



# The Youth Rotary Sprinkler Nozzle Retrofit Project

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A group of Douglas County high school students had an opportunity to get their feet wet in the world of water conservation this past summer.

The Youth Rotary Sprinkler Nozzle Retrofit Project is a joint venture of the Douglas County Water Resource Authority (DCWRA), the Douglas County School District School to Work Alliance Program (SWAP), Arapahoe/Douglas Works!, and the Center for Resource Conservation (CRC). The pilot project aims to reduce water waste in Douglas County while providing high school students with valuable work experience, technical training in irrigation and water conservation, and a paycheck.

Beginning in early August, ten Douglas County youth spent eight weeks retrofitting 50 residential irrigation systems with rotary sprinkler nozzles. Rotary nozzles are a recent innovation in sprinkler technology. When compared with traditional spray nozzles, rotary nozzles water more evenly, have fewer problems with misting, and have a lower precipitation rate (which reduces runoff and soil erosion). Because they provide better coverage, retrofitting an existing irrigation system with rotary nozzles can significantly improve the appearance and health of a lawn and, according to DCWRA estimates, reduce household water use by up to 15% each month. “It’s a solid conservation program,” says Jeff Woodward, Director of Water Programs at the CRC. “Rotary nozzles are a good technical innovation that save water and allow landscapes to look great.”

According to Mark Shively, Executive Director of the DCWRA (the government agency charged with the planning and development of water resources, systems, and facilities in Douglas County), the idea for the retrofit project grew out of the success of the agency’s high school outreach programs. The response to their Water Investor Program, which educates thousands of Douglas County students about water conservation, has, in Shively’s words, been “ginormous.” “We’re always looking for ways to add value to the program,” he says, “and high school kids tend to be interested in hands-on and summer job opportunities.” Shively had been pondering ways to encourage homeowners to replace their traditional pop-up spray nozzles with water-saving rotaries when he had an ‘aha!’ moment. “Why don’t we get the high school kids involved in the retrofits?”

Student work crews performed the retrofits under the supervision of CRC irrigation auditors. The auditors provided professional and technical guidance and ensured that the retrofits are completed to a high standard. “The CRC brings a well-managed and well-run field staff program,” says Woodward, whose organization has an established presence in Douglas County. Every summer,

the CRC partners with water providers across the Front Range to offer homeowners free sprinkler inspections through its popular Slow the Flow program. “We have staff doing audits in Douglas County every day. We also have a fair amount of technical expertise when it comes to sprinkler systems, so it’s a natural step for us to be guiding a crew performing retrofits,” Woodward said.

Rotary sprinkler nozzles, which are now available at many local retailers, are an example of a “comfortable conservation” technology. Much like replacing incandescent light bulbs with compact fluorescents, making the switch from traditional pop-up spray nozzles to rotary nozzles is an easy way to conserve a precious resource. Rotary nozzles not only perform better than regular spray nozzles, but also require virtually no lifestyle change on the part of the individuals using them. “With rotaries, you save water and money,” Shively points out. “And it’s the right thing to do, so why wouldn’t you want to do it?” He adds that rotary nozzles are a smart investment – they cost little up front—usually between \$5-\$7 per nozzle, with significant rebates are also available from most water providers. The savings they generate are such that the nozzles generally pay for themselves in less than two years.

The students participating in the retrofit project were selected by the Douglas County School to Work Alliance Program. Participants were chosen based on their interest in water conservation, sustainability, and natural resources. All of the students participating in the program have a disability or learning disorder, such as Attention Deficit Disorder or Asperger’s Syndrome (a high-functioning form of autism), and all qualify for services under the Workforce Investment Act of 1998, which established federal job training funds for adults, dislocated workers, and youth.

According to Nikesha Holiday, Youth Supervisor at Arapahoe/Douglas Works! (the workforce center serving Arapahoe and Douglas Counties), the experience gained through summer work programs like the Youth Rotary Sprinkler Nozzle Retrofit Project can be especially beneficial for students with disabilities. “These students face significant barriers to employment,” she says. “That line on your resume can be a foot in the door later on.” In addition to building their résumés and developing basic work skills, work experience programs can help students who have struggled in other environments find a niche in which they excel. Holiday cites as an example a young man with Asperger’s who found his calling – and a permanent job – when he was placed in an eight-week work experience program at a Denver hospital. “The youth placed in these programs get work experience, and also learn their own value and self-worth,” Holiday says.

Dawn Gardener, Business Development Supervisor at Arapahoe/Douglas Works!, says she is excited to be part of a project that exposes young people to the idea of working in water management, a field that is currently facing a shortage of skilled workers. “It’s really crucial because of the graying of the industry,” she says. “It’s important to introduce youth to this industry because it – water – feeds into security issues and people’s lives. The people who are working in this field want to retire, but there’s no one waiting in the pipeline.” In order to better prepare students for careers in the water industry – which, according to the Bureau of Labor Statistics, is expected to grow 14% by 2016 – several Denver-area school districts will soon be adopting a “water science” curriculum. (Boulder Valley School District will become the first in the nation to offer these courses when it launches the Water Utility Science Program this fall. The program will provide specialized training courses leading to State of Colorado certifications for students).

Shively concurs with Gardener’s assessment of the water industry, adding that there is “broad recognition that we need to get some kids interested and trained in water – and conservation is a part of that.” He is encouraged by the enthusiastic response of the youth involved in the DCWRA’s school outreach programs and is hopeful that Douglas County Schools will follow in Boulder Valley’s footsteps, becoming the second district to offer a water curriculum. He sees the Youth Rotary Sprinkler Nozzle Retrofit Project as a way to channel the students’ enthusiasm into a program that may result in both immediate and long-term payoffs for everyone involved – the students, homeowners, and the water industry. “Some of these kids will become water lawyers,” he says, “and some will graduate, get married, and get a job. For kids with good math and science skills who aren’t going to be engineers, these are darn good jobs. We’re working to alert kids to these opportunities.”

Woodward notes that the project’s emphasis on conservation is imperative. “I’m excited to work with youth,” he says. “It’s an opportunity to train the next generation of people who will be working in industries related to water, and it’s great to be educating them about conservation at the beginning of their careers. They’re learning about irrigation efficiency and the importance of it, and we hope they will use that knowledge in their later work.”

Shively is optimistic about the future of the project, which, in its first season, had enough resources to retrofit only 50 residential systems. He has applied for a grant through the Colorado Water Conservation Board and hopes that next summer that number will increase to 1,000. In the meantime, the DCWRA will continue educating students about the importance of water conservation. “We want to raise this generation with different water ethics than the last generation had, so that clean water is available for future generations,” he says.

For more information about the CRC’s water conservation programs, visit our website at: [www.conservationcenter.org/w\\_main.htm](http://www.conservationcenter.org/w_main.htm). More information on Douglas County Water Resource Authority is available at: [www.dewater.org](http://www.dewater.org).

