2017 Groundwater Guardian Profiles

Groundwater Guardian is a program of The Groundwater Foundation.
www.groundwater.org
Groundwater Guardian Communities

ALABAMA
New Brockton/Coffee County

CALIFORNIA
Desert Hot Springs
Desert Hot Springs High School
Desert Springs Middle School
Orange County Water District

FLORIDA
Hernando County

IDAHO
Boise City

ILLINOIS
City of Loves Park
City of Rock Falls
McDonough County

INDIANA
Carmel
Elkhart
Indianapolis-Marion County
Valparaiso

MASSACHUSETTS
Barnstable County (Cape Cod)

MICHIGAN
Charter Township of Texas
City of Battle Creek
City of Kalamazoo
Coldwater
Greater Lansing Area
Michigan State University

MISSOURI
Independence

NEBRASKA
Beatrice
Cargill Team Blair
Grand Island
Keith County
Lincoln
Trenton, Village of

NEVADA
Las Vegas Valley

NEW HAMPSHIRE
Merrimack

NEW YORK
Moodna Watershed Intermunicipal Council
Town of Wallkill

NORTH CAROLINA
Mecklenburg County
Orange County

OHIO
Brown County
Dayton Multi-Jurisdictional Source Water Program
Hamilton to New Baltimore
Wright-Patterson Air Force Base

OREGON
Southern Willamette Valley Groundwater Management Area
Springfield

PENNSYLVANIA
Buhl Community Water
Keystone Clean Water Team
Shrewsbury Borough
Washington County

RHODE ISLAND
North Kingstown
TENNESSEE
Memphis and Shelby County

TEXAS
North Plains Groundwater Conservation District

WISCONSIN
Calumet
Chippewa Falls
Kewaunee County
Marshfield Area
Milladore Area

WYOMING
Casper Aquifer Protection Network

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Groundwater Guardian Affiliates

ALABAMA
Alabama Dept. of Environmental Management

CALIFORNIA
Alameda County Water District
Mission Springs Water District
Santa Clara Valley Water District

ILLINOIS
Central Regional Groundwater Protection Planning Committee
Northeastern Regional Groundwater Protection Planning Committee
Northern Regional Groundwater Protection Planning Committee
Southern Regional Groundwater Protection Planning Committee

MICHIGAN
U.S. Geological Survey (USGS) Michigan Water Science Center

NEBRASKA
Nebraska Water Center, part of the Robert B. Daugherty Water for Food Global Institute at the University of Nebraska
U.S. Geological Survey (USGS) Nebraska Water Science Center

NORTH CAROLINA
Mecklenburg County Groundwater & Wastewater

OHIO
Miami Conservancy District
New Brockton/Coffee County AL

Sue Leverett
3 Coffee County Office Complex
1055 East McKinnon Street
New Brockton, AL 36351

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Website:

Community Profile:
Coffee County is home to 45,000 people that utilize groundwater as a drinking water source. The Coffee County Groundwater Guardian team works to prevent groundwater contamination by increasing public awareness about the importance of groundwater as a drinking water source for county residents, encouraging the protection and preservation of groundwater supplies, and instilling groundwater protection practices in students' lives.

Results Oriented Activities:
Held the annual Coffee County Groundwater Festival for 750 4th grade students and 88 teachers, volunteers and parents. At the festival, students rotated through three stations where they learned about aquifers, water pollution, filtration, and the water cycle. A groundwater poster contest was also held as part of the festival.
**Community Profile:**
A very unique environmental situation exists within the community of Greater Desert Hot Springs. The area's 30,000 residents rely on groundwater for all of their drinking water needs. Residents and visitors from around the world have the opportunity to enjoy both cold and hot water naturally occurring in groundwater aquifers. Separated by the Mission Creek Fault, the cold water aquifer supplies the Greater Desert Hot Springs Community with award-winning drinking water supplied by the Mission Springs Water District, while the hot water aquifer draws visitors to the city's renowned spas providing a tourism base. Desert Springs Middle School works to protect the community's pristine groundwater resources against contamination for its economic well-being and for future generations.

**Results Oriented Activities:**
Collaborated with local school district and the Wildlands Conservancy to provide "Desert Watersheds: From Source to Sand" field trips for 4th, 5th, 6th grade and high school students focusing on educating the students about the water cycle, desert wetland systems, and water conservation. Nearly 9,000 students and 800 volunteers, teachers, staff, and parents have participated in the field trips. Elements of Next Generation Science Standards were incorporated into the program. -- Continued to update the Mission Springs Water District's website. The updated information is available to approximately 30,000 of the district's customers.
Desert Hot Springs High School CA

Years Designated:

George Bullis
65-850 Pierson Boulevard
Desert Hot Springs, CA 92240

Phone Number: (760) 288-7006
E-mail: gbullis@psusd.us
Website:

Community Profile:
A unique environmental situation exists within the community of Greater Desert Hot Springs. The area’s 30,000 residents rely on groundwater for all of their drinking water needs. Residents and visitors from around the world have the opportunity to enjoy both cold and hot water naturally occurring in groundwater aquifers. Separated by the Mission Creek Fault, the cold water aquifer supplies the Greater Desert Hot Springs Community with award-winning drinking water supplied by the Mission Springs Water District, while the hot water aquifer draws visitors to the city’s renowned spas providing a tourism base. Desert Hot Springs High School is also a designated Groundwater Guardian Green Site, and works to protect the community’s pristine groundwater resources against contamination for its economic well-being and for future generations.

Results Oriented Activities:
Continued participation in the "Desert Watersheds: From Source to Sand" field trip program and portions of the "Creek Freaks" water curriculum were included in the visit. Nearly 9,000 students and 800 volunteers, teachers, staff, and parents have participated in this annual field trip program to the Mission Creek Preserve. Elements of Next Generation Science Standards were incorporated into the program.
Desert Springs Middle School CA

Dr. Snider
66-755 Two Bunch Palms Trail
Desert Hot Springs, CA 92240

Phone Number: (760) 251-7200
E-mail: ksnider@psusd.us
Website:

Community Profile:
A very unique environmental situation exists within the community of Greater Desert Hot Springs. The area’s 30,000 residents rely on groundwater for all of their drinking water needs. Residents and visitors from around the world have the opportunity to enjoy both cold and hot water naturally occurring in groundwater aquifers. Separated by the Mission Creek Fault, the cold water aquifer supplies the Greater Desert Hot Springs Community with award-winning drinking water supplied by the Mission Springs Water District, while the hot water aquifer draws visitors to the city’s renowned spas providing a tourism base. Desert Springs Middle School works to protect the community’s pristine groundwater resources against contamination for its economic well-being and for future generations.

Results Oriented Activities:
Continued participation in the "Desert Watersheds: From Source to Sand" field trip program. Nearly 9,000 students and 800 volunteers, teachers, staff, and parents have participated in this annual field trip program to the Mission Creek Preserve. Elements of Next Generation Science Standards were incorporated into the program.
Orange County Water District CA

Years Designated:

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Fountain Valley, CA 92708  Website: www.ocwd.com

Community Profile:
Groundwater provides 68 percent of the drinking water for the 2.4 million residents living in Orange County. However, Orange County residents are unaware that groundwater is a primary source of drinking water. In addition, groundwater education in the county is minimal, and more public outreach regarding water conservation and reuse is needed to reduce residents' dependence on imported water. Stormwater and nonpoint source pollution has recently become a threat to both ground and surface water sources. Orange County uses the Groundwater Guardian program to develop innovative methods to provide groundwater information to adults, disseminate information to the community about reliance on groundwater, and mobilize community members to participate in pollution prevention activities.

Results Oriented Activities:
Participated in various Orange County community events to distribute groundwater education and conservation materials, including corporate environmental fairs, Green Expos, elected official open houses, and more. -- Hosted the Children's Water Education Festival. This two-day annual event was attended by over 7,500 fourth, fifth, and sixth grade students. Additionally, more than 500 presenters and volunteers contributed their time and funds. Over 122,000 students have participated in the festival since its inception. -- Provided tours of and presentations about the Groundwater Replenishment System to students, teachers, elected officials, water professionals, dignitaries, and members of the public. These include information about groundwater as source water, the importance of water conservation, and how recycled water projects are vital to local water supplies. --Launched the OC Water Hero app on both Android and Apple platforms as a promotion and companion to the Children's Groundwater Festival. Through the smartphone app, kids play games and learn all about water as they navigate the water system.
**Hernando County FL**

Years Designated:

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Brooksville, FL 34613  

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**Website:**  
www.hernandocounty.us/utils/groundwater/index.asp  

**Community Profile:**
Hernando County's 174,475 residents receive 100 percent of their drinking water from local groundwater sources. The inter-relationship of karst formations, stormwater, and saltwater intrusion currently threaten the quality of the area's aquifer. The County is working to provide a sufficient, safe and adequate supply of groundwater now and for the future by developing and implementing conservation strategies countywide. Hernando County uses the Groundwater Guardian program to identify problems, concerns, threats, challenges, opportunities, and solutions and to research, identify, and implement programs and projects to restore and protect the area's groundwater.

**Results Oriented Activities:**
Continued to maintain, update and expand the Hernando County Groundwater Guardian Website, which features meeting notices, workshop dates, groundwater protection action items, and activities. Created a "stand along" news website with unique web address to enhance the conservation and protection message. The website has helped draw greater interest in the team's activities and local groundwater resources. -- Continued the Florida Friendly Landscaping program to provide public information and educational opportunities dealing with Florida-friendly lawn and landscaping practices to protect the quality and quantity of groundwater in the county. The annual workshop is broadcast on the local government broadcast channel. Workshop participants receive a $10 water bill credit for attending the workshop. -- Educated area residents on the karst sensitive nature of Hernando County's geology and hydrogeology through a series of seminars, the Hernando County Water Awareness Series 2016. The seminars are also televised on the local government channel to reach the broader community. -- Planned for a best management practices workshop for spring 2017 in coordination with local governments and the Southwest Florida Water Management District. This workshop is held every two years and targets decision makers, community leaders, developers, builders, and citizen's interests.
Boise City ID

Years Designated:

Catherine Chertudi
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Boise, ID 83701-0500

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Community Profile:
Approximately 80 percent of Boise's drinking water is supplied by groundwater. Declining water levels, groundwater contamination, drought, and increased demand are of concern. Boise uses Groundwater Guardian to energize support, knowledge and interest in protecting and conserving groundwater supplies.

Results Oriented Activities:
Continued education and outreach projects during Water Awareness Week in May, including classroom presentations, teacher training, and tours at the Boise WaterShed Environmental Education Center. Over 6,000 teachers and students were supplied with educational materials. -- Sponsored a series of water-efficient landscaping courses and tours in partnership with the University of Idaho Extension Service. The workshops provided information about water efficient landscaping, fertilizer and pesticide use, and selecting appropriate plants for the Boise area. -- Participated in a symposium to educate gardeners on reducing water and pesticide use.
City of Loves Park IL
Years Designated:

Nathan Bruck
100 Heart Boulevard
Loves Park, IL 61111

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Website: www.loves-park.il.us

Community Profile:
The 23,996 people who live in Loves Park receive all of their drinking water from local groundwater supplies. Currently, one municipal well finished in the shallow sand and gravel aquifer is at risk for groundwater contamination from several sources within the well's ten year capture zone. An abandoned landfill, numerous small businesses generating auto and industrial wastes, and a residential area with abandoned wells on most properties contribute to the possibility of contaminants reaching the drinking water supply. Loves Park uses Groundwater Guardian to develop public awareness and understanding of what can impact the quality of the city's water supply, raise awareness about water protection, and encourage businesses and residents in the capture zone to voluntarily protect their drinking water source.

Results Oriented Activities:
Held an annual Youth Groundwater Festival. Since the Festival started in 2005, over 6,500 students and parents have learned about water with various activities. To ensure the continued success of the festival, the City also makes a yearly donation.
Community Profile:
Public wells provide the 9,700 residents of Rock Falls with 85 percent of their drinking water. The chief concerns are nitrates, arsenic, VOC's and SOC's in the water. Rock Falls uses Groundwater Guardian to help educate the public about groundwater.

Results Oriented Activities:
Provided a $1,000 scholarship with the local electric department to a senior high school student. -- Provided groundwater presentations to four area schools, reaching 364 fifth grade and tenth grade students. -- Provided classes tours of the Water Department plant for 2nd grade students to learn where the city's water comes from and water treatment. -- Earned the 2017 Source Water Protection Award for Small Systems.
McDonough County IL

Years Designated:

Steve Bennett
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Western Illinois University, 1 University Circle
Macomb, IL 61455

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Website:

Community Profile:
McDonough County is home to 32,393 residents, as well as a major university, a number of small businesses, ten incorporated communities in various stages of development and excellent farmland. This great economic diversity, together with local landfill expansion, commercial animal confinement operations, and unsewered communities, combine to increase the type and number of concerns related to potential groundwater pollution. Most recently, an over-abundance of phosphate in Macomb’s reservoir has become a concern. McDonough County uses the Groundwater Guardian program to expand public education programs in order to keep the population informed about the aquifer and its vulnerability to pollution, as well as to help the public understand where their water supply comes from.

Results Oriented Activities:
Presented on groundwater and groundwater protection to a local kindergarten class. — Provided free water testing kits for coliform and nitrates to area residents as a part of Drinking Water Week. Distributed a total of 81 water testing kits at the county health department and a local farm supply store. Many residents have begun returning each year, illustrating the understanding of the need to annually test well water. — Hosted a booth with activities and distributed information and materials about preventing groundwater contamination at an Earth Day Fair and at the Western Illinois University Environmental Summit. — Held a Conservation Day, presenting information about groundwater and surface water pollution prevention to approximately 250 fifth grade students. — Installed 24 stormwater sewer medallions. sources, and recorded and posted online.
City of Carmel IN

Jaimie Foreman
4915 East 106 Street
Indianapolis, IN 46280

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Website: www.carmel.in.gov

Community Profile:
Carmel is home to over 80,000 people. Because the community relies 100% on groundwater and because the community is growing, concerns have arisen about efficient water usage and persisting drought conditions. Carmel uses Groundwater Guardian to bring awareness to the City’s Wellhead Protection Areas and spread the word about the importance of efficient water use and water conservation.

Results Oriented Activities:
Continued operating a Household Hazardous Waste Collection location, collecting materials such as paint, oil, antifreeze and more for proper disposal. -- Started a Customer Utility Academy to increase awareness of local operations and held six sessions open to the general public about topics including water distribution, billing, and wastewater treatment.-- Featured the team's involvement with the Groundwater Guardian program in the utility's annual consumer confidence report and at educational public events.
City of Elkhart IN

Years Designated:

Megan Kolaczyk
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Elkhart, IN 46516

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Community Profile:
Groundwater provides 100 percent of the drinking water to 50,000 residents living in the City of Elkhart. Several sites within the community have been included on the Superfund National Priority List due to a threat of contamination from chemicals such as TCE. These threats have caused a great deal of concern for area residents who rely on groundwater for all of their drinking water needs. Elkhart uses the Groundwater Guardian program to increase public awareness and understanding about groundwater issues, to encourage citizens to become more involved in their community and to encourage water conservation and pollution protection.

Results Oriented Activities:
Continued an Aquatic Biology program to investigate and evaluate the biological communities in the St. Joseph and Elkhart Rivers and their tributaries. As part of the program, the team monitored 17 streams at 32 sampling sites and engaged in educating the public about local fish populations, the importance of sampling aquatic life, and people's impact on water systems by attending festivals, educational events, presenting at local organizations and schools. The program collaborated with other community conservation organizations to organize a river clean up, removing 2,280 pounds of trash from the river.-- Through the stormwater program, 1,860 catch basins were cleaned.-- Published the City's annual Water Quality Report, which included information about Elkhart’s water source.-- Fifteen customers requested water conservation kits and, upon pickup, received staff instruction on the instillation and benefits of the kits.-- Drafted a groundwater overlay ordinance and submitted it for review.
Indianapolis-Marion County IN

Years Designated:

Chris Barnett
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Lawrence, IN 46226

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Community Profile:
Indianapolis-Marion County's 928,281 residents receive the majority of their drinking water from surface water supplies; however, no additional surface water supplies are available and all growth in the public water supply will come from groundwater sources. Most of the productive aquifers in Marion County are relatively vulnerable to contamination from surface spills. Two of the wellfields are located in older areas of the city with heavy concentrations of industrial and commercial land use. Indianapolis-Marion County Groundwater Guardian is committed to working with owners of potential sources of contamination to teach them best practices.

Results Oriented Activities:
Continued to identify and educate business owners in the county that might be potential sources of groundwater contamination, with a focus on identifying potential contaminant sources and engaging site owners/occupants in an educational dialogue. Approximately 19 site visits were completed as part of an ongoing face-to-face program. Business owners receive information about groundwater, best management practices, and other resources offered by the Marion County Wellfield Education Corporation. The team reported on the effectiveness of the program at the Groundwater Foundation's 2017 National Conference. -- Distributed information on a new health ordinance which will regulate ongoing operations of businesses storing, using, and handling potential contaminants. The ordinance will go into effect in January 2018. -- Distributed free pollution prevention equipment and training to 11 businesses to assist in the implementation of best management practices.
Valparaiso IN

Shaun Shifflett
205 Billings Street
Valparaiso, IN 46383

Phone Number: (219) 462-6174
E-mail: sshifflett@valpo.us
Website: www.valparaisoutilitites.org

Community Profile:
The 33,000 residents of Valparaiso are 100 percent dependent on local groundwater supplies for their drinking water needs. Current groundwater-related concerns and issues include both groundwater quality and quantity, as well as pollution prevention, road salt intrusion, and community outreach and education. Valparaiso uses Groundwater Guardian as a source of ideas and information to further the local wellhead protection program, and to become part of a network to help provide solutions to other communities with similar issues.

Results Oriented Activities:
Distributed the Annual Water Quality Report to consumers to educate on drinking water testing, and conserving and protecting groundwater. -- Distributed a calendar listing household hazardous waste collection events. The calendar was provided to all water customers and landowners in the wellhead protection area, and provides education about the proper disposal of hazardous waste to protect drinking water sources. -- Participated in an Earth Day celebration with a booth to educate the public on conservation and protection. -- Hosted National Drinking Water Week activities, which included handing out educational materials. -- Received approval of a Phase I Wellhead Protection Plan and Phase II 5-Year Wellhead Protection Plan Update in order to protect the City of Valparaiso’s public water wells.
Barnstable County (Cape Cod) MA

Years Designated:

Kalliope Egloff
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3195 Main Street
Barnstable, MA 02630-0367

Phone Number: (508) 375-6699
E-mail: kalliope@barnstablecounty.org
Website: http://www.capecodgroundwater.org/

Community Profile:
Barnstable County's sandy, permeable soils and shallow depth to the water table make its groundwater particularly vulnerable to contamination. Water resource management efforts on Cape Cod focus on maintaining high quality drinking water within wellhead protection areas, and maintaining and improving water quality in ponds, lakes, rivers, bays, and harbors around Cape Cod. Because development pressures continue to encroach upon all of these areas and because groundwater flows across local boundaries, it is important to develop and implement a regional approach to groundwater protection. Barnstable County has a population of 215,000 with 99 percent relying on groundwater for its drinking water source. Barnstable County uses Groundwater Guardian to sponsor water conservation initiatives, water festivals and other public education activities.

Results Oriented Activities:
Built a website as a reference source for all things regarding the unconfined sole-source aquifer. --Set the ground for a water-based Science Fair in Spring 2018. --Created and will continue to disperse 9 Public Service Announcements to the community regarding the aquifer.
Charter Township of Texas MI

Years Designated:
2013 | 2014 | 2015 | 2016 | 2017

Linda Kerr
7110 West Q Avenue
Kalamazoo, MI 49009

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Website: texastownship.org

Community Profile:
Groundwater supplies 100 percent of the drinking water to the 15,000 residents of Texas Township. Texas Township has many areas that are not serviced by a public waste water system so it is concerned about the impact on the aquifer. The Township is always seeking ways to protect the aquifer as it continues commercial and residential growth. Texas Township uses the Groundwater Guardian program to develop public awareness and understanding about the township’s groundwater resources, educate the citizens on the protection of its aquifers and the importance of safeguarding this valuable resource, as well as to develop a voluntary/regulatory means for protection of the groundwater supply.

Results Oriented Activities:
Held a public hearing to pass a local ordinance rezoning property within the Wellhead Protection Area. They adopted the ordinance and have finished rezoning.
City of Battle Creek MI

Years Designated:

Tiffany Welsh
150 South Kendall Street
Battle Creek, MI 49014

Phone Number: (269) 966-0712
E-mail: tawelsh@battlecreekmi.gov
Website: www.bcwater.org

Community Profile:
Battle Creek uses one prolific wellfield, the Verona Wellfield, as the drinking water source for the city's 54,000 residents. It is located in the Marshall Sandstone Aquifer, which is fractured and bordered on its east side by a railroad yard. Twenty years ago contamination was discovered in the area and linked to dry cleaning solvents and questionable storage practices. As a precautionary measure, 12 blocking wells are used to protect the city's 22 production wells, and three backup wells are located in another wellfield. Current industrial activity near the city's main wellfield is a concern. Battle Creek uses Groundwater Guardian as a resource for goal setting and public education in groundwater protection.

Results Oriented Activities:
Held the 17th annual Children's Water Festival for approximately 1,000 fourth and fifth graders. The festival helps educate students about the City's wellhead protection plan and areas of interaction of groundwater and surface water. -- Continued participation in various community events to share general information about groundwater and surface water protection, household hazardous waste, and responsible use of fertilizers and pesticides with over 2,500 people. -- Partnered with adjacent townships to pass groundwater ordinances. -- Developed and distributed a 2017 wall calendar with monthly water quality protection tips. The team also runs monthly letters to the editor in the local newspaper, radio and movie advertisements, and posted groundwater protection messages on the City's website and Facebook page.
City of Kalamazoo MI

Years Designated:

John Paquin
1415 North Harrison Street
Kalamazoo, MI 49007

Phone Number: (269) 337-8737
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Community Profile:
The City of Kalamazoo is an older, urban community with typical known and potential sources of contamination, including industrial and commercial sites. Groundwater provides all of the drinking water for the City’s 122,000 water customers. Five of the City’s 17 wellfields have had detectable levels of contamination, with two requiring air strippers to remove volatile organic compounds. The Kalamazoo Public Water Supply has 10 franchise agreements to provide water, with capture zones existing within eight jurisdictions. Currently, land use in Kalamazoo and Texas Township is managed by specific Wellhead Ordinances and Performance Standards. Kalamazoo actively participates in intergovernmental cooperation with a proactive approach to public education. Kalamazoo uses Groundwater Guardian to plan and implement non technical WHP Program projects, as well as providing project framework to focus specific efforts.

Results Oriented Activities:
Continued comprehensive public education and outreach efforts; a collaborative radio ad campaign with The City of Battle Creek Groundwater Guardian team, 12 movie trailer ads, public events, bus placards, articles, website visits, presentations to youth groups, and facility tours. The public has access to all of these resources and advertisements through the regularly updated website.
Coldwater MI

Years Designated:

Brian Musselman
One Grand Street
Coldwater, MI 49036

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Community Profile:
Coldwater's population of 10,555 receives all of its drinking water from four public wells located within a 8.2 square mile area. Protecting the water supply and continuing to encourage conservation are top priorities for Coldwater's Groundwater Guardian team. Coldwater uses the Groundwater Guardian program to bring national attention to local groundwater protection efforts.

Results Oriented Activities:
Continued a Pollution Recycling and Reduction Initiative. -- Educated elementary school children about the importance of conservation and pollution prevention. Students attended tours of the water treatment plant. -- Continued to update and improve a source water protection program and management plan for the area's drinking water supply. -- Distributed informational material with bills to water customers.
Greater Lansing Area MI

Years Designated:

Jeremy Orr
3135 Pine Tree Road, Suite 2C
Lansing, MI 48911

Phone Number: (517) 393-0342
E-mail: jorr@mitcrpc.org
Website:

Community Profile:
The Greater Lansing Area's 465,000 residents receive 100 percent of their drinking water from local groundwater resources. Currently, groundwater-related concerns are carbon sequestration, unsealed abandoned wells, urban sprawl and additional infrastructure, manufacturing and heavy industry, as well as the ongoing education and involvement of elected officials and the loss of state funding and staff for wellhead protection efforts. The Greater Lansing Area Groundwater Guardian team uses the program to encourage communication among neighboring communities and to provide education to elected officials.

Results Oriented Activities:
Updated the wellhead protection plan which focuses on wise land use, ordinance, planning and emergency response decisions, and cooperation among area communities. -- Conducted groundwater management software training for regional planners.
Michigan State University MI

Years Designated:

Ruth Kline-Robach
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East Lansing, MI 48823

Phone Number: (517) 355-0224
E-mail: kliner@msu.edu
Website:
www.orcbs.msu.edu/environmental/programs/wellhead_protection/wellhead_protection.htm

Community Profile:
Michigan State University is home to 50,000 students who receive 100 percent of their drinking water from groundwater. The majority of the campus water supply wells are located south of the main campus where the University's agricultural research farms are located. These land uses within the recharge area may pose a threat to the groundwater supply. Michigan State uses Groundwater Guardian to build support for the University's drinking water and stormwater management programs.

Results Oriented Activities:
Presented at the MSU Science Festival on water sources and the local drinking water supply to approximately 70 participants with the edible aquifers activity.
Independence MO
Years Designated:

Karen Kelley
11610 East Truman Road
Independence, MO 64050

Phone Number: (816) 325-7698
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Website: www.independencemo.org

Community Profile:
The 116,000 residents of Independence rely on groundwater for all their drinking water needs. However, the wells and treatment facility are located in an adjoining political entity so the City of Independence doesn't have control over zoning and land use. There are several high profile sites in the vicinity of the treatment plant that could possibly endanger the water supply, and public perception often focuses on these sites as a cause for concern. A wellhead protection plan is in place and a network of early warning monitoring wells are tested on a routine basis. The plan calls for public education as a component, which is fulfilled through Groundwater Guardian efforts. The Independence team uses Groundwater Guardian for ideas and solutions in local groundwater education efforts.

Results Oriented Activities:
Provided groundwater protection, pollution prevention, and water cycle education to 5th grade students from all 18 schools in the school district. Students toured the water plant, learning about the water cycle and the importance of keeping groundwater safe. Students also made edible aquifers to demonstrate groundwater contamination. Over 1,100 students participated.
Beatrice NE

Steve Kelley
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Beatrice, NE 68310

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Community Profile:
The City of Beatrice relies on groundwater for all its drinking water needs. The city is home to over 12,000 residents. Drinking water is supplied by and blended from two separate wellfields. Nitrate levels in both wellfields are a concern, and the City uses Groundwater Guardian to help educate farmers and city residents about best management practices.

Results Oriented Activities:
Held an educational training for 25 farmers with land in the wellhead protection area. Presentations included information on best management practices for irrigation. -- Held an educational training for 22 city residents about chemical use and water conservation in lawn care. Both trainings are aimed at getting residents to look at the bigger picture of groundwater protection.
Cargill Team Blair NE

Years Designated:

Michelle Bucklin
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Blair, NE 68008

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Website:

Community Profile:
Blair is a mostly rural area, home to a population of 9,000, with an emphasis on agriculture, but is also home to several large industrial facilities, including Cargill. Cargill is a large industrial user of water, and its treatment and reuse are top priorities as the water used by the plant is returned to the environment. As an agricultural partner in the farming community, Cargill supports best land management practices, pollution prevention, and water conservation/reuse. Land and water conservation and pollution prevention are some of the most important issues for this community. Cargill Blair uses Groundwater Guardian to provide educational tools and activities in local schools and participates in the Nebraska Children’s Groundwater Festival to extend its scope of beyond the local Blair community.

Results Oriented Activities:
Presented educational activities at the 2017 Nebraska Children’s Groundwater Festival. -- Presented groundwater and wastewater solutions with lab exercises to demonstrate water treatment methods and pollution prevention measures to three high school science classes.
Community Profile:
Grand Island relies on wells within the city and wells located on an island in the Platte River to supply the city's 50,000 residents with drinking water. The sand and gravel aquifer underlying the area is very porous, causing rapid recharge. While the porosity makes the aquifer suitable for well installation, any contaminants present can easily leach into the aquifer. Severe contamination from industrial solvents was discovered in 2003, as well as other pollutants in December 2004 and January 2006. Grand Island uses Groundwater Guardian to help educate local citizens about the importance of keeping contaminants out of the water supply.

Results Oriented Activities:
-presented the "Water Rockets" activity at the 2017 Nebraska Children's Groundwater Festival for over 125 students, and provided information about the city's water use. -- Worked with the local public access television station to air "The Price of Water," a documentary about the state's water resources. -- The team is working with local schools to present groundwater material at after-school programs. The team led three presentations at a summer school program for 60 students. -- Continued to work with a local school and Natural Resources District to beautify a portion of the Wood River. Native trees and shrubs were added and dead ones replaced. -- Continued to maintain an Outdoor Learning Area at Nebraska's State Fair Park in Grand Island. The learning area educates the public about water quantity and quality, groundwater stewardship, natural filtration techniques, efficient water use, and the Ogallala Aquifer. The team installed permanent signage to identify the bioswale, rain garden, prairie, and general layout of the area. The State Fair is attended by over 300,000 people annually. -- The team raised funds to implement ROAs through a United Way and Community Foundation sponsored fundraising campaign.
Keith County NE

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Community Profile:
Keith County is also home to Nebraska's largest reservoir, Lake McConaughy. While no major problems exist with drinking water, residents are concerned about nitrate levels and agricultural and domestic contaminant sources. Keith County uses Groundwater Guardian as part of its educational programs for students and community members.

Results Oriented Activities:
Presented water education events and activities at the Lake McConaughy Visitor's Center to inform students and visitors about the many competing issues surrounding water resources. Events and activities included field trips on water, birds, and mammals; a water history day for over 180 area students, educators, and parents; an outdoor education event for 200 students to learn about groundwater/surface water, hydrogeology, water properties and hydroelectric power; art adventure sessions for students to learn about science, art, and nature; hosted a booth at the National S'More Event to educate the public on clean water for wildlife, and more.
Lincoln NE
Years Designated:

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Community Profile:
Lincoln's over 250,000 residents rely on groundwater for their drinking water needs. The Platte River provides most of the recharge for the city's water supply near Ashland. Maintaining quality water to sustain the community, especially during warm weather months and/or drought conditions is currently a major concern. The continued growth of Lincoln also requires the city to continue long-term water conservation programs. Lincoln uses Groundwater Guardian in combination with the Mayor's Water Conservation Task Force and the Mayor's Environmental Task Force to educate and inform the public to help them conserve water and better utilize it using best management practices.

Results Oriented Activities:
Sponsored an annual citywide water conservation poster contest for approximately 325 5th grade students. The winning ten "Be Water Wise" posters were featured on the city website, on bookmarks distributed to local city libraries, billboards, and busboards. -- Continued to update and expand the City's website to include additional information about water conservation and team projects. -- Continued to provide speakers for a water conservation Speakers Bureau. -- Participated in Earth Wellness Festival where 5th graders circulate through hands-on workshops covering topics such as: water, land, air, and living resources. -- Assisted several state agencies to develop a drought contingency plan in the Lower Platte River region.
Village of Trenton NE

Years Designated:
2013|2014|2015|2016|2017

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Community Profile:
Groundwater provides all of the drinking water for the 560 residents of Trenton. Two new wells provide excellent high quality water to the community, and the Groundwater Guardian team plans to reinforce citizen awareness regarding their drinking water and its protection. The new wellfield has been enrolled in the Conservation Reserve Program (CRP), with some additional private land also enrolled in CRP for wellhead protection. Trenton uses the Groundwater Guardian program to encourage water conservation in all areas of water use.

Results Oriented Activities:
Maintained the Village wellfield's involvement in the Groundwater Guardian Green Site program to ensure best practices around the City's wells. -- Conducted an annual survey among residents about changes in plumbing connections in order to prevent backflow.
Las Vegas Valley NV


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Community Profile:
The Las Vegas Valley hydrographic basin has been over-appropriated since 1955 and the area’s population of two million continues to grow. The declining water table has caused well failures and higher pumpage costs for public and private well users. In 1997 the Nevada Legislature authorized the Southern Nevada Water Authority to establish a Groundwater Management Program and the Advisory Committee for Groundwater Management. The Groundwater Management Program uses Groundwater Guardian to promote the importance of protecting groundwater supplies from contamination, as well as informing well users about important groundwater issues.

Results Oriented Activities:
Continued the Well Conversion Grant Program, which provides financial assistance to well users wishing to connect to a municipal water system. Over 500 businesses and households have utilized the program since it began in 1999. -- Provided financial incentives to homeowners who replaced turf with water smart landscaping, such as drought tolerant plants and trees. Since the program's inception in 2002, 719 conversions have been completed, converting a total of more than 1.8 million square feet of turf to water-smart landscaping. Water meters are also offered to help monitor usage, distributing 402 meters and 208 installation rebates to well owners since 2008. -- Provided funding to plug unused and abandoned wells. More than 700 unused wells have been closed as a result of the program. -- Continued to hold an Advisory Committee meeting to provide recommendations for the activities of the Groundwater Management Program. -- Held an annual public workshop for private well owners.
Merrimack NH

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Community Profile:
Because groundwater supplies 100 percent of the drinking water needs for Merrimack’s 26,600 residents, keeping up with water demand throughout the town’s new construction is a concern. Keeping the public aware of groundwater and wellhead protection, as well as levels of iron, manganese, sodium, and chloride in District wells, are top priorities for the community. In addition, the Groundwater Guardian team wants to emphasize wellhead protection, education of the community and especially town officials.

Results Oriented Activities:
Participated in a Water Festival to educate over 400 fourth grade students through presentations, exhibits, and hands-on activities. Water-related science fair projects made by students were also presented. -- Because of concern over rising levels of sodium and chloride levels in community wells, certain streets were targeted as no salt/low salt areas during snow removal. The Village will continue to monitor salt application throughout the coming winter, and work to educate local businesses about salt use and alternatives to salt for de-icing. -- Educated and involved the community in negotiating funding to build a treatment plant for public wells that have been shut down due to PFC contamination.
Moodna Watershed Intermunicipal Council NY

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Community Profile:
Approximately half of the population of the Moodna Creek watershed rely on groundwater for drinking water from many different sources, including tributaries, sand and gravel aquifers, and bedrock aquifers. The community is very concerned with preserving water quality in the face of intense growth. The Moodna Watershed uses the Groundwater Guardian program to educate the public about potential threats to water quality.

Results Oriented Activities:
Participated in the Orange County Water Authority Children's Earth and Water Festival, hosting a table with watershed and general water resources information. -- Hosted guest speakers at quarterly Council meetings that addressed water resource issues in the Moodna Creek and Hudson River Watersheds. -- Monitored the Moodna Creek and four tributaries. The information gathered is used to educate and demonstrate projects to the public and municipal officials about watershed problems and possible solutions.
Town of Wallkill NY

Years Designated:

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Community Profile:
The 15,500 people who live in Wallkill receive all of their drinking water from local groundwater supplies. Wallkill's main wellfields are along the Wallkill River and subject to potential contamination from an urban setting. The Town wishes to continue to protect its groundwater by educating its citizens about groundwater protection options and water conservation. Wallkill uses the Groundwater Guardian program in its education and wellhead inspection programs.

Results Oriented Activities:
Prepared and distributed the Annual Water Quality Report to water customers and the Department of Health. The report included information for water customers to learn more about water conservation and groundwater protection. -- Continued to air public service announcements about water conservation and wellhead protection on local cable television. -- Continued implementation of the Stormwater Phase II requirements, with an emphasis on education and outreach and public involvement, to reduce pollution from stormwater discharges into streams. -- Hosted a Groundwater Night to educate the community about groundwater concepts, including geology, and the community's water resources.
Mecklenburg County NC

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Community Profile:
In Mecklenburg County, population 990,977, approximately 15 percent of homes and businesses rely on groundwater as their drinking water source. Most of the people access groundwater through private and neighborhood wells. Mecklenburg County is in an urban area and has almost 1,500 known groundwater/soil sites of contamination. It is important to protect the groundwater as a safe drinking water source and to identify areas where it is not safe to drink. Mecklenburg County uses Groundwater Guardian to participate in community events that provide opportunities to educate the public about the groundwater system.

Results Oriented Activities:
Held a booth at a citywide, public information event for 929 realtors to provide information and education on groundwater resources, private wells and septic systems.
Orange County NC

Years Designated:
2014|2015|2016|2017

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Community Profile:
Approximately 37 percent of the drinking water needs for Orange County's 140,000 residents are met by local groundwater supplies. The County is working to proactively address the quality and quantity of local groundwater supplies, including radon and arsenic concentrations. In general, the County's groundwater is of acceptable quality, though concerns exist over the availability of groundwater, especially during periods of drought. Orange County uses Groundwater Guardian in local public education and awareness efforts.

Results Oriented Activities:
Participated in various community events and activities to educate the public about the importance of groundwater. Information about local groundwater issues was distributed, and groundwater model presentations were given to demonstrate groundwater movement. -- Continued collecting data for a groundwater observation well network, Orange Well Net (OWN), to monitor groundwater levels across the county. The network serves as a drought monitoring tool with an early warning system for declining groundwater levels. Groundwater levels are currently collected every hour in 13 wells, and the information is available to the public via the North Carolina Division of Water Resources website.
Community Profile:
The Brown County Rural Water Association is a rural water system relying completely on groundwater, with wells over 70 feet deep tapping into the Ohio River Aquifer. This aquifer is highly susceptible to contamination, due to the sand and gravel composition of the aquifer and its proximity to potential contaminant sources. Specific contamination concerns include septic tanks, agricultural chemicals, highway traffic, and potential gravel mining operations. One production well was contaminated by VOCs in 1996. A pump-and-treat remediation system was installed as a result, and the aquifer has been restored to the point that no detectable contaminants were found. The lessons learned from this experience were great, none more important than the value of groundwater pollution prevention. Brown County is home to 25,000 people, and uses Groundwater Guardian to educate the public about the importance of protecting groundwater resources and to instill a sense of ownership of the well fields in community residents.

Results Oriented Activities:
Continued implementation of a long-term wellhead protection management plan, which has been approved by the Ohio EPA. The plan was created to ensure a long-term, easy to follow and implement plan to manage the area to ensure groundwater is protected. Participation in Groundwater Guardian is included as part of the plan. -- Held regular wellhead protection committee meetings for local groundwater users. The meetings address local and national environmental issues and regulatory updates. -- Continued to update and maintain a website for the Brown County Rural Water Association and Groundwater Guardian team. The site includes links to federal, state, and local groundwater sites, as well as information about wellhead protection efforts, water treatment, and public education. -- Adopted a section of highway US 52 between White Oak Creek and Straight Creek for quarterly cleanups. This section of the highway is near community wellfields and is part of the wellhead protection area.
Community Profile:
The City of Dayton taps a sole source aquifer for 400,000 water consumers. Hundreds of businesses with 175 million pounds of hazardous materials operate near the wellfields. Over 17 million pounds of hazardous materials have been permanently removed from the Source Water Protection Area by financial incentives. Dayton, Huber Heights, Riverside, Vandalia, Harrison Township, and Wright-Patterson Air Force Base initiated a wellfield protection program using overlay zoning, monitoring, emergency response and financial incentives for risk reduction activities. Each jurisdiction has at least one person assigned to monitor compliance with the Source Water Protection Program. The Dayton Multi-Jurisdictional Source Water Protection Program uses Groundwater Guardian to increase citizen awareness of the wellfield protection program, establish a risk assessment program for businesses handling chemicals, provide groundwater and environmental education for children and the general public.

Results Oriented Activities:
Continued to manage and oversee contracts for Multi-Jurisdictional Economic Development Specialists, Fire Prevention Inspector, Risk Assessment Consultant, Risk Assessor, and Environmental Specialists authorized by the Wellfield Protection Board, which promotes groundwater-friendly economic development of the area. -- Held the 21st Annual Children's Water Festival, which was attended by 1,700 fourth grade students. It featured presentations, entertainers, mascots and outdoor activities focused on groundwater, surface water, pollution prevention, wetlands, and recycling. -- Participated in a Water Career Conference for approximately 200 high school juniors and seniors to learn about careers in the water industry. -- Enhanced Source Water Protection Strategies including the distribution of educational resources to businesses and communities and initiating a Lunch & Learn program for employees and businesses inside the Source Water Protection Area. Other measures include increasing groundwater monitoring, risk assessments, and enhancing geology of the area in order to protect the quality and flow direction of the groundwater. -- Supported the City of Dayton's resolution to encourage regional sustainability by promoting Green Site Designation and Blue-Gold Certification to businesses in the source water protection area. -- Promoted pollution prevention practices at business inspections in the source water protection area.
Hamilton to New Baltimore OH

Years Designated:

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Community Profile:
The Hamilton to New Baltimore Groundwater Consortium is made up of the cities of Cincinnati, Fairfield, Hamilton, the SW Regional Water District, the SW OH Water Co. and MillerCoors LLC, and includes a population of 315,000. The Consortium wells are interrelated physically and directly influence the capture zone size of each system’s wells. The Wellhead Protection (WHP) Area consists of a sand and gravel buried valley aquifer overlain by a densely populated industrial community. The majority of the wells behave hydrogeologically as a collective wellfield yet politically are separate. The characteristics that make it a productive source of drinking water are the same characteristics that make it susceptible to pollution from USTs, general chemical handling, dry wells, and improperly abandoned wells. The Consortium uses GG to inform the public about protecting groundwater resources, teach a basic understanding of what groundwater is and how human activities may affect its quality, and instill a sense of ownership of the wellfields and understanding that protection is necessary and worthwhile for the community.

Results Oriented Activities:
Continued administration of the area’s Source Water Protection Program. The Consortium worked with communities to update their ordinances, as well as businesses in new time of travel zones. -- Continued to update and maintain the local Source Water Protection Program website, with updated event information and photo galleries. A Facebook page also shares information about events and other program activities. -- Held a cleanup of a 17 mile stretch of the Great Miami River with over 300 volunteers. -- Held the 18th Butler County Water Festival, attended by over 1,000 4th, 5th, and 6th grade students. Over 80 volunteers and 37 presenters made this event a success - distributing supplies and giveaways to educators. Students learned about collecting groundwater data with an onsite well. -- Added Facebook and Twitter accounts to keep volunteers and the public informed about events and updates regarding the Consortium. -- Updated banners with the Groundwater Guardian logo at water plants and supply centers within the Consortium. -- Distributed a newsletter to the community to share information about groundwater protection in the area including program activities and updates. -- Offered assistance to help two businesses apply for Groundwater Guardian Green Site designation. -- Held an Earth Day event in downtown Hamilton attended by over 1,000 people. Attendees learned about groundwater protection and pollution prevention with a groundwater model demonstration. --
Continued to utilize a mini drinking water tower at community events to provide attendees with water, promoting the use of tap water and decreasing the use of bottled water. -- Held the 7th annual 5K Race and Fun walk to raise money for Water For People, an organization working globally to provide access to safe, clean water. -- Worked with volunteers from MillerCoors to clean and paint 95% of wells in Hamilton to New Baltimore’s network. Groundwater protection and stewardship messages are shared with the volunteers. -- Held a Butler County Soil and Water Educational Field trip for over 50 volunteers and participants. -- Developed signage to be installed along bike trails to raise awareness about the local aquifer, groundwater protection, and conserving energy through wise water use.
Community Profile:
The WPAFB community is concerned with the quality of the base’s drinking water for its population of 27,000. This concern is due to the number of landfill contaminants that have been found throughout the base. Extensive remediation has been accomplished; however, it has been difficult to change perceptions. Wright-Patterson uses the Groundwater Guardian program to develop and provide public awareness programs regarding the remediation of landfill contaminants, as well as implement a wellfield protection program to prevent possible groundwater contamination.

Results Oriented Activities:
Continued to maintain an up-to-date potential contaminant source inventory that identifies whether initial storage limits are exceeded and prevents the introduction of contaminants to the wellfield protection areas as part of a memorandum of understanding for the City of Dayton wellfields. -- Investigated seven former underground storage tank sites and one former oil/water separator sites to ensure no contaminants of concern are found. -- Participated in the City of Dayton's Annual Children's Water Festival as presenters and volunteers. The festival reached approximately 2,000 Dayton area students. -- Provided educational outreach programming to promote environmental awareness. Events were held during the week of Earth Day and news articles were printed in the air force base newspaper. -- Continued monitoring underground storage tanks.
Southern Willamette Valley Groundwater Management Area
OR


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Community Profile:
A reconnaissance study done by the Oregon Department of Environmental Quality (ODEQ) in the 1990s and early 2000s indicated that private and public wells within the Southern (Upper) Willamette Valley were experiencing nitrate contamination. The area is home to approximately 21,000 people who receive 85% of their drinking water from groundwater. In 2004, the ODEQ declared the area as a groundwater management area. Oregon law requires that such a declaration be accompanied by the development of an action plan to reduce the contamination. This action plan must be developed by a committee representing local stakeholders and was completed in late 2006. This community will use the Groundwater Guardian program to focus on a select few of the implementation of strategies indentified in the action plan.

Results Oriented Activities:
Worked with area farmers in the groundwater management area to test for nitrate leaching below the root zone of the crops. As part of this study, a nutrient management workshop was held. Fact sheets about the study and workshop were created to increase public awareness. -- Assessed existing outreach and education efforts to understand and improve upon how nitrate risk is being communicated.
Springfield OR

Years Designated:

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Community Profile:
Springfield’s wells are distributed throughout the city and surrounding residential, agricultural, commercial and industrial land use areas. Groundwater supplies 90 percent of the city's 56,000 residents' drinking water needs. Some wells are in or adjacent to areas where leaks and spills have caused groundwater contamination, and these plumes are being tracked and some undergoing bioremediation. Springfield uses Groundwater Guardian to help publicize the city's reliance on groundwater and the contamination risks faced, support educational programs in schools, participate in local organizations and support ordinances that help reduce the risk to drinking water supplies.

Results Oriented Activities:
Worked with high school students to test water from over 100 private household wells to provide community members free well water sampling, alerting them to potential contamination issues and the importance of preventing contamination. -- Continued the Cedar Creek Project, which involves 75 students, 10 teachers, and many community members in a multi-faceted approach to monitoring and restoring the Cedar Creek basin and illustrating the connections between groundwater and surface water. This year students will focus on analyzing current data and making comparisons to historical data. -- Continued to update and revise a plan for enhancing current groundwater education activities, focusing on ways the team can educate and inform the public about Springfield’s groundwater supplies. -- Continued an inspection program to inspect approximately 50 stormwater quality facilities like bioswales and retention ponds. The program helps educate residents and business owners about the hydrologic connection between stormwater and groundwater in Springfield. -- Obtained a two year extension for a best management practices manual on pesticide application in order to redefine the scope of area and effectiveness of the BMP over a broader location.
**Buhl Community Water PA**

Years Designated:

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**Community Profile:**
Groundwater is the sole source of drinking water for the 1200 residents served by Buhl Community Water. Some of the groundwater-related concerns for this area include building public awareness and education, pollution prevention and conservation. The Villages use the Groundwater Guardian program to educate residents about the importance of groundwater protection through a variety of public information activities.

**Results Oriented Activities:**
Continued local groundwater education and outreach efforts in the wellhead protection area through providing disposal options for potential contaminants.
Keystone Clean Water Team PA

Years Designated:

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Community Profile:
4.5 million of the 12.7 million people in Dallas receive their drinking water from groundwater supplies. Currently, the lack of private well standards and testing is a concern. Keystone Clean Water Team will use Groundwater Guardian to legitimize the group's efforts and empower local grassroots approaches.

Results Oriented Activities:
Participated in educational training sessions for high school students on topics related to conservation and energy and community meetings regarding groundwater resources and private wells. -- Finalized edits to an easy-to-read guide for private well owners, including information on drinking water standards, water treatment, basic water treatment, how to maintain a well, proper well construction, and oil and gas development and subsurface mining.
Shrewsbury Borough PA

Years Designated:

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Community Profile:
Shrewsbury Borough, with a population of 3,800, has all of its drinking water supplied by groundwater. It is currently dealing with the costs and fees related to current regulations, and uses Groundwater Guardian for educational resources and to learn more about regulations that may affect the Borough's water supply.

Results Oriented Activities:
Submitted pump test data to the Susquehanna River Basin Commission to update the community's well permit and included wellhead protection information to communicate the preventative measures in place against harm to the groundwater system. -- Monitored development in the wellhead protection area, including working with a medical facility to ensure wellhead protection requirements are met and stormwater discharge is compliant. -- Set an ordinance to help properly close and abandon private wells after citizens connect with public water. -- Made GIS mapping of Wellhead Protection Areas available to the public and provided maps to developers seeking information.
Washington County PA

Years Designated:

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Community Profile:
Groundwater provides 45 percent of the drinking water to the area’s 208,716 residents. Current threats to groundwater include possible impacts from development of natural gas resources in the Marcellus Shale formation, particularly in the quality of well water, and the impact of urban and suburban development on groundwater. Washington County uses Groundwater Guardian to continue public education efforts in local schools and for the general public.

Results Oriented Activities:
Continued stream monitoring efforts at 24 sites throughout the county. Water level, conductivity, and temperature are recorded every 15 minutes. These monitoring efforts in concert with public outreach and education help reduce pollution and improve water quality. Monitoring efforts also provide information on how groundwater influences the streams as most of the county’s streams are groundwater-fed.
North Kingstown RI

Years Designated:

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North Kingstown, RI 02852

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Website:

Community Profile:
The 26,296 people who live in North Kingstown rely on groundwater for all of their drinking water needs. Currently the community is concerned about the potential for bacterial contamination, as well as wastewater management and continued development. North Kingstown uses Groundwater Guardian as a component of various education programs.

Results Oriented Activities:
Continued a public education initiative to educate the citizens of the community about the benefits of good wastewater management, stormwater management, and appropriate groundwater protection policies. Citizens were reached through press releases, mailings, and public forums. The team also reached all third grade students in the community with the message of groundwater protection. -- Held events to educate the public on pollinators' role in maintaining a healthy environment and how to create habitats for pollinators from irrigated, fertilized, or mowed yards to not only aid pollinators but also protect groundwater. Also installed a number of public pollinator habitats.
Memphis and Shelby County TN

Years Designated:
2012|2013|2014|2015|2016|2017

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Community Profile:
Shelby County's residents draw 100 percent of their drinking water from the largest public artesian water supply in the U.S. Protecting the purity and quality of this groundwater supply is imperative. In 1987, for the first time, one of the water wells used to supply public water showed traces of chemical contamination. At approximately the same time, wells in a smaller municipality were contaminated with TCE which had spilled at a nearby manufacturing facility several years earlier. The contamination of these wells revealed that the depth of the aquifer and its confining strata would not act as a barrier to the downward migration of the variety of chemicals generated by an urban society. Memphis and Shelby County use Groundwater Guardian to develop a comprehensive aquifer protection and conservation education program and conduct annual regional conferences about groundwater issues.

Results Oriented Activities:
Sampled and tested approximately 423 quasi-public wells located within Shelby County and 150 newly-installed residential wells for various contaminants. -- Continued the Well Survey Program. Performed 51 well surveys and 9 abandoned wells were closed. -- Performed 161 site inspections of 150 new water wells to verify construction standards are met. -- Reviewed all applications for proposed installation of remediation systems at sites throughout Shelby County. Issued 186 permits for remediation efforts and performed 49 site inspections. -- Provided a presentation on the value of water resources and the Memphis Sand Aquifer for use by the Ground Water Quality Control Board members for presentations to rotary clubs, schools, and other community groups. -- Reviewed 305 site plans and inspected 39 sites before new development was allowed in the aquifer recharge area. Four abandoned wells were located as a result, and properly filled before construction activities began. -- Continued to utilize GIS to map areas with the greatest concern in relation to the Memphis Sand Aquifer. Twenty-two GIS projects were completed that dealt with the protection of the water-bearing aquifers of Shelby County and other health-related issues. -- Sealed 28 abandoned water wells within Shelby County. -- Maintained a permanent collection site for Household Hazardous Waste. -- Continued age-dating of local groundwater. Continued sampling and testing indicate no modern water is entering the Memphis sand aquifer. -- Properly abandoned 281 unused monitoring wells. -- Made 197 site inspections to properly site 130 subsurface sewage disposal systems within Shelby County.
North Plains Groundwater Conservation District TX


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Community Profile:
Groundwater depletion is the major concern for the eight counties within the North Plains Groundwater Conservation District. This region is home to over 71,000 people who utilize groundwater for 100 percent of their drinking water. Lack of recharge in this part of the Ogallala Aquifer indicates groundwater mining, and teaching water conservation and raising public awareness is a major goal of this District. Rules are now in place that regulate the amount of groundwater that can be pumped by well owners each year and that limit the proximity of new wells to existing wells. As a Groundwater Guardian Community, the District offers education to the public through outreach programs.

Results Oriented Activities:
Held a water festival for local students. Since 2005, approximately 9,080 students have been reached with messages about water protection and preservation. -- Held a day-long class on water-wise gardening and xeriscaping in partnership with local Master Gardeners for 95 residents. -- Continued distribution of the "Major Rivers" water conservation curriculum to 4th and 5th grade teachers and their students in the District. The curriculum educates students about their water resources and their role in protecting and conserving them. -- Sponsored a water conservation artwork contest for 4th-6th graders in District counties. Winning entries are featured in a water conservation calendar provided free to the public, given away to hundreds of people each year. -- Gave classroom presentations to approximately 550 students in all age levels, from K-12 in eight counties. -- Presented information on the Ogallala Aquifer and the need for conservation to fourth grade students attending the Farm Bureau Ag Fairs in eight district counties. -- Continued a demonstration project to show how the latest irrigation management strategies and technologies reduce water used for growing corn. The project is aimed at showing producers how their efficient use of water can help them maximize their return on investment while preserving water for the future. Corn irrigation uses 63% of the groundwater pumped in the District. -- Continued the "Operation: Summer Showers" public relations campaign to help residents reduce their water use, particularly during the summer months. Conservation kits were distributed in cooperation with water utilities in each county. The program was promoted through radio and newspaper public service announcements. -- Educated 5th graders about water conservation and water saving techniques. -- 60 individuals completed the Master Irrigator Program, a 32-hour intensive educational program for producers to learn irrigation management and conservation practices that work together to save water, conserve energy, and build healthy soil.
Calumet WI

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Community Profile:
Calumet County's 45,995 residents draw 90 percent of their drinking water from the local aquifer. Historically, test results from approximately 20% of private wells show unsafe levels of bacteria and nitrates. The county is especially sensitive to groundwater contamination from shallow soils overlying fractured dolomite bedrock and moderately developed Karst topography. The magnitude of current water quality problems indicate that multiple sources and land use activities are affecting groundwater supplies. Calumet uses Groundwater Guardian to increase awareness of groundwater problems, educate the public about land use and conservation practices, expand existing educational efforts to reach new audiences and build trust and relationships with community members and other citizen action groups.

Results Oriented Activities:
Provided scholarship to two local middle school students to attend the Sand Lake Conservation Camp. To date, 19 students have attended camp on scholarship. The camp provides positive, educational outdoor experiences.-- Assisted in a water sampling event for area residents to help create awareness of the importance of annual water well testing. Approximately 84 wells were sampled and tested for bacteria, nitrate, and arsenic, and 59 attended an educational event as part of the effort. Test results are used to monitor groundwater quality for program planning, development, and implementation. -- Worked with local volunteers to conduct monthly water monitoring. -- Participated in a statewide event that trains volunteers to identify invasive species, setting up volunteers at 10 sites. -- Introduced water quality and aquatic wildlife curriculum to 131 students and 9 teachers with hands-on monitoring efforts. Students learned about land use and water pollution and groundwater and surface water's connection. -- Continued and expanded the Water Action Volunteer Monitoring program where 6 Groundwater Guardian team volunteers, 90 students, and 2 teachers have participated to protect local water quality.
Chippewa Falls WI

Years Designated:
2014 | 2015 | 2016 | 2017

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Chippewa Falls, WI 54729

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Community Profile:
The 13,682 people who live in Chippewa Falls use groundwater for all of their drinking water needs. The City of Chippewa Falls obtains its water supply from wells located in a shallow sand and gravel aquifer. These wells are in wellfields with the majority of the zone of contribution area outside city boundaries. Nitrate, iron, and manganese levels are a concern, along with the strong probability that over 425 acres of agricultural land in the zone of contribution will soon be developed for industrial, commercial and residential uses in the next five to ten years. Chippewa Falls uses Groundwater Guardian to educate residential, business and agricultural landowners.

Results Oriented Activities:
Staffed booth at Northern Wisconsin State Fair, attended by over 90,000 people. Various educational materials were distributed and two rain barrels were given away. -- Demonstrated an aquifer recharge model with pollution and distributed Groundwater Guardian bracelets and groundwater information to 300 fifth grade students at State Park Conservation Days. -- Hosted the Safe & Green Sweep Project to collect and properly dispose of expired and unwanted pharmaceuticals. -- Preparing radio public service announcements for groundwater protection and conservation. -- Working to create an educational resource area at a riverfront park to include a natural science walk. -- Purchased materials to prepare catch basin indicators to alert people to drainage pathways.
Kewaunee County WI

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Website:

Community Profile:
Over 75 percent of the land is Kewaunee County is dedicated to agriculture, making the preservation of a clean, safe water supply for the public a top priority for the team. Recent private well testing indicates the presence of nitrates and bacteria, which has not only raised awareness but prompted well owners to become involved with the Groundwater Guardian team. The team is working to become a sustaining informational and educational, neutral organization that informs the public regarding potential groundwater contamination hazards. Kewaunee County, with a population of 20,648 relying more than 70 percent on groundwater for drinking water supplies, uses Groundwater Guardian to educate the public about potential private well contaminants through well testing programs, school programs and local event booths.

Results Oriented Activities:
Assisted the Kewaunee County Land & Water Department in collaboration with the University of Stevens Point in a private well testing program. Team members tested 93 wells (almost half of which were new or had never been tested) and worked with well owners on proper well water sampling and the importance of regular private well testing; the wells were tested for coliform bacteria and nitrates, mapped, and documented. An informational seminar was held to discuss results, which was attended by 140 people. -- Created and sold 62 rain barrels as a fundraiser for the team's groundwater education activities.
Marshfield Area WI

Years Designated:

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Marshfield, WI 54449

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Community Profile:
The 20,000 residents of the Marshfield area receive all their drinking water from local groundwater supplies. Marshfield's municipal wells are shallow (50-90 feet deep) and exist in narrow, confined bedrock channels. Domestic and farm wells are low yielding wells drilled into fractured rock. Top soil consists of 8 to 10 feet of tight clay soils, which limits recharge. Marshfield uses Groundwater Guardian to promote education and awareness of the need for groundwater protection.

Results Oriented Activities:
Continued to educate residents about the efforts of the Marshfield Groundwater Guardian program and projects to generate interest in the group’s efforts and recruit new team members. An ad runs on the local AM and FM radio stations monthly, as well as on the Utility’s telephone system. -- Continued the Rx Round-Up Pharmaceutical Take-Back Program. A permanent site has been established for residents to take their unused/expired pharmaceuticals for proper disposal through incineration. Since the program began in 2006, 11,204 pounds of pharmaceuticals have been collected. -- Held a groundwater education event for 30 Girl Scouts to earn their second groundwater patch.
Milladore Area WI

Years Designated:

Arnold Mancl  
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Website:

Community Profile:
The Village of Milladore and the Towns of Eau Plaine and Milladore make up the Milladore Area, with a population of approximately 2,000 people. This area relies solely on groundwater for all its drinking water needs. Testing has indicated the presence of bacteria in drinking water, and nitrate levels have been a concern. The Milladore Area Groundwater Guardian team uses the program to educate the public and youth about keeping groundwater a priority in their everyday lives.

Results Oriented Activities:
Conducted a drug take back collection and pill sorting every six months and works with the Marshfield Area Groundwater Guardian to distribute information about groundwater conservation and protection programs.
Casper Aquifer Protection Network WY

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Website:

Community Profile:
The Casper Aquifer Protection (CAP) Network is made up of private well owners located in or near the Casper Aquifer Protection Zone, and includes roughly 1000 people that depend on groundwater for all their drinking water needs. While there are no serious problems with the area's groundwater supply, Network members want to educate rural property owners about ways they can protect groundwater quality through wellhead and septic tank maintenance, regular water quality testing, the use of best management practices, and environmental awareness. The CAP Network uses Groundwater Guardian to provide information to property owners in the community.

Results Oriented Activities:
Presented a Groundwater Guardian year plate to the Albany County Board of Commissioners to recognize its efforts to protect the Casper Aquifer through policy decisions. -- Created and distributed a newsletter to approximately 250 members. The newsletter focused on information pertaining to well pump replacement, chlorinization to protect groundwater, and an explanation of measuring water levels via airline and the benefits of pump replacement. -- Participated in a local Fourth of July celebration to provide information to the public about the geology of the Casper Aquifer, groundwater protection including contamination prevention, well and septic system maintenance, and more. The team used an interactive display to test participants' knowledge of small, onsite wastewater systems. -- Presented data from the Casper Aquifer Protection Network's water sampling program to the County Commission and the County Planning and Zoning Commission, showing the high quality of groundwater and the overall health of the Casper Aquifer.
Alabama Department of Environmental Management AL

Years Designated:

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http://www.adem.state.al.us/programs/water/default.cnt

Community Profile:
Mission: To provide technical, financial and program support to communities and utilities throughout the state regarding groundwater protection and assessment. Service Area: The State of Alabama.

Results Oriented Activities:
Continued to work to recruit new communities into the Groundwater Guardian program by contacting communities that hold Groundwater Festivals. -- Assisted with the state's Groundwater Festivals program by helping find funding and providing support to add to the counties in Alabama with active festival programs. Approximately 21,500 students have attended 26 Groundwater Festivals around the state. -- The annual Alabama Groundwater Conference was attended by 111 people, including regulators, academic researchers, utility personnel, and environmental consultants. -- Continued to provide technical assistance with Source Water Assessments and Local Wellhead Protection programs. Three Source Water Assessments have been reviewed.
Alameda County Water District CA

Community Profile:
Mission: To manage and protect the Niles Cone Groundwater Basin and ensure a reliable supply of high quality water that satisfies present and future uses of the service area at a reasonable cost. Service Area: The cities of Fremont, Newark and Union City; a 104.8 square-mile area with a population of over 340,000.

Results Oriented Activities:
Continued education and information support in area schools and communities. Sponsored 61 performances by ZunZun's water theater program at 38 schools to over 15,000 students stressing the importance of groundwater. 39,000 pieces of printed educational materials were provided to teachers and students. The District also worked with ten Advanced Placement environmental sciences classes to provide more in-depth information about water resources. Pamphlets and brochures explaining the importance and benefits of groundwater protection, pollution prevention and water conservation methods were distributed at public events as well as in water bill inserts. -- Updated content on the District website with additional information about the groundwater basin, District programs, Groundwater Guardian, and Groundwater Awareness Week. -- Continued to implement an ordinance to regulate wells, exploratory holes, and other excavations in district communities. -- Worked to digitize over 15,000 well permits, 3,500 well completion reports, well location maps, and other historical documents to further reconcile well location information, locate abandoned wells and evaluate their potential to negatively impact the groundwater basin.
Mission Springs Water District CA

Years Designated:
2014 | 2015 | 2016 | 2017

John Souliere
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Community Profile:
Mission: To provide, protect, and preserve our most valuable resource - water. Service Area: The district operates three separate water distribution systems and two separate wastewater collection and treatment systems, serving Desert Hot Springs, 10 smaller communities in Riverside County, mobile home parks, resorts and a small portion of Palm Springs. The District was incorporated in February 1953 as a County Water District and is now a Special District of the State of California. The service area includes 135 square miles and over 25,000 people.

Results Oriented Activities:
Continued to provide support to the Desert Hot Springs Groundwater Guardian team in the form of office storage, operating space, administrative support and technical support. -- Provided $30,000 in funding to support the various groundwater protection and education activities of the Desert Hot Springs Groundwater Guardian team.
Santa Clara Valley Water District CA

Years Designated:

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Community Profile:
Mission: Aggressively protect the groundwater basin from contamination and the threat of contamination, and ensure groundwater supplies are sustained. The District manages Santa Clara County’s wholesale drinking water resources, coordinates flood protection, and provides stewardship for the county’s 10 reservoirs and more than 700 miles of streams. Service Area: Santa Clara County, a 1,300 square mile area with a population of over 1.8 million people.

Results Oriented Activities:
Continued a water conservation program, which included thousands of rebates for water-efficient water fixtures in homes and businesses, free "Water Wise House Calls" to check for leaks and install free showerheads and aerators, free landscape surveys to help large landscape managers become more water efficient, and extensive outreach and education. In 2017, the District issued rebates for/or installed 677 high efficiency toilets, funded over 869,000 home water use reports, and issued 82 landscape rebates. The program saved an estimated 70,000 acre-feet of water, which is more than 15% of the total water used in the county. -- Continued a groundwater management program that provides services to well owners and groundwater users in the county, including offered free basic water quality testing (sampled 214 wells for nitrates and bacteria), sampled 87 monitoring wells to include data in annual reports, commemorated Groundwater Awareness Week through a information on the District website and social media, distributed a groundwater quality report to all well owners, and continued a rebate program for the installation of point of use treatment systems for domestic wells with elevated nitrate. -- Continued an educational outreach program, making classroom presentations, giving tours, and training teachers. 17,057 students and 638 educators were involved during the 2016-2017 year. Staff conducted tours of the water district's outdoor classrooms and the water purification center. The Youth Stewardship Commission is comprised of 28 high school students and discuss water resources and management of the local water supply. -- Participated in two water and harvest festivals and hosted informational booths at a number of local community events.
Central Regional Groundwater Protection Planning Committee  
IL  
Years Designated:  

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Community Profile:  
Mission: To develop and implement local programs aimed at preventing groundwater contamination. The organization attempts to do this by educating adults and children about risk factors and methods of pollution prevention. Service Area: Central Illinois, including Mason, Peoria, Tazewell and Woodford Counties.  

Results Oriented Activities:  
Continued to co-sponsor the Clean Water Celebration for nearly 3,000 students to learn about water and encourage them to make a difference in the protection of this precious natural resource. The 2017 theme was "Prospecting for Water on the Moon." -- Organized the Tazewell County Health Department Environmental Education Day for around 400 county 5th graders, who participated in hands-on activities like making edible aquifers and jungles in a jar, and learning about the water cycle, groundwater pollution prevention, recycling and other environmental issues. -- Offered free nitrate testing to private well owners during Groundwater Awareness Week. -- Distributed 400 free leak detection kits during Fix a Leak Week. -- Held a workshop on chlorides in drinking water. The event targeted winter snow and ice removal operators by educating them on the health concerns of high salt content in the water.
Northeastern Regional Groundwater Protection Planning Committee IL


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Community Profile:
Mission: To advocate groundwater protection practices, procedures, and education throughout the Northeastern Planning Region. The Northeastern Illinois Groundwater Regional Protection Planning Committee is organized as a protective and collaborative effort of citizens, businesses, and local and state government officials to further groundwater protection in this sensitive region. Service Area: DuPage, Kane, Kankakee, Kendall, and Will counties.

Results Oriented Activities:
Held an educational seminar for 50 health department sanitarians, well contractors, and local water system operators on groundwater monitoring and protection at an operating landfill. -- Provided bentonite at a reduced cost or free to private well owners who want or need to seal a private well. The committee also provides funding to health departments to promote the program. Between 5-10 wells were sealed in conjunction with the program. -- Participated in a variety of regional community outreach events with activities and giveaway items, which reached several thousand people, including the Kendall County Natural Resource Tour, school group meetings, Earth Day and Arbor Day celebrations, and more. The Committee also provided its members with groundwater flow models, an Enviroscape, tables, a display board showing an interactive water cycle, and other printed materials. -- Hosted the fifth informational and training seminar for public and commercial snow and ice removal operators on the environmental impact of road salts and hands-on training.
Northern Regional Groundwater Protection Planning Committee IL

Years Designated:

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Website:

Community Profile:

Results Oriented Activities:
Continued to develop programs to educate county boards, city councils, and planning/zoning officials about groundwater protection, which included working with McHenry County on their groundwater protection program, attending meetings of the Regional Water Supply Planning Group as part of the Chicago Metropolitan Agency for Planning and working with communities to become Groundwater Guardians. The community also prepared a Water Resources Forum to inform the county's businesses, residents, and elected officials on groundwater resources. -- Completed report of the assessment of the shallow sand and gravel aquifer using local well data. -- Conducted public education and outreach by participating in the 22nd annual youth groundwater festival at Rock Valley College which drew more than 613 fourth and fifth graders, a Youth Groundwater Festival in McHenry County, a Science, Technology Engineering, and Mathematics (STEM) festival for 240 students, the Boone County Fair, providing support for a county unused and expired medications collection effort, and other local initiatives. -- Continued to work with Winnebago, Boone and McHenry Counties to abandon unused wells. Over 261 have been abandoned since 2001, and two additional wells were abandoned last year.
Southern Regional Groundwater Protection Planning Committee IL

Years Designated:

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Website:

Community Profile:
Mission: To advocate groundwater protection practices and procedures throughout the Southern Illinois Planning Region. Service Area: Madison, St. Clair, Monroe and Randolph Counties in Southwestern Illinois.

Results Oriented Activities:
Hosted a groundwater field day with various educational activities and speakers. Citizens, government officials, and others attended. -- Continued to maintain and update a library of groundwater educational materials for loan to citizens, schools, and other interested groups. The library consists of books, pamphlets, flow models, videos, and a traveling display. The team is looking into starting an electronic library for wider distribution. -- Continued to work to recruit new Groundwater Guardian Communities within the four county area. -- Continued to promote well sealing as a means of groundwater protection and to provide bentonite for use in sealing. -- Maintained and updated a Committee Networking Guide to serve as a resource guide for members and the public providing points of contact within various areas of expertise.
Community Profile:
Mission: USGS has the principal responsibility within the federal government to provide hydrologic information and understanding needed by others to achieve the best use and management of the nation’s groundwater. To accomplish this, USGS, in cooperation with state, local and other federal agencies, systematically collects and analyzes groundwater data; conducts water-resource appraisals describing the occurrence, availability, and physical, chemical, and biological characteristics of groundwater; conducts basic and problem-oriented hydrologic and related research that aids in alleviating groundwater problems; and provides and understanding of groundwater systems sufficient to predict their response to natural and/or human-induced stress. Service Area: The State of Michigan and multi-state initiatives sponsored by the USGS and other federal agencies.

Results Oriented Activities:
Continued to make real-time data available online for two groundwater stations. Continuous and discrete data, as well as water quality data, is available for other groundwater sites throughout the state to assist with local groundwater evaluation and protection. -- Compiled water use and groundwater withdrawal information statewide from 2015 for the USGS national 5-year summary report. The data compiled will help determine water budget assessments and provide reliable scientific information on current and historic groundwater conditions. -- Collected samples to monitor pesticides and metabolites in groundwater. The information collected will be used to make management decisions. -- Continued compiling list of public supply water use sites and comparing information in other databases as part of the USGS Water Census program.
Nebraska Water Center, part of the Robert B. Daugherty Water for Food Institute NE

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Community Profile:
The Nebraska Water Center coordinates, implements, and facilitates water and water-related research, extension, teaching, and outreach programming within the University of Nebraska system as part of the Robert B. Daugherty Water for Food Institute at the University of Nebraska. The Nebraska Water Center has been a fixture at UNL for more than 40 years, being established as the Nebraska Water Resources Research Institute by Congressional mandate in 1964. It is one of a network of more than 54 water resources research institutes at Land Grant Universities nationwide. The Robert B. Daugherty Water for Food Institute at the University of Nebraska was founded in 2010 to address the global challenge of achieving food security with less stress on water resources through improved water management in agricultural and food systems.

Results Oriented Activities:
Participated in a number of public education events in partnership with Nebraska Extension and the University of Nebraska-Lincoln School of Natural Resources. -- Published the quarterly "Water Current" newsletter featuring water-related news from around the state. -- Partnered with various departments within the State of Nebraska to conduct vadose zone projects directed at investigating methods of monitoring and treating nitrate contamination. -- Partnered with University of Nebraska - Lincoln, the Groundwater Foundation, and several Nebraska school districts to support middle- and high-school teachers develop curriculum around groundwater science. -- Partnered with Future Farmers of America programs in Nebraska to implement a "Know Your Well" project that instructs high school students in assess water quality for domestic and farmstead wells.
U.S. Geological Survey Nebraska Water Science Center NE

Years Designated:

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Community Profile:
Mission: We provide scientific data collection and interpretation for Congress, State and local agencies, and tribes. Part of our mission is to educate these agencies and the public about all water-resource issues. Service Area: State of Nebraska.

Results Oriented Activities:
Participated in several outreach events in Nebraska to help communicate water science to the public including the Nebraska Children's Groundwater Festival which educated fifth grade students about the groundwater aspect of the water cycle. The community was able to educate over 1600 students about groundwater and surface water interaction through the Natural Resources Festival and the World-O-Water Festival since 2012.
Mecklenburg County Groundwater & Wastewater NC

Years Designated:

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Community Profile:
Mission: In order to protect the public’s health through the protection of groundwater resources, the Groundwater and Wastewater Program approves and oversees private wells, on-site wastewater treatment and disposal systems and other regulated sites. Service Area: Mecklenburg County is a 524 square-mile area located in the southern Piedmont region of North Carolina. It is home to more than 990,000 people (15 percent utilizing groundwater) and is the center of a seven county metropolitan statistical area with an aggregate population of more than 1.3 million people. Mecklenburg County is divided into seven incorporated municipalities, ranging in size from Charlotte at 207 square miles to Pineville at 3.0 square miles.

Results Oriented Activities:
Provided funding support to the Mecklenburg County Groundwater Guardian Community team to participate in a Realtors Expo attended by 929 realtors.
Miami Conservancy District OH

Years Designated:

Mike Ekberg
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Dayton, OH 45402

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Community Profile:
Mission: To maintain a groundwater monitoring network that provides valuable data on groundwater quality and quantity in the watershed of the Great Miami River. To conduct special groundwater investigations individually or in partnership with other government agencies that address groundwater issues of concern in the watershed. Service Area: The watershed of the Great Miami River in southwest Ohio. The watershed encompasses nearly 4,000 square miles and includes the cities of Dayton, Hamilton, Middletown, Sidney, Springfield, and Troy.

Results Oriented Activities:
Continued collecting data for a Groundwater Monitoring Network to provide information on groundwater quality and quantity in the Great Miami River Watershed. Specifically, nutrient levels in the Great Miami River and its tributaries and quantifying the water budget for the Great Miami River Watershed. The annual water resources report was completed. -- Provided financial support and presenters for the Butler County Water Festival, attended by approximately 1,000 4th-6th grade students. Students learn about groundwater, surface water, conservation, land use, and other water-related topics. -- Provided support for the Great Miami Watershed Network by planning and coordinating meetings. -- Hosted test your well events in five counties, educating citizens on groundwater contamination and protection.