December 13, 2013

Water Efficiency Grant   PDA 13000000027
Steamboat Springs, Colorado

100% Progress Report

Mt. Werner Water and Sanitation District is submitting this final progress report a project that delivered a Web based, demand-side leak detection and irrigation efficiency solution.   One of the goals of this project was to deliver individualized information to each of Mt. Werner Water's 2400 customers that:

- Notifies them when water leaks are detected
- Helps minimize over-irrigation
- Enables them to more efficiently manage their water consumption.

In this report I will review the individual tasks, accomplishments and obstacles.

Task 1: Web Portal Software
- A relational database was configured by AquaHawk Alerting portal for Mt. Werner Water.
- A data analytics engine was integrated performing statistical data analyses and mathematical computations to determine when a water customer's usage indicates a potential leak or other problem.
- A customer portal was finalized with customer account information.
- Mt. Werner Water's staff members are able to access customer information via AquaHawk.

Task 1 did take quite a bit more time then expected to develop. The complexities of the software and the uniqueness of Mt. Werner Water's meter base proved to be a challenge. As a result another programmer was added by AmCoBi to complete the project. This task was completed but did take a lot more time on AmCoBi's part.

Task 2: Integration of MWW Customer Information into the Web Portal
- Customer accounts were created and historical consumption data imported. Task 2 was completed on time after Task 1 completion.

Task 3: Integrate Aclara AMI star system data into the web portal.
Daily consumption data from Aclara Ami system is automatically imported into the Aqua Hawk system each day. Task 3 relied on the transmission of the meter reads from the data collector units (DCU's) to the AquaHawk server here at our office. When data
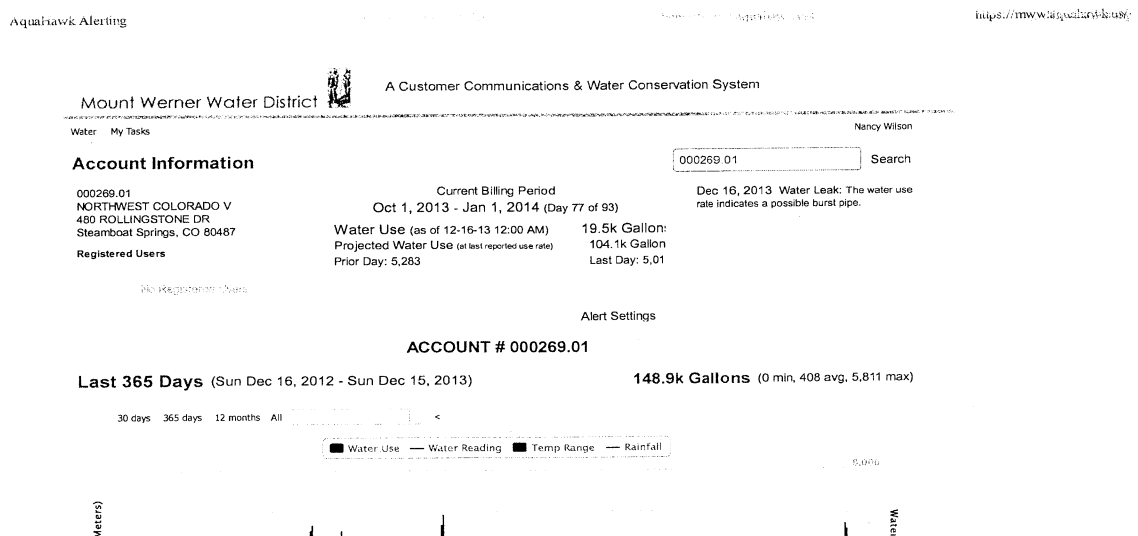
transmission failed, the AquaHawk system did not have the data to input. Also some oddities were noted with meter types not being read correctly and converted resulting in incorrect consumption amounts being entered into the AquaHawk system. For example, 10 cubic meters consumption was actually only 1. We are still correcting some of the meter types with Aclara star system and have to manually manipulate some of the data in the Aclara meter-reading system.

Task 4: Launch Beta Test of Web Portal System
- During this task, MWW Staff user accounts were created. MWW staff was trained via webinar on how to use the portal system. Staff requested enhancements (conversion to cubic meters from gallons, less than one cubic meter reflected in gallons of use, meter locations for multiple meter accounts) have been incorporated

Task 5: Launch Production Web Portal
- A letter was sent with the 3rd Quarter Billing to all of our customers informing them of the new portal and registration instructions. We have a link on our website to the AquaHawk portal and offer individual support as needed. As we contact customers regarding spikes in water usage, they have also been registering for portal use. We currently have 116 registered users. I have attached a copy of the letter inviting our customers to register. The link to the website is https://mww.aquahawk.us/.
- Below is a screen shot of a portion of what the customer sees when alerted to a spike in water usage

Aquahawk Alerting   https://mww.aquahawk.us/

A Customer Communications & Water Conservation System
Mount Werner Water District

Water   My Tasks   Nancy Wilson

Account Information | 000269 01 | Search

000269.01   Current Billing Period   Dec 16, 2013 Water Leak: The water use
NORTHWEST COLORADO V   Oct 1, 2013 - Jan 1, 2014 (Day 77 of 93) rate indicates a possible burst pipe.
480 ROLLINGSTONE DR
Steamboat Springs, CO 80487   Water Use (as of 12-16-13 12:00 AM)   19.5k Gallon:
Registered Users   Projected Water Use (at last reported use rate)   104.1k Gallon
                                   Prior Day: 5,283   Last Day: 5,01

                                            Alert Settings

                                    ACCOUNT # 000269.01

Last 365 Days (Sun Dec 16, 2012 - Sun Dec 15, 2013)   **148.9k Gallons** (0 min, 408 avg, 5,811 max)

     30 days   365 days   12 months   All   <

                    ■ Water Use   — Water Reading   ■ Temp Range   — Rainfall

Below is the information sent to our customers to register for the AquaHawk website.

It's Free!

Subscribe to Receive Leak Alerts and Access your Water Usage Information Online

- Manage Water Usage
- Create a Monthly Water Budget
- Detect Potential Water Leaks
- Save Water & Money

AquaHawk Alerting is a **FREE** service for Mount Werner Water customers to assist you in managing your water usage and lowering your monthly bills. Register today. It's easy!

After you register, you'll be able to:

Receive timely leak alerts

You specify how you want to be contacted: e-mail or telephone. When your usage indicates a possible leak, we'll contact you. AquaHawk helps prevent costly property damage from unrepaired leaks and gives you peace of mind when you're away from your home.

Monitor your water usage

See how much water you're using anytime during the billing cycle.

Manage water expenses

With Threshold Alerts, you can specify a monthly water budget in gallons. If your usage exceeds that value, we'll send you an alert.

Learn ways to save

Get a better understanding of how you're using water by performing useful comparisons online. See how you compare to similar households. Learn effective ways to reduce water usage and save money!

Register Now!

To register, visit: https://mww.aquahawk.us/

Customer Benefits

- Know about leaks <u>before</u> they cause costly damage!

- See how much water your family is using each month.

- Set usage limits, and never be surprised by a high bill again!

- Access your account from any internet-connected device - your smartphone, laptop, or desktop computer.

- Opt-in services lets you choose how you want to be contacted - e-mail, text or phone.

Complete access when you need it & how you want it!

Powered By **AquaHawk ALERTING!**

It is too early to see any real water savings from this program as it has only been offered to our customers since October. However, we have seen instances where this program has alerted us to many different spikes of water usage.

For Example:
- A piece of drywall had fallen on a faucet in a kitchen and turned it on. This resulted in a water spike. Had we not been alerted (this is a second home and rarely occupied), the water would have remained on until the billing cycle drew the large amount of water usage to our attention. We bill quarterly!
- Several properties had leaks in their irrigation system. We were able to let them know of the suspected leaks.
- Second home owners experienced malfunctioning toilets from cleaning the unit. This used as much as 5000 to 6000 gallons a day. We were able to alert the property managers and save many gallons of water.
- Units listed for sale had malfunctioning toilets from showing the unit. Again the units were not occupied.

Conclusion

The implemented program has been very successful in alerting us to water spikes and saving hundreds of thousands of gallons of water. We look forward to the next irrigation season when owners can set thresholds of water use and use the conservation element in the AquaHawk portal. With the assistance of the CWCB grant, AmCoBi has been able to develop the software using the Aclara data for each water meter. Our end users have been very appreciative when alerted to a water spikes. We look forward to analyzing data from the next year to calculate water savings using this program. As we go forward, we will be able to report estimated water savings to you.

Respectfully Submitted,

Nancy Wilson
Office Manager