



**APWA MINNESOTA CHAPTER
PUBLIC WORKS ENVIRONMENTAL STEWARDSHIP AWARD
NOMINATION FORM**

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Submission Deadline: October 1, 2019

All nomination and supporting data are to be submitted in electronic PDF format to Sarah at sarah.lloyd@bolton-menk.com with a maximum file size of 3.0 MEGS.

Group or Program Nominated:

Managing Agency: _____
Contact Person: _____
Agency Address: _____
Agency Phone Number: _____

Name of Person Making Nomination: _____
Phone Number: _____

Criteria for Nomination

- Project must be substantially completed by October 31, 2019.
- A sustained effort that demonstrates a commitment by the group, individual or organization to environmental conservation or protection.
- Benefits to the community and to the environment.
- Consideration of Public Works values, including cost effectiveness and long-term operation and maintenance.
- Evidence of a sustained commitment to conservation.

Reasons for Nomination Describe the group or program with the aspects and features that fulfilled any of the applicable criteria listed. (Include description on a separate page.)

Public Works Environmental Stewardship Award | APWA-MN Chapter | October 2019

Water Stewardship Project

Forest Lake Area Schools, City of Forest Lake, Rice Creek Watershed District



Forest Lake
AS GOOD AS IT SOUNDS



RCWD
RICE CREEK WATERSHED DISTRICT



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Real People. Real Solutions.



ABOUT FOREST LAKE AREA SCHOOLS

Forest Lake Area Schools (FLAS) is an exemplary leader in environmental education and stewardship. In 2010, Forest Lake Elementary became one of 150 schools across the country to be selected for the NASA Explorer Schools Program. In 2011, FLAS added its first Science, Technology, Engineering and Math (STEM) oriented elementary school to integrate a problem-based approach to teaching and learning. In 2019, Forest Lake High School was awarded the U.S. Department of Education's Green Ribbon School award, the only school in Minnesota to receive the recognition, for its efforts in reducing environmental impact and utility costs, improving health and wellness, and ensuring effective and sustainable education. The award was largely related to building efficiency upgrades but was also attributed to the high school's very active environmental club. The club is committed to implementing several student-led sustainability projects each year on campus and around the community.





In 2016, a unique partnership was developed amongst the City of Forest Lake, Rice Creek Watershed District (RCWD), the Minnesota Department of Health, FLAS, Forest Lake High School environmental, biology, and agriculture faculty, and the student-led environmental club. FLAS began to improve facilities at the high school and had to meet RCWD's stormwater management permit requirements. After

some planning meetings, it became evident that all partners had a common environmental stewardship goal in mind. Their commitment to environmental protection, education, and sustainability brought unique perspectives to this influential project, completed in 2019, that received more than \$500,000 in support from the Board of Water and Soil Resources (BWSR) Clean Water Fund. Several FLAS campuses across the City of Forest Lake were assessed for feasibility of stormwater capture and use for irrigation—the high school emerged as the best candidate.

Stormwater Reuse

The first phase of a long-term stormwater reuse and education program started at the Forest Lake High School site. This included construction of a new stormwater basin to filter and treat stormwater. The basin was converted to a wet pond to provide re-use system water storage. The pond receives runoff from a drainage area of 19.9 acres, including 14.3 acres of impervious surfaces. In order to irrigate approximately 12 acres of athletic fields, this pond provides a storage volume for supply into the existing irrigation system. An existing water supply remains connected to the irrigation system and supplements the irrigation supply during drier periods. During this phase, stormwater pond retrofits and construction of a new irrigation infrastructure will *reduce potable groundwater usage at the high school by more than 4 million gallons-per year*. This helps support the city's initiative to reduce irrigation and other non-consumptive water uses.





Educational Benefits

An educational curriculum was also developed to *integrate the reuse technology and water conservation concepts into biology, agriculture, and earth science courses.*

Through science and technology curriculum development, teachers and students will monitor water used compared to stormwater harvested for irrigation.

Additional educational materials were developed to track water usage benefits for both student and public consumption. FLAS faculty were excited to think outside the box and develop lessons surrounding the importance of stormwater management on their campus.



The Forest Lake High School Stormwater Capture and Reuse for Irrigation Project aligned with other building and parking improvements, which led to substantial cost savings overall. The project consisted of modifying an existing stormwater facility and constructing a new stormwater pond where stormwater is pumped to irrigate

the high school's football, baseball/softball, and soccer fields. The collected stormwater will supplement the sites' current groundwater irrigation well for more than 85 percent of the year, on average, resulting in more than 4 million gallons of groundwater saved each year. Water is pumped through a filter and an ultraviolet (UV) treatment system to ensure bacteria, and other potentially harmful pathogens are eliminated. FLAS' Grounds and Maintenance group is dedicated to managing and maintaining the system, which includes operating the irrigation pumps and treatment system and pulling the pumps out of the pond in the winter. This project is one of many on campus studied by environmental sciences, biology, and agriculture classrooms at the high school. Other projects include a green house facility, pollinator garden, and other stormwater treatment basins.



The project also resulted in

- **Reduced solids and phosphorus loading to Clear Lake** supporting RCWD's and the Clear Lake Association's initiatives to keep the lake off the city's impaired waters list
- **Improved groundwater recharge** supporting Washington County's and the city's groundwater management planning goal, found in the City of Forest Lake 2040 Comprehensive Plan
- A stormwater quality testing site to **identify potentially harmful bacteria** that may be transmitted to humans via irrigation infrastructure; this site would support the Minnesota Department of Health's initiatives to provide the state guidance on effective treatment of stormwater for irrigation
- An **outdoor classroom and real-world environmental laboratory** for teachers and students to learn about innovative approaches to natural resource protection



Forest Lake Area Schools' commitment to environmental protection and desire to partner with like-minded groups to support common regional goals makes them a perfect candidate for this award. In 2018, the Forest Lake Area Chamber of Commerce (FLACC) awarded FLAS with the Green Champions Award for their efforts and partnerships related to the stormwater reuse project. FLAS is a leader in Forest Lake and will continue to support new generations of natural resources conservationists.

