

## Stream Of Conscience

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HARRISONBURG - In the dead of winter, a lack of greenery at the Edith J. Carrier Arboretum and Botanical Gardens reveals degraded waterways.

With federal and university funding, arboretum staff and James Madison University's Office of Facilities Management hope to begin restoring the stream and two ponds this year.

Work will target 1,080 feet of the stream and surrounding space, much of which has suffered from erosion and sediment deposits from stormwater runoff. Because the property serves as a stormwater retention area for both JMU and the city, staff are eager to begin the work this year.

"We have a lot of undercuts in our stream," said Jan Sievers Mahon, the arboretum's director. "Ultimately, this carries a lot of deposits and pollution to Chesapeake Bay."

Carrier Arboretum's floor, including turf and the waterways, collects runoff from approximately 600 acres, she said. Facilities Management has \$300,000 for the project. A National Fish and Wildlife Foundation grant provided \$200,000, with the university covering the rest.

The first step is to restore most of the waterways and create four wetland areas to hold excess water onsite and act as ecological habitats. One pair of wetlands will be in the Sycamore Flats area next to the stream, while the other two wetlands will be alongside the upper sediment pond, according to an email from JMU spokesman Bill Wyatt.

Wetlands can reduce the impact of flooding, which Mahon said is a primary concern for the property.

"Even though we can never stop flooding, we are looking to mitigate how water flows to the whole area," she said.

Afterwards, JMU will need to relocate the arboretum's greenhouse from its location near Neff Avenue, according to Brian Wagner of Ecosystem Services. His Charlottesville-based company created the projects' designs, and he said work would likely carry over into next year.

Wyatt, who consulted with JMU's Energy Conservation and Sustainability Manager Abe Kaufman, said in his email that the arboretum obtained approval from the state Department of Environmental Quality and the U.S. Army Corps of Engineers to proceed with the project.

Mahon said work is scheduled to start either in the winter or summer of this year, but further approval from JMU is required.

Fewer visitors during the winter would allow for minimal disruption from construction, as well as create less erosion during the work. However, Mahon said a summer start date would give more time to schedule a contractor and provider for warmer working weather.

Mahon said she and Kaufman had hoped to set a start date this month. Kaufman is also looking to bring both JMU and Eastern Mennonite University students into the project.

If accomplished, EMU's students will come from Jim Yoder's environmental sciences class. The EMU biology professor has worked with Ecosystems Services on other projects.

"We're very interested in getting our students into as many real world and training projects as possible," he said.

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- Caption: A stream at the Edith J. Carrier Arboretum and Botanical Gardens flows into a pond on the property off University Boulevard on Tuesday. James Madison University received a \$200,000 grant to help pay for a project to restore the stream, which has been degraded by erosion. (Photos by Holly Marcus / Special to the DN-R) A female cardinal perches near the pond at the arboretum. A thin sheet of ice covers the pond at the arboretum on Tuesday. IMG>[http://www.dnronline.com/files/uploads/article\\_images/54ae1731-9f8c-4d2d-b3c4-70680a950c5b/54ae1892-7274-49aa-91f1-70600a950c5b.jpg](http://www.dnronline.com/files/uploads/article_images/54ae1731-9f8c-4d2d-b3c4-70680a950c5b/54ae1892-7274-49aa-91f1-70600a950c5b.jpg) p/> [http://www.dnronline.com/files/uploads/article\\_images/54ae1731-9f8c-4d2d-b3c4-70680a950c5b/54ae18d1-e2d8-47b4-b108-70600a950c5b.jpg](http://www.dnronline.com/files/uploads/article_images/54ae1731-9f8c-4d2d-b3c4-70680a950c5b/54ae18d1-e2d8-47b4-b108-70600a950c5b.jpg) p/> [http://www.dnronline.com/files/uploads/article\\_images/54ae1731-9f8c-4d2d-b3c4-70680a950c5b/54ae18fd-f294-4a65-964b-70610a950c5b.jpg](http://www.dnronline.com/files/uploads/article_images/54ae1731-9f8c-4d2d-b3c4-70680a950c5b/54ae18fd-f294-4a65-964b-70610a950c5b.jpg) /IMG>

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