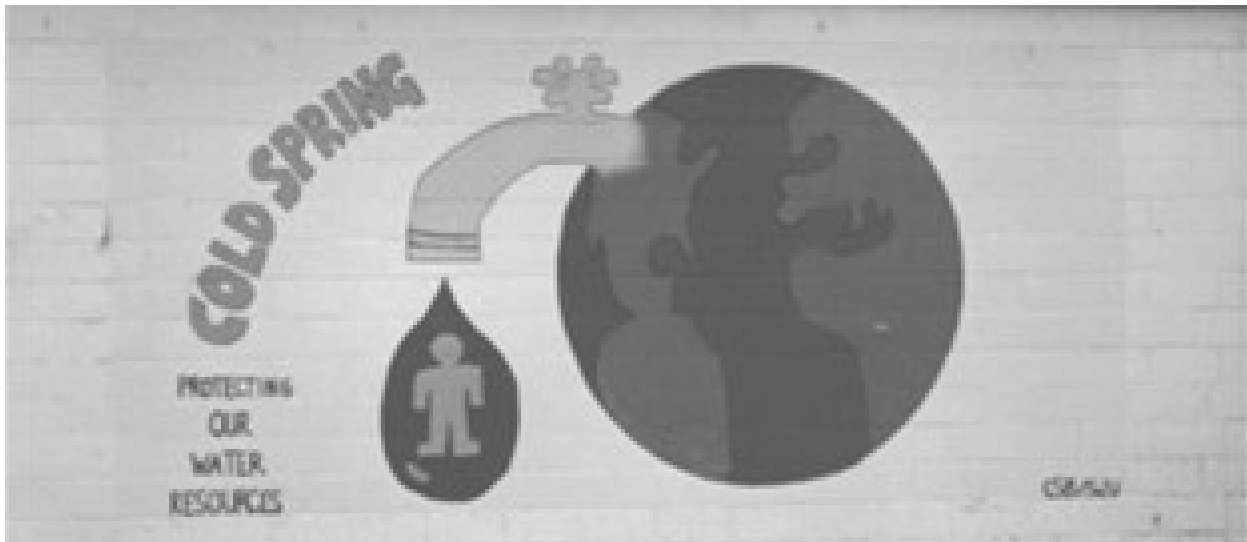


Cold Spring: Clean Water for the Future

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Mural painted by the Art Club of St. John's University and College of St. Benedict

Sometimes it takes a crisis to motivate a community to think about sustainability. Cold Spring faced up to a possible potable water shortage five years ago when tests confirmed that pollutants threatened Cold Spring's well water. Finding a satisfying drink of water in Cold Spring is less worrisome since the city, together with a group of area businesses, began a wellhead protection program in 1997. Cold Spring residents are learning that keeping clean drinking water available for future generations involves a solid understanding of the relationship between water and human activity.

Only a short drive south of I-94, Cold Spring is a rural community of about 4,000 people in Central Minnesota. It is located on the Sauk River, just northeast of a chain of lakes, and is surrounded by farms and undeveloped land including forest, wetlands, and surface water bodies. A threat to Cold Spring's sustainability, however, lurked beneath the surface. Tests showed that the groundwater the community depends on was threatened with nitrate contamination from sources such as improperly planned, constructed and located septic systems, agriculture (pesticides, herbicides, fertilizers, and manure applications) and storm water runoff in the city. The first response was to secure a clean water source by drilling a new

well. At the same time, Cold Spring took action to clean up and protect its drinking water for the future.

The Problem

In August of 1996, nitrate levels exceeded the maximum contaminant level of 10 parts per million (ppm) in water sampled from city well No. 1, located in the northwest part of the city. City well No. 2 (located in the same part of the city) also registered elevated levels of nitrates ranging from 7 to 8 ppm. Since these two wells make up the city's primary well fields, the city initiated a Clean Water Partnership to address the nitrate problem and ensure a safe

Cold Spring Student Projects

Public Education on the Wellhead Protection Program: Tony Iannazzo

In 1998-99, Tony worked with Rena Weber at the City, Dennis Fuchs at the Soil and Water Conservation District and Dave Neiman with Minnesota Rural Water to develop and implement a public education component of the Wellhead Protection Plan. The goal of the project was to broaden public awareness of water quality issues in Cold Spring and to inform and increase public commitment to the wellhead protection effort. He coordinated his work with the outreach and education committee of the wellhead project advisory committee. Tony and the group developed an overall strategy, researched costs, and identified funds and opportunities to broaden public awareness. He coordinated a middle and high school essay contest; got funding for the art club to paint a mural in Cold Spring, and coordinated a community festival on painting day. He also developed a web page www.mrwa.com/cwp1.htm.

Cold Spring Mural Project -- Art Club

The St. John's University and the College of St. Benedict Art Club along with students

from a St. John's/St. Ben's Sustainable Societies class, painted a mural on a blank wall of the bakery in Cold Spring. The mural was one part of the water protection public education effort. The final mural design was developed by art club members, but incorporated community input and children's ideas and images. The mural was painted in mid-May, 1999 in conjunction with the clean water awareness festival. Essay contest winners were given saving bonds, brats were fried, lemonade was served, and a good time was had by all. The final mural was a collage of different ideas and hopes for a sustainable future in Cold Spring. Unfortunately, this wall was covered when the bakery expanded its facilities in the year 2000, and is no longer visible. A site for new mural is currently being sought.

Turf Management in Cold Spring—Matt Kyle

This project is also related to the Cold Spring wellhead protection plan. Its primary focus was on water quality issues, emphasizing how the amount of nitrogen that is introduced into the ground water in Cold Spring through lawn/field care management can be reduced. Additionally, means of implementing these changes were explored. The project was a study of sustainable turf management ideals

and adequate water supply for residents and businesses in the future.

In Minnesota, nitrates (NO₃) are a common contaminant found in wells. They are tasteless, colorless, naturally occurring chemicals made of nitrogen and oxygen. Nitrates are found in air, soil, water and plants, and much of the nitrate in our environment comes from the decomposition of plants and animal wastes and fertilizers; when they concentrate near the surface, they can seep into the groundwater and contaminate it. Too many nitrates in drinking water can cause serious health problems for young infants, including methemoglobinemia, also known as "blue baby syndrome." Bacteria

in infants' digestive systems can convert nitrate into nitrite (NO₂), a chemical that can interfere with the ability of blood to carry oxygen. This same problem can occur in people with reduced stomach acidity and people with certain blood disorders. Nitrates have also been thought to lead to some forms of cancer, though we lack solid evidence of this at present. A well contaminated with nitrates is often the first sign of an overall deterioration of groundwater quality.

for the Cold Spring. It highlighted areas of concern (public and private lawns, municipal fields, etc.) in Cold Spring and emphasized the creation of viable, sustainable management options. Matt coordinated with Gail Haglund, Minnesota Department of Health, to ensure that his work could be used in the final wellhead plan.

Children's Water Festival - Anne Panian

Anne Panian's internship had her working on the Public Education and Outreach Committee where she organized and implemented public education projects concerning groundwater issues through newsletters, Webpages, and community events. In addition to her work on the mural, Anne organized the Cold Spring Children's Water Festival, held on April 28, 2000. Two hundred fourth graders from area schools met in Pioneer Park in Cold Spring for in a day-long water

festival about the importance of water quality and wellhead protection. Throughout the day, the students traveled to eight different sessions set up around the park where volunteer presenters talked about water quality and its affect on people. Favorite topics included "Fabulous Fish", "Pollution Solutions", "Freaky Frogs", and "Nasty Nitrates", a session when kids could test a water sample for nitrates from their own homes.



Enthusiasm continues to grow among students, educators, parents and community leaders. Discussion began late in 2000 between leaders from Cold Spring and neighboring Rockville and Richmond, about making the festival a joint effort for each community's wellhead protection efforts. The 2001 Festival was dubbed the "Rocori Area Children's Water Festival", after the school district by the same name, in anticipation future joint Water Festivals.

Wellhead Protection Plan

In 1997, wellhead protection became mandatory in Minnesota, and all well owners have had to develop wellhead protection plans. Cold Spring is working to carry out the Wellhead Protection Plan in concert with area businesses that draw their water from the same aquifer, such as Gold'n Plump Poultry, Cold Spring Granite, Cold Spring Alano, Town's Edge Mobile Home Park and Gluek Brewing. This private-public partnership is unique in the state, and it is hoped that it will be a model for other wellhead protection partnerships. An executive committee (made up of business leaders, residents and community officials) is responsible for carrying out the plan.

The plan was prepared with the help of several local, county and state agencies. A 1998 Clean Water Partnership Grant from the Minnesota Pollution Control Agency funds the Wellhead Protection Program. Minnesota Department of Health and the Minnesota Rural Water Association helped to bring the partners together, get the project organized and funded, and provided technical assistance throughout. Other contributors included staff from the Stearns County Soil and Water Conservation District, Minnesota Department of Agriculture, Stearns Environmental Services, U. of M. Extension Service, and the Sauk River Watershed District.

The main concern for the Cold Spring Clean Water Partnership is the contamination of high-capacity wells in the Cold Spring area that draw from the local groundwater reservoir. The Clean Water Partnership funds enabled the group to undertake many varied tasks, including geologic mapping, water testing, long-term monitoring, and resident use survey work, all with a goal of identifying the source of the contamination. This work was substantially complete in the fall of 1999 and once the contamination source is established, the group of well owners will develop a plan to clean and protect the resource.

Educating for Clean Water

The Clean Water Partnership worked with student interns from neighboring St. John's University and the College of St. Benedict to help develop a public education program to spread the word about the Wellhead Protection Program and everyone's role in keeping the city's water clean. Cold Spring partnered with the Minnesota Project through a sustainability project, which ran from 1997 through 2000 that connected interested students with sustainability projects in area communities. Minnesota Project is a nonprofit organization dedicated to sustainable development and environmental protection in rural Minnesota.

Other activities planned by the Public Education Committee included a series of nitrate-testing clinics where community members could bring in samples of their own well water, tours of the wastewater treatment facility, stenciling of storm water intakes to eliminate the dumping of illegal waste, a river cleanup and a river and lake monitoring program. An appreciation dinner for local farmers who had allowed technicians from the MDH, USGS and MPCA onto their land to test the local wells was held in 1999 as part of the Wellhead protection effort.

Composting

Finally, efforts to ensure clean water for future generations have to include ways to safely deal with wastes. One "bioneer" who is turning some of Gold n' Plump's wastes as well as other organic matter into rich topsoil is Brad Matuska, founder and owner of Mississippi Topsoils. Brad is one of the many new entrepreneurs who are quietly helping keep water clean as well as providing rich topsoil by taking wastes that might have cost businesses money to make harmless and transforming them into "black gold" for gardeners or golf courses. St. John's and St. Ben's students have interned at Brad's company and have learned

that recycling wastes can be profitable as well as good for future generations.

Conclusion

Having had its pollution wake-up call, Cold Spring is making more solid connections between human activity and water quality, and is working to involve the entire community in the effort to keep their water supply safe. Clean water in Cold Spring will depend on everyone doing their part - including sustainable businesses, like Mississippi Topsoils, farmers, homeowners, and even school children.

For More Information:

- City of Cold Spring, Minnesota, www.mrwa.com/ColdSpring.htm, (320) 685-3653
- Minnesota Rural Water Association: www.mrwa.com, (218) 685-5197
- Lola Schoenrich, Minnesota Project: www.mnproject.org, 651-645-6159
- Minnesota Department of Health: www.health.state.mn.us



Ernie Diedrich and others painting the Cold Spring Mural