Spearfish Meadows has a population of 145 residents and most of the services are not metered.

The morning of June 26, 2007, South Dakota Association of RWS Circuit Rider, Nick Jackson, was contacted by Rex Moyer who is a certified operator and on the board. One of Rex's many responsibilities is assuring that the system maintains compliance with the Safe Drinking Water Act. Rex was requesting assistance pursuing a loan for the Spearfish Meadows subdivision. The system has three wells, two 5,000 gallon underground storage tanks and a 3,000 gallon clear well tank where a pellet drop type chlorinator sets upon.

During the afternoon of June 27th, Circuit Rider Nick Jackson met with Rex Moyer at his residence at Spearfish Meadows. Two years ago Circuit Rider Nick Jackson recommended that an Engineering Study be conducted on Spearfish Meadows. An Engineering Consultant performed a preliminary study, recommending a new distribution system, new service connections with water meters throughout the sub-division. Rex stated that his water system board was deciding to pursue distribution system replacement to keep up with the water demands of the system. Circuit Rider Nick Jackson reviewed the proposed plan and stated that he would help assist with locating a funding organization.

On the morning of the 29th of June, the Circuit Rider met with the Public Works Director Cheryl Johnson of Spearfish. Cheryl stated that within the next couple of years Spearfish will have a 12-inch main going out past that direction and could possibly hook Spearfish Meadows up if they chose to.

Circuit Rider Nick Jackson then met with Rural Development to discuss the preliminary engineers report. Rural Development provided an Initial Application Packet to give to Spearfish Meadows. Rex Moyer was contacted and he stated that he would arrange a board meeting in the near future to go over the application procedures. Rex stopped in the Spearfish Rural Water Office and thanked Circuit Rider Nick Jackson for his expertise and assistance.

Many water users suffer from old worn distribution systems that have failed or are failing, only to keep adding bandages to their non-ending problems. There is a time when ultimately the old needs to be replaced in order to save money overall. The financial savings to Spearfish Meadows could have been significant if there was a Safe Drinking Water Act compliance issue or a health issue directly related because of the old failing distribution system.

South Dakota, Salem - at the request of the City of Salem, South Dakota, Sidney Munson, Circuit Rider II for South Dakota ARWS, performed leak detection at their system on February 12, 2007. This contact took two and one-quarter hours.

Salem is a small town located in central McCook County. Water Superintendent Bill Selland was the contact person; he is also a full-time certified operator. Their water source is ground water produced from local wells. The system's population is 1,371 with 548 service connections. The system's phone number is 605-425-2301. Their water source is metered as well as the customers,

but there are some city buildings and parks that are not metered. SDARWS has recommended that all services be metered whether they charge for water or not.

The reason for the request was water boiling out of the ground in the south ditch of State Highway 38 alongside the fertilizer plant. The water surfaced in an area where there weren't any water lines. The nearest main was on the opposite side of the highway. There were two PVC service lines crossing under the highway with the leak surfacing in the middle. The only connection under the frost in the ground was an old phone line trench. After checking all the valves and hydrants in the area, it was determined that the old abandoned two-inch PVC service line was leaking. The leak was estimated at over 300 gallons per minute. After discussions with the business owner, it was decided to dig on the north side of the highway and shut the old line off at the corporation stop.

Through the efforts of SDARWS staff, pinpointing the leak under the frozen ground saved time and equipment. The businesses in the area were able to go back to normal operation after the repair and the city was able to save costs of chemicals and electricity by not losing over 300 gallons per minute running down the ditch.

Tennessee, Waynesboro - The Town of Waynesboro is the county seat of Wayne County, Tennessee. Located in southern middle Tennessee, the Waynesboro area is popular for its great hunting and fishing opportunities. Waynesboro is also the home of country singer Mark Collie who scored more than a dozen top 20 country hits. The median household income of the area is well below the national average. Waynesboro Utilities serves approximately 1,428 customers in the Town of Waynesboro and the surrounding area through metered connections. The water treatment plant treats surface water, which is pumped from the Green River. This water source is metered. Treatment includes flocculation, coagulation, filtration and full-time disinfection. Annie Chiodo (931-722-5593) is the full-time certified operator. Mrs. Chiodo contacted Tennessee Association of Utility Districts Circuit Rider, Tony Wyatt, and requested his assistance in teaching the distribution crew how to properly flush the distribution system.

On April 9, 2007 Tony visited Waynesboro. After meeting with Mrs. Chiodo briefly Tony went to the distribution shop and met with Distribution Superintendent Bill Parker and his crew. The Circuit Rider explained that flushing should always be performed in a systematic manner. Flushing should start at the source, such as the treatment plant or a tank, and proceed to the end of the lines. He also explained how the operators should acquire information such as static pressure, residual pressure and flows. Tony provided each operator with handouts explaining how to calculate flows using either a tape measure or a pitot gauge. He also explained that it was very important to maintain a minimum velocity of two feet per second while flushing to break debris loose from the pipe walls and allow it to be flushed from the lines.

Next the Circuit Rider assisted the operators in flushing several hydrants. During this flushing he assisted with filling out the flushing records. After providing the formulas used to calculate flushing velocity, Tony created a computer spreadsheet that would calculate the flushing velocity after the men entered the flows and main size for each hydrant. He then went to the water treatment plant and met with Mrs. Chiodo to discuss the progress made by the distribution crew. Adequate flushing not only insures fewer customer complaints but also helps to reduce

disinfection byproducts such as trihalomethane and haloacetic acid, which can have adverse health effects. A good flushing program can help the water system avoid unnecessary testing and fines, which could result in several thousand dollars of savings.

The Circuit Rider spent a total of four and a half hours on-site with system personnel during this visit.

Tennessee, Bristol-Bluff City - Circuit Rider Roger Booher of the Tennessee Association of Utility Districts (TAUD) made several trips to the Bristol-Bluff City Utility District in March 2007. The utility is going through some major changes and they requested the assistance of TAUD and of Circuit Rider Booher.

Manager Donna Lawson, 423-538-7241, newly appointed by the Board, has worked with Booher in the past and called him to assist her with a new budget, emergency plan, cross-connection plan, consumer confidence report (CCR) and also to attend some special Board meetings to assist with policies and procedures. Booher also reviewed the findings of a recent sanitary survey and made suggestions to fix the discrepancies. Not only is Lawson a new manager of the utility, the utility has also appointed a new Board due to a resignation of one Board member and the death of another.

On March 20, 23, and 29, 2007 Circuit Rider Booher visited the utility and attended Board meetings for the purpose of assistance and advice. Booher helped Lawson with the CCR and showed another operator how to complete an Emergency Plan template to tailor to his utility. At the Board meetings, Booher and TAUD's John Hall held a Board training session that told the Board things they can and cannot do. It dealt with their responsibility. Booher also attended a Board meeting on March 29th and made a few suggestions during the meeting that were very helpful.

The Bristol-Bluff City Utility District located in Sullivan County, Tennessee serves mainly low-middle income rural folks and they sell water to neighboring utility, Blountville Utility District. Treating surface water from the South Fork of the Holston River, the utility has approximately 2,130-metered customers with Lawson as the certified water plant operator.

Booher's assistance and attendance at this utility saved them approximately $7,000 counting time and travel.

Tennessee, Sparta - Tennessee Circuit Rider, Doug Cherry, was contacted by the Cookeville Environmental assistance center and advised that the Town of Sparta Water Department was in need of technical assistance. Doug contacted the Sparta Water Department and an appointment to meet with water department personnel on February 26, 2007 was scheduled.

Sparta is located in White County, which is in the Highland Rim area of middle Tennessee. Sparta not only produces water for its residents, but also wholesales water to most of the rural utility districts serving White County. Sparta has a population of approximately 10,000 people, has several small industries, serves 3,283-metered connections and practices full-time

disinfection using chlorine to maintain a residual in the water at all times. Sparta's water source is the Calf Killer River through a raw water meter.

Doug traveled to the Sparta Water Treatment Plant and arrived at 8:00 a.m. on February 27, 2007. Doug met with the certified water treatment operator in charge, Stephen Goodwin, from 8:00 a.m. to 12:00 p.m. During a recent visit by the Tennessee Division of Drinking Water personnel several problems were discovered. The past operator in charge had resigned and Stephen Goodwin requested assistance in reviewing operational procedures to make sure all drinking water standards were being met and developing standard operating procedures to make sure all operators were following procedures that would ensure safe drinking water was being produced. Doug and Stephen reviewed present operating procedures and agreed that several changes should be made. Doug and Stephen then wrote standard operating procedures, incorporating the agreed upon changes. These changes will enable all operators to produce safe drinking water at all times and comply with all Division of Drinking Water Regulations.

Stephen Goodwin is a full-time certified operator. His phone # is 931-738-3281. The plans developed and other changes suggested will result in a savings of approximately $10,000.00 to the system.

Texas, Pruitt Sand Flat - On Wednesday, April 4, 2007 Paul King, Circuit Rider Number One of the Texas Rural Water Association (TRWA), met with Frank Stuart of Pruitt Sand Flat Water Supply Corporation (WSC) (903-962-3102), which is located in Van Zandt County, Texas. Mr. Stuart is a board member of Pruitt Sand Flat WSC. Mr. King visited Pruitt Sand Flat WSC at the system's request concerning the system's Vulnerability Assessment and Emergency Response Plan (VA/ERP) that the United States Department of Agriculture/Rural Development had requested of the system recently. The WSC is a metered and full-time disinfected ground water treatment system that serves 472-metered customers and has a full-time certified operator.

Upon arrival at the system Mr. King provided the WSC with the SEMS software and training material. After downloading the software Mr. King trained Mr. Stuart how to navigate and enter data into the software. Then Mr. King explained to Mr. Stuart some of the potential vulnerable points in his system and gave Mr. Stuart options for correcting these potential weaknesses.

As a result of this one-hour and thirty-minute contact by Mr. King the WSC should be able to complete their VA/ERP. This should also keep the WSC from hiring an outside contractor to produce their VA/ERP, which should result in a savings of approximately $5,000. This $5,000 saving can be used for addressing the system’s vulnerable points and perhaps allow the system to maintain their current rates.

Texas, Natalia - At approximately 8:45 a.m. on July 30, 2007 Mr. Delbert Hoover, Circuit Rider (CR) with the Texas Rural Water Association, made a requested contact visit to the City of Natalia and met with the Water Superintendent, Joe Arrellano. City of Natalia is located in Medina County, Texas, (830-663-9929) and is a metered and full-time disinfected ground water treatment system that serves 586-metered customers.

On the date of the contact visit, the City employed a Certified Operator, which is their full-time operator. Mr. Arrellano advised Mr. Hoover of his concern with the high water loss totals at month's end. Mr. Hoover discussed various reasons for the loss, which may not have been included in or accounted for in the totals, such as flushing, Fire Department usage, and water leaks. Mr. Arrellano was unaware that the water loss during leaks should be estimated to the best of his ability.

Following a tour of the system, Mr. Arrellano advised Mr. Hoover that flushing of water lines was also not included in the water loss totals. Upon inspection of a check valve at the wellhead, Mr. Hoover discovered that it was leaking back into the well, which would account for additional water loss. Mr. Hoover explained to Mr. Arrellano that while the well is pumping water, the water is being metered, but when the well is off the metered water is leaking back into the well. Mr. Hoover further explained the importance of a meter change-out program and suggested that the master meter be calibrated.

Mr. Hoover left City of Natalia at approximately 12:15 p.m. after educating Mr. Arrellano on various reasons for monthly water loss totals. This three hour and thirty minute contact visit potentially saved the city thousands of dollars in consultant fees.

Texas, Nigton-Wakefield - At 9:00 a.m., on Friday, April 13, 2007 Mr. William White a Circuit Rider with the Texas Rural Water Association made a USDA RD requested contact with Mr. Kenneth Spencer. Mr. Kenneth Spencer is the Vice President of Nigton-Wakefield Water Supply Corporation (WSC) located in Trinity County, Texas, phone number (936) 674-7546. Nigton-Wakefield WSC employs a part-time licensed operator. Nigton-Wakefield WSC has a 178-connection ground water system, which is completely metered and provides continuous disinfection.

Prior to meeting with Nigton-Wakefield WSC, Mr. White met with Mr. Ronnie Lawrence with the USDA RD office in Huntsville, Texas on Wednesday, April 11, 2007 at 3:00 P.M. Mr. Lawrence informed Mr. White that Nigton-Wakefield WSC was a new system, which began operation in 2006 and was already delinquent on their debt payments to USDA RD and needed help on calculating rates and fees. Mr. Lawrence advised Nigton-Wakefield WSC also needed help in board responsibilities and board operation.

Mr. Spencer the Vice President of Nigton-Wakefield WSC informed Mr. White during the two hour and forty-five minute contact that Nigton-Wakefield WSC needed assistance with calculating rates, policies and procedures and anything else Mr. White thought they might need. Mr. White explained the Circuit Rider Program to Mr. Spencer. Mr. White provided Mr. Spencer with a handout on properly calculating rates. Mr. White also instructed Mr. Spencer on calculating rates and fees. Mr. White discovered the system engineer calculated the original rates for Nigton-Wakefield WSC with 2,000 gallons included in the base rate. With no previous usage data the engineer had based the rates on a median usage per connection of 4,000 to 6,000 gallons per month. In March 2007 Nigton-Wakefield WSC had only one connection use more than 2,000 gallons of water. Mr. White explained that Nigton-Wakefield WSC would either have to double the usage of their customers, which would not happen, or calculate their rates using the current usage data in order to be solvent.

Mr. White explained the Open Meetings Act and Public Information Act requirements and advised how Nigton-Wakefield WSC could obtain copies of manuals and videos from the Attorney General's office to be in compliance with state law. Mr. White provided a copy of the TRWA sample Annual Meetings Procedures and explained the process of conducting an annual meeting. He also explained the functions of by-laws and the system tariff. Mr. Spencer's questions were answered and he was offered any further assistance that might be needed in the future.

Mr. White secured from Nigton-Wakefield WSC at 11:45 a.m., April 13th having given Nigton-Wakefield WSC the ability to become financially solvent and conduct business in compliance with state laws. Mr. White possibly saved Nigton-Wakefield WSC thousands of dollars in legal fees and fines.

Utah, Elsinore - On December 10–12, 2007 Jim Watts, Circuit Rider for Rural Water Association of Utah, provided additional assistance with the Town of Elsinore on updating their system maps in order to have a good as-built on site. The town has an expensive mapping program that an engineering group sold them, but no one in town knows how to use it, and they have no money to have the engineering group come back and teach someone. This is a growing problem in a lot of smaller towns that Jim has visited.

The part-time, elderly certified water operator has struggled with mapping and the paperwork side. This has put these duties back on Jeanne Wood, Clerk/Office Administrator (435-527-3306). The water operator checks the well and chlorination system and reads all the meters, both source and customers. Retirement is coming in the future and good water system maps are needed to retain the operator’s knowledge of the water system. Jeanne Wood and Jim have had to take whatever time is available when Jeanne is not doing the bookwork and clerk duties for the town to get the mapping done. It is slow and time is short but they feel that if this is accomplished the town will be much better off.

Elsinore is located in Sevier County, Utah. It has a population of 683 with 274 water connections.

When the mapping of the Town of Elsinore is completed, the savings will be approximately $10,000. During this last on-site visit the Circuit Rider assisted a total of five hours.

Utah, Corrine City - Chuck Jeffs, Circuit Rider #2 for the Rural Water Association of Utah, made an on-site visit to Corrine City in Box Elder County, Utah. The mayor, Deverle Wells, asked for some assistance in determining where the system was as far as water rights, source, and storage. The information that was developed was presented to the City council in a special meeting on March 20, 2007.

It was determined with their growth they would need to add storage first and then look at drilling a well or purchase water from the Box Elder County Water Conservancy District. They set a date to begin the process of planning and setting goals and dates as to when they will begin the

improvements. To have someone else develop this information would have cost approximately $20,000.

Vermont, Jeffersonville - On December 6, 2007 Vermont Rural Water Circuit Rider Brent Desranleau answered a call for assistance from Rich MacKay, who is the full-time certified operator for the Village of Jeffersonville, Vermont. The water system is located in Lamoille County and services 185 residential and some light commercial accounts. Jeffersonville's source is from several springs that feed two storage tanks. The system has full-time disinfection and a master meter. Jeffersonville had lost over 150,000 gallons of water over two days, and was unable to locate the problem.

When Desranleau arrived, he and the operator reviewed all of the system mapping and hydraulic information to try and determine the elevation of the possible leak in the system. Once this was completed a site visit to the altitude valve pit and other PRV vaults were then checked as well; this concluded the work on the 6th of December.

On the 10th of December, Desranleau returned to resume looking for the leak, and over the course of the weekend, water was hauled in to keep the high zone under pressure. Leaks on the delivery side of storage were located in a remote location of the system, which appeared to have been leaking for some time. As the search proceeded, Desranleau located a large leak on a four-inch cast iron line that was running down into a wooded area of the system, which was not visible from the road. This leak was repaired the next day, and the storage tank resumed filling.

Desranleau spent a total of 13.75 hours on-site with the system, and as a result of his site visit, the Jeffersonville Water Department had a one-time savings of $7,000.00 that would have been spent in water hauling cost, chemical treatment and subcontracting time to excavate for leaks.

Vermont, Bennington - Tom Young of the Vermont Housing Authority, 802-763-3937, called Circuit Rider Paula Jackson from Vermont Rural Water on November 19, 2007 with a request for help. Tom is the Manager of five different parks for the Vermont Housing Authority. Mountain View court mobile home park located in Bennington, Vermont has 26 service connections and is considered a consecutive water system.

The park has been getting positive coliform tests, and Tom wasn't sure if it was because of a leak or sampling procedure. The Department of Environmental Conservation Compliance section requested that Tom figure out what the cause of the positive coliform hits were. DEC also recommended that Tom call Vermont Rural Water Association for assistance.

The park has only a master meter, no service meters. The Circuit Rider was able to rule out a leak as the cause of the coliform hits. After reviewing sampling procedures with the Park part-time manager, it was determined that it was a sampling error. The part-time manager was not removing the aerators or cleaning the sampling location thoroughly.

The water system was able to save the cost of getting an outside leak detection business to come in and rule out a leak as the cause of the bacteriological hits.

Virginia, Goshen - On June 15, 2007, Virginia Rural Water Association Circuit Rider 1, Kenny Reynolds, traveled to the Town of Goshen for leak detection in their distribution system. The Town of Goshen is located in the Shenandoah Valley in the foothills of the Alleghany Mountains. The Town of Goshen is located approximately 15 miles northwest of historic Lexington in Rockbridge County. The Town of Goshen, incorporated in 1883/84, has a land area of 1.7 square miles and a population of 400 residents. Circuit Rider Kenny Reynolds received a call on June 14, 2007 from William White that the Town of Goshen had a water leak that they had not been able to locate and it was draining their water storage tanks. Hours later the Circuit Rider was notified that they had located the leak, but would like for him to come up on the 15th to check over their system.

On June 15, 2007, Circuit Rider Kenny Reynolds met with William White and Jake Worley, (540-997-5545), part-time water and distribution employees for the Town of Goshen. Mr. William White, a Virginia Water Works Operator Class IV, stated that after repairing the water leak on their six-inch main they have been unable to fill their storage tanks and most of their citizens are out of water. The spring water supply is metered and continuous disinfection with bleach is provided at the well house. The 250 residential and commercial customers are not metered.

Circuit Rider Kenny Reynolds and Town of Goshen staff began leak detection in their distribution system. The Circuit Rider used sensitive listening devices and correlating equipment to locate possible water leaks. The Circuit Rider experienced difficulty in listening for possible water leaks due to lack of water or water pressure in the distribution system piping. The Circuit Rider over the next several days began shutting off all water connections and isolating areas of the distribution system for individual leak detection. Due to water being shut off arrangements were made for bottled drinking water and tankers of water for flushing and bathing for the Town's citizens to be brought in. The State of Virginia Health Department/Office of Drinking Water Programs placed the Town of Goshen on a boil water advisory.

On June 18, 2007, Virginia Rural Water Association Circuit Rider 2, Mark Norris, arrived on scene to assist with leak detection. Over the next several days numerous water leaks were located and repaired by work crews from neighboring communities. On June 20, 2007, State of Virginia Governor Tim Kaine designated a State of Emergency for the Town of Goshen. This makes resources and personnel from the state and other sources more readily available. These resources included Rockbridge County and State of Virginia Office of Emergency Management personnel and equipment, the American Red Cross, and personnel and equipment from the Virginia National Guard.

On June 24, 2007 water was restored to all residents of the Town of Goshen. The various funding agencies are working with the Town of Goshen's local government officials for possible loans or grants available for a much-needed distribution pipe system upgrade.

Circuit Rider 1 was on-site for a total of 166 hours performing leak detection, water line location, or assisting town crews with valve operation, and technical assistance. Circuit Rider 2 was on-site for numerous hours also performing leak detection, and as a coordinator working at the Office of Emergency Management's Command Post, locating needed supplies and equipment. It

is estimated leak detection costs run approximately $800.00 to $1,500.00 per day, and line location is approximately $1,000.00 per day for a private contractor. The Town of Goshen incurred no charges for the services of the VRWA Circuit Riders. Conservatively, The Town of Goshen saved $20,000.00 in leak detection and line location, and technical assistance fees from Circuit Rider 1 alone. During the ten days that Circuit Rider 1 was on-site, a total of 14 major leaks were located and repaired. Also, numerous small service leaks were located and are continuing to be repaired. Presently, the Town of Goshen is pumping approximately 150,000 gallons of water at the spring pump house, which is down from their normal use of 300,000 gallons per day. Additional savings will come in the form of water production costs: such as electrical for extra hours pumping, wear and tear on the pumps, and extra water treatment chemical expenses. Most importantly, the Citizens of the Town of Goshen have their water supply back up and running, the boil water advisory has been lifted by the Virginia Department of Health, and life in Goshen is back closer to normal.

Virginia, Goshen - On June 14, 2007, the Virginia Rural Water Association Circuit Rider, Kenny Reynolds, received a call on his cell phone while still in Reno attending the in-service conference. The Town of Goshen, located in Rockbridge County, was having problems maintaining tank levels at their two elevated tanks. Mr. Reynolds informed them of the conference and that he would come to the town on Friday after returning to Virginia. During his on-site visit, Mr. Reynolds had spent three days on-site, with the last two being 48 hours straight. He called the other circuit rider for help and relief.

Mark Norris, Virginia Rural Water Association Circuit Rider #2, arrived on that Monday after being called in by Mr. Reynolds. Work included locating lines, and leaks for work crews to repair the leaks. Virginia Department of Health and Department of Emergency Management deemed this event a catastrophic event. Secretary of Public Safety, John Marshall visited the location to relay information to Virginia Governor Tim Kaine. On Tuesday, June 19th, Governor Kaine announced a Declaration of Emergency for the Town of Goshen, due to the fact that an estimated 650 residents were completely out of water.

After repairs, the 12,800 feet of cast iron pipe that was installed in 1933 - 1936 continued to fail every time the system was recharged with water. Mr. Norris was requested by Robert Foresman, Rockbridge County Emergency Response Coordinator, to work in the command center to coordinate repair crews, ordering of materials, rotation of workers from surrounding counties, and to report status of on going progress from the field during conference calls that included the Governor's Office, Department of Health, Virginia Department of Emergency Management, National Guard, and the Red Cross. After the Governor had declared the emergency, which offered more avenues of assistance, Mr. Norris submitted to the committee that tankers be used to truck water into the south side of town and pump the water from tankers into the system through a fire hydrant and valve off the area that was having continuous failures. The reasoning behind this was that the spring, which is the town's only water supply, was located on the far north end of the system. This is where the 12,800 feet of pipe was located and only supported 70-80 connections. If water could be pumped into the south side of town, the majority of connections (approximately 200 out of 270) could have water that would be supplied by the 127,000-gallon storage tank being filled by the tankers.

The State of Virginia's procurement contractor submitted a price of $10,000.00 per day for two tankers to bring water from Augusta County and Rockbridge County. Mr. Norris called Godwin Pumps and two tankers were secured from the Department of Corrections. The Virginia Department of Transportation donated fuel for the tankers and the pump was secured for less than $1,000.00 for a week's rental (this included disinfection of pump, hoses, and fittings) saving the operation $30,000.00 - $40,000.00

After working in the Command Center during the day, Mr. Norris would then work with crews opening and closing valves to try to recharge the system in the evenings. On Friday, June 22nd, the last of fourteen major leaks was found and repaired. The town has since restored water to all the residences. But small leaks are continuing even as of this writing. An on-going effort for emergency replacement of this pipe is happening that is having funds provided by Rural Development and other state associations. A town council meeting is scheduled for July 17th, and the Circuit Riders from Virginia RWA have been requested by the state and county agencies to be present.

A total on-site contact time of 77 hours was made by this Circuit Rider knowing the cost from various engineering firms would range from $125.00 to $175.00 for line location and leak detection services. The town would recognize a savings of $9,625.00 to $13,475.00 for those services alone. Add in the $30,000.00 to $40,000.00 savings for the trucking in of water and a substantial savings was seen. The Mayor, Danny Goodbar, or operator knew to call Virginia RWA first as they know we will respond and be there for the system in whatever capacity is needed. Also the Governor and Department of Emergency Management have a resource to call on during a crisis!

The Town of Goshen has a metered source and metered users that are not working at this time. The system provides full-time disinfection, but does not have a full or part-time operator. The contact person at the pump station is certified operator William White.

Washington, Brewster - Brewster, Washington is located in Okanogan County, just 30 some miles down stream from Chief Joseph Dam. It is located right on the banks of the Columbia River with the hills around Brewster filled with apple orchards; if not apple orchards, good old American sagebrush and weeds. Brewster, a city of 900 water connections, has a population of 2,300 give or take some depending on the time of year. They have un-chlorinated drinking water that is from a number of wells in the area. The wells are metered and so are the customers.

Dave Reynolds (the full-time, certified water operator, 509-689-3464) asked Jim Watts, Circuit Rider #1 with Evergreen Rural Water of Washington, to meet with him and the new Mayor, Dan Webster, after the last public works director passed away.

On February 15, 2007 Jim spent two hours going over the small system management program that is put out by Department of Health to help systems run smoothly in sudden transitions as Dave and the Mayor found themselves in. It entails 18 elements that consist of Water Facilities Inventory, Water Quality Monitoring Program, Consumer Confidence Report, Preparing for your Sanitary Survey, Annual Operating Permit, Cross-Connection Control Program, Emergency

Response Plan, Service Area and Facility Map, Operation and Maintenance Program, Wellhead Protection Program, Water Right Documentation, Record of Source Water Pumped, Water Usage, Water Conservation Program, Component Inventory and Assessment, List of System Improvements, Budget, System Management. At the end of the second hour they had gone by the point of saturation and asked if they could digest what they had gone over. Jim will continue to assist Brewster in this project.

With the help on the small system management program alone the system will save close to $5,000.

Washington, Pe Ell - Evergreen Rural Water of Washington Circuit Rider #2, Derek Zock, provided assistance to the Town of Pe Ell during the time period of December 3 to December 23, 2007 with total on-site time of 79.5 hours.

The Town of Pe Ell is located in Lewis County. Their water is supplied by two metered surface water sources, is filtered and has full-time disinfection. This water supplies approximately 350-metered connections.

On December 3rd the west end of Lewis County had a rainfall and snow melt event of epic proportion. It disrupted many water systems in the area. One of the worst hit systems was Pe Ell. By 07:00 p.m. the bridge that supports the water line coming down from Lester Creek had already been washed out. This bridge was built in the 1930s. By 08:00 p.m. the second water supply located on the Chehalis River just below the bridge had been overrun and washed out by the high water. The water line that is suspended over the river at the edge of town was ripped out around the same time. At this time the Town had NO water supply to feed the treatment plant. The system was running off the water tank only.

Circuit Rider Zock made contact with Don Webster, Public Works Superintendent, one of two full-time certified operators, for the town first thing in the morning and started going over all the things that needed to be done to get water back to the plant. Circuit Rider Zock also made contact with the town's engineer and went over the best ways to bring the system back on line temporarily to start filtering water. Circuit Rider Zock continued to work with the town to replace the water line across the river to get water to the connections on the other side.

During this event Circuit Rider Zock saved the town $25,000.00 and was able to expedite the efforts in bringing on a more permanent water supply until replacement of the destroyed water supplies can be made.

Washington, Coronet Bay Heights - On May 4, 2007, Dave Jorgensen, (360) 675-2419, Board member of the Coronet Bay Heights Water Association Inc., contacted Bob Kreb, Evergreen RWOW Circuit Rider #3, for assistance in locating a distribution line and a leak in the system. This is a private non-profit system of 46 connections located on the north end of Whidbey Island near the City of Oak Harbor in Island County, Washington. After a short conversation, it was apparent that Mr. Jorgensen would need field assistance so an appointment was made for Bob to visit the system.

Upon arrival at Coronet Bay Heights Water Association, Bob met with Mr. Jorgenson and the system operator. Bob was informed that the system was using about 2,000 gallons of water per day more than usual. The system is metered at the source and at 60% of the service connections. Mr. Jorgensen and Bob began a systemic search for the leaking line. Using the service connections that could be located in the system they began to walk one of the main distribution lines using a leak detector along the way. As they walked one section of distribution line, it became evident there was a leak. A leak was estimated to be on a two-inch distribution line running under the street. The line was dug up and a leak was found five feet off the center of the street. Bob discussed the different ways to look for possible leaks.

The Coronet Bay Heights Water Association is not using disinfection at this time. They are currently metered at the source and are working on meter installation to residents.

Bob was at the system a bit more than three hours on two separate occasions discussing the system, the possible repairs, and recommending improvements such as installing meters at service connections. The timely response and leak detection efforts of Evergreen Rural Water Association resulted in an estimated savings to the system of potentially $1,500 per day, the typical cost of a professional leak detection company to respond. The efforts of Evergreen Rural Water of Washington saved this system an estimated $25,000 in intangible costs (electrical, equipment wear and tear, and equipment costs) this money can better be used to accomplish the needed repairs to Coronet Bay Heights Water Association.

West Virginia, Kingwood - On Thursday, April 26, 2007 West Virginia RWA Circuit Rider 1, Rick Dennison, received a request for assistance from Eric Degler the distribution operator from Kingwood Waterworks, 304-329-1241. Rick was not busy that afternoon so arrangements were made to meet and investigate the problem. Kingwood is the county seat of Preston County, West Virginia in north central West Virginia bordering on both Maryland and Pennsylvania. It is a small town of about 3,000 people with average unemployment and middle income. The water treatment plant is a conventional surface water plant using pre and post chlorination, rapid sand filtration and both raw and finished water meters. Robert McVickers is the chief operator and they have a total of two Class III operators and one Class II operator on staff. They have approximately 1,300-metered customers and they also wholesale water to one Public Service District with close to 900 customers.

Rick met with Eric around 1:00 p.m. that day. The leak was unusual in that the water was getting into some electrical conduit and flowing to a major panel box where it exited the box to disappear underground again. They investigated without being able to make any conclusions due to noise interference and having a car wash and a laundry mat on the two-inch line that was suspected of causing problems with turning the line on and off to listen. Since Rick was staying in Kingwood they agreed to meet that night so they would be able to shut off the line without interfering with the customers and avoid the noise problem. Within 30 minutes they were able to get a location on the leak and then checked a different location while they were working that night. The leak was estimated at close to 30 GPM and was causing great concern since it was flowing from the electrical panel box.

The estimated cost of the leak was over $2,500.00 per month and Rick was on-site for a total of four hours.

West Virginia, Adrian - On Thursday, May 17, 2007 West Virginia RWA Circuit Rider #2, Jack McIntosh, received a request from Nina Monroe, Office Manager of Adrian PSD (304-924-6107), to provide technical assistance involving leak detection which had just occurred earlier that day.

Jack arrived within the hour to meet with the maintenance men to determine the location of the leak. He reviewed technical data from tanks and the booster station to determine the area of the leak. Following this review Jack provided the necessary technical assistance to pinpoint the 400-gallon per minute leak for repair.

The Adrian PSD is located in the central portion of West Virginia in Upshur County, home of the Sago Mine disaster. It is made up of 1,100-metered customers, full-time disinfection, and one certified operator. They purchase their water for resale from the City of Buckhannon. Upshur County has an unemployment rate of 4.4% and has had a population change of 1.2% last year. A mean travel time for people traveling to work is 26.4 minutes and the median household income is $34,624.00.

During this on-site visit of two and one-half hours, Jack saved Adrian PSD $18,489.00 per month in lost water with the leak of 17.28 million gallons per month.

West Virginia, Logan County - On April 16, 2007, Circuit Rider William Miller from West Virginia Rural Water received a request for technical assistance involving leak detection from Don Morgan, field superintendent, Logan County PSD (304-946-2641). Logan County was under a state of emergency due to major flooding throughout the county. Logan County PSD had several hundred feet of line washed away as well as several creek crossings wash out. William was able to locate several river-crossing washouts in the Logan County PSD distribution system. The loss of water was costing Logan County Public Service District many man-hours as well as lost revenue due to lost water service.

Logan County PSD is located in the small coal mining community of Monaville, which is in the southwestern section of West Virginia. Logan County PSD has 5,500-metered customers, five certified water operators, and provides full-time disinfection at their surface water treatment plant. Their source water for treatment is the Guyandotte River. According to the 2000 Census, Logan County has a population of 36,502 residents. The mean travel time to work is 30.2 minutes. The median household income is $24,603.

During this on-site visit of six and one-half hours, William was able to save Logan County PSD $20,000 per week due to major water loss and lost man hours.

Wisconsin, Osseo - Wisconsin RWA CR#1, Jeff La Belle, was contacted by Director of Public Works Jim Deich (715-597-2207) from the City of Osseo about training and use of a leak locator. A time was set for Monday, April 16, 2007 at 8:15 a.m. to conduct the training.

Present for the training was DPW Jim Deich, Water Supervisor Dale Olson, Water Operator Don Erickson; all three are full-time Certified Operators for the city. CR#1 La Belle trained the operators by going out into the system and simulating different leak sounds to help them identify the leaks verses background noise. CR#1 La Belle also instructed on how to conduct a leak survey of the water system.

Osseo (population 1,671) is located 20 miles south of Eau Claire in Trempealeau County of west central Wisconsin. Osseo has a hospital, school district and industry as well as commercial businesses. Osseo water is supplied by metered ground water wells with continuous disinfection for its 668-metered service connections.

Time for this contact was three and one-quarter hours. Savings to the system was $2,600 for a leak locator, and another $2800 to have a company do a leak audit. Total savings $5,400.00.

Wisconsin, Thorp - Wisconsin Rural Water Association's Circuit Rider, Ed Hendzel, received a call from Tim McCredden requesting assistance in locating several water laterals. Tim is the City of Thorp's Public Works Director. Ed and Tim set a meeting date of Friday, May 18, 2007 to begin the technical assistance.

The Thorp Waterworks is located in Clark County and can be reached by calling Tim McCredden at 715-669-5808. The utility has eight-metered ground water wells and provides water to 758-metered connections. The utility also has full-time chlorine disinfection.

Ed arrived at 10:00 a.m. on Friday, May 18th and met with Roger Kell to begin locating the laterals. Roger is Thorp Waterworks' certified, full-time water superintendent. Ed and Roger worked for a couple of hours locating laterals and decided to continue on the following Monday.

Ed arrived at 10:00 a.m. on Monday, May 21, 2007 to continue the technical assistance. After one and three-quarter hours of line tracing Ed and Roger completed the necessary locating. The total contact time to complete the technical assistance was three and three-quarter hours. The savings to the utility was about $3,000.00, the cost of a line tracer. Ed will do another follow-up visit in the near future.

Wyoming. Osage - On February 20, 2007, Rod McMeekin, the Council Chairman for the Town of Osage, Weston County, phoned the Wyoming Rural Water office, which put him in touch with Jim Van Dorn, Circuit Rider #1. Rod was concerned about the way the oil company wanted to connect to the town's infrastructure. At that time Jim scheduled a meeting with Rod on the 22nd to evaluate the system.

On February 22nd, Jim arrived in Osage about 2:30 p.m. and met with Rod, which gave Jim a chance to review the system's operation prior to the 6:00 p.m. meeting at Town Hall. The system consists of one artesian well that is metered at the wellhead, a storage tank, and very limited

infrastructure that feeds approximately 130 connections. The system is metered. There is no disinfection. They do have an operator, but he is not full-time.

Jim reviewed the proposed plans submitted by the oil company and explained to the council that the plans are in the best interest of the oil company and not the community. The town meeting lasted approximately two and one-half hours, during which time everyone concurred that it would be best if Jim would come back with help from the other program people to assist in writing a water use agreement to make sure the community's assets are protected. The council expressed their relief and appreciation for Rural Water jumping in and coming to their aid.

Jim is scheduled to return on March 9th with Kathy Weinsaft, Training Specialist, to meet about a host community agreement. Savings to the system was in excess of $100,000 financially, as well as the environmental and health impacts of possibly losing water for the community. Total time spent at the system was six hours. Contact number for the Town of Osage (307) 465-2205.

Wyoming, Vista West - Ross Jorgensen, Circuit Rider from Wyoming Association of Rural Water Systems, met with Bob Campbell, Board Secretary/Treasurer (307-283-2570) and Kent Watne, system member of Vista West Improvement & Service District, on-site October 30, 2007 to review and inspect the present water system status. Alana Cannon with the Rural Development Office, Casper, Wyoming, referred the contact to WARWS. Also present were WARWS staff members Kathy Weinsaft and Mark Court, WW Circuit Rider.

Vista West is a small water & wastewater district with 53 taps located seven miles north of Sundance, Crook County, Wyoming. The water source is from two Madison Formation ground water wells with a 300,000-gallon storage tank. Chlorine gas is used for disinfection. The district presently contracts their Certified Operator with an engineering firm located in Upton, Wyoming 35 miles away. Communications with their operator is hit and miss, and the Board Members desire to educate themselves better with their system and get a district resident to become the operator.

In discussions with Bob and Kent the following items were identified as needing to be located or completed as the first steps in assuring compliance; 1) Site Sampling Plan 2) System Configuration (due 11-2008) 3) Emergency Response Plan 4) Vulnerability Assessment and 5) Operator Designation. During the system inspection the following was discovered where attention is needed: 1) the district provides water to a National Forest Campground free of charge; 2) Back Flow Preventer to Campground has not been tested since 1994; 3) Maintenance and Repair records of chlorine gas regulator, lines and injector; 4) Chlorination building needs general housekeeping inside and out; 5) Roof drain gutter discharging water on door and entrance to chlorine room; 6) Rusted piping needs cleaned and repainted; 7) Production records not available; Board is not sure if any are being kept; 8) At least two connections are not metered; and 9) Three plus years since fire hydrants have been flushed.

The site records inspection and technical assistance saved Vista West approximately $1,500.00 with additional savings to come with follow-up visits as WARWS assists the district compared to area consulting engineering firms.

Very Interesting Note - Vista West was originally the U.S. Air Force Sundance Radar Base. As part of the base, a first of its kind Portable Pressurized Water Nuclear Reactor was installed and tested. The reactor generated electricity for the Radar Station and had the capacity to provide electricity to a community of 2,000 people. Testing ran from 1961 through 1968. After seven years of testing, the reactor and radar units were dismantled and moved by the military. At its peak, the base housed 35 military personnel. The housing, water and wastewater system was sold to the private sector and the subdivision was recorded in September 1975. The U.S. Air Force maintains numerous monitoring wells in and around the district.