

Sayville High students' clean water project a winner for school

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Sayville High students Adria Vargas, left, and Taylor Carpentieri, who together designed a system to filter out harmful nitrogen from water, won a \$2,500 grant for their school from the Long Island Regional Planning Council as part of its Long Island Water Quality Challenge. Credit: LSB Photography

By Bart Jones bart.jones@newsday.com Updated June 6, 2023

Two Sayville High students have won a \$2,500 award for their school after designing a project aimed at reducing nitrogen pollution in the Great South Bay and other Long Island waterways.

They are among students from four Long Island high schools and middle schools honored by the Long Island Regional Planning Council as part of a campaign to educate young people about reducing nitrogen in the water.

Planning experts on the council said Tuesday that nitrogen is the major culprit of water quality degradation on Long Island. It comes mainly from antiquated cesspools and septic systems as well as stormwater runoff and fertilizer.

The Sayville students, Taylor Carpentieri and Adria Vargas, both 16 and sophomores, devised a system to filter runoff water from the high school grounds, including the parking lot, that flows into nearby Green Creek.

That creek leads directly into the Great South Bay, said Elizabeth Cole, deputy director of the council.

Sayville High School has become “an integral part of our collective fight against nitrogen pollution,” Cole said Tuesday at a ceremony outside the school. “This is really a cutting-edge project that they put together.”

The project uses a wood chip biochar filter through which the stormwater passes, cleansing it of much of the nitrogen.

The students said they were thrilled to win the award for the project, which they worked on through an independent study course at the high school with teacher Anthony DeAngelis.

"It's really like a big honor to be out here with everyone," Carpentieri said. The students "both can be proud of our work. We put a lot of hard work into it."

Excessive nitrogen pollution has become evident in the region through developments such as toxic algal blooms, including "brown tides" and "red tides," Cole said. The blooms lead to low oxygen levels, fish kills and degraded wetlands and marine habitats.

Excess nitrogen also contaminates groundwater, Cole said. Groundwater is the main source of Long Island's drinking water.

John Cameron, chairman of the planning council, said "Nitrogen runoff into our surface waters and groundwater presents one of the most serious threats to the natural environment of Long Island."

The Sayville students' project is part of a larger effort to combat nitrogen pollution on Long Island, including an oyster and clam seed program Islip Town is helping run in the Great South Bay, said Town Supervisor Angie Carpenter. Oysters can filter 50 gallons of water a day, Carpenter said.

"This goes beyond just a simple project and this award," she said at the ceremony. "Because what you've done has an impact and makes a difference on our future generations."

The council, which is funded by the Nassau and Suffolk county governments along with state grants, is giving \$2,500 awards to three other schools for students' projects in a competition that included a total of 16 schools.

The other winning schools are Plainedge Middle School, Southside High School in Rockville Centre and Southwood Middle School in Syosset.

The Plainedge students are installing a native plant garden and lysimeters at three locations on the school's playing fields to monitor the amount of nitrogen infiltrating the groundwater.

The Southside students are designing and installing a rain garden to reduce stormwater runoff and filter pollutants.

The Syosset students are creating a low-input native plant garden and working to increase awareness of nitrogen pollution.

Basil Seggos, commissioner of the state Department of Environmental Conservation, which is participating in the educational program, praised the students' projects.

"New York State is comprehensively addressing the nitrogen pollution that historically degraded Long Island's waters and our collaborations with key partners continue to be instrumental to our success," he said in a statement.