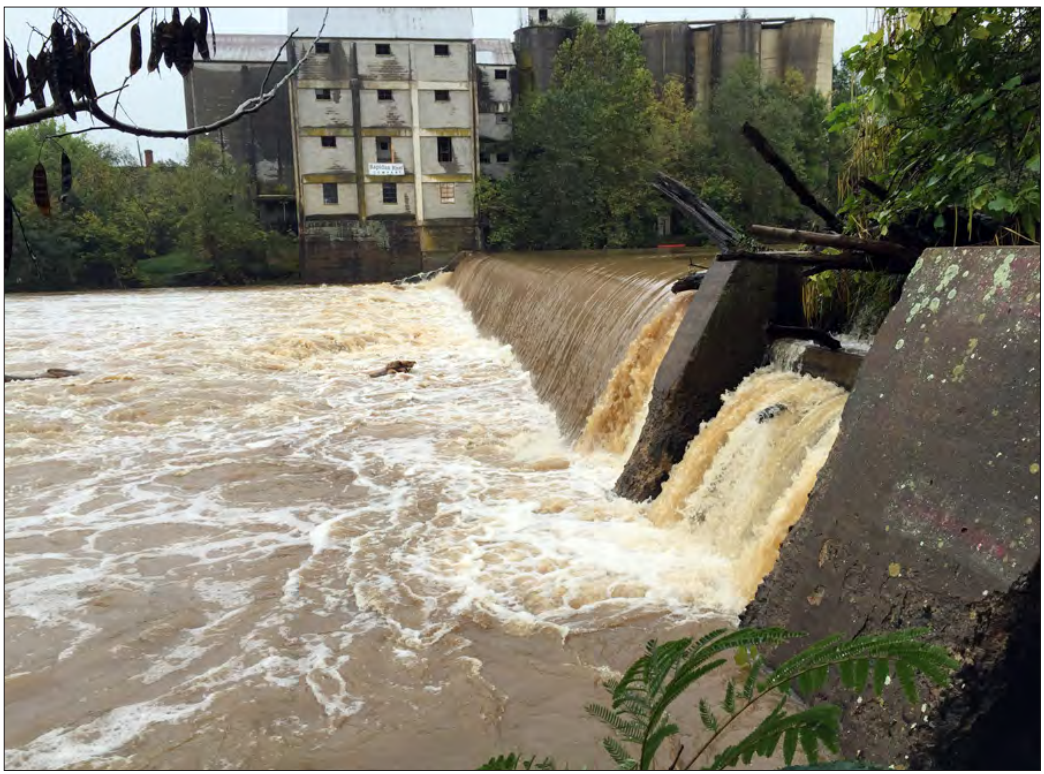
Fish wish?



Pictured above is the mill and dam in the historic village of Rapidan during an October 2015 flood. The Rapidan Partnership, part of the Center for Natural Capital located in the mill, has undertaken a study of the 1936 dam to consider whether potential modifications could yield environmental, recreational and economic benefits upstream and down.

FILE PHOTO BY JEFF POOLE

Rapidan Partnership begins study that could improve 541 miles of river

BY JEFF POOLE
Editor

There's an old joke that asks, "What does a fish say when it swims into a wall?"

"Dam."

For more than 80 years, the dam spanning the river at the Rapidan Mill has blocked the migration upstream of any number of freshwater and anadromous fish seeking to spawn upstream.

That's why a group of local, state and federal partners are working together to consider possible alterations to the 200-foot concrete dam in the village of Rapidan.

Last month, the Rapidan Partnership, a part of the Center for Natural Capital headquartered in the historic Rapidan Mill, announced the Rapidan Fish Passage Project—a study that could yield dam modifications with the potential to restore more than 540 miles of river habitat in Virginia.

Created in the spring, the Rapidan Partnership is comprised of representatives from the U.S. Fish and Wildlife Service, American Rivers, the National Oceanic and Atmospheric Administration, the Virginia

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Department of Wildlife Resources, Friends of the Rappahannock and the Piedmont Environmental Council.

According to project lead Jeff Waldon, the Rapidan dam represents the largest stream-passage issue in the Chesapeake Bay watershed. Or, as Center for Natural Capital Executive Director Michael Collins put it, "The only obstacle between the ocean and Hoover Camp (the headwaters of the Rapidan River) is the Rapidan dam."

Buoyed by recent projects that successfully restored American shad populations in the Potomac and James rivers, and coupled with the knowledge that a number of those fish (and others) had been caught recently at the base of the dam, the partnership began taking a harder look at the 1936 concrete structure.

"If we're going to be an environmental conservation group headquartered at the Rapidan Mill with a dam in our front yard, it behooves us to address that big issue," Waldon said.

For centuries, American shad were plentiful in Virginia rivers and streams. Before pollution, dams and other human interference, they were among the most valuable and important fish in the Chesapeake Bay. History even records General George Washington feeding his troops on the spring shad runs in the Schuylkill River at Valley Forge in 1778.

But the dam—which is 11 feet high and approximately 12 feet deep—blocks the migration of American shad, hickory shad, striped bass, blueback herring, alewife, American eel and sea lamprey.

Notably, American shad are an anadromous fish, meaning they spend most of their lives in saltwater, but return to freshwater rivers to spawn and produce fish—like salmon. Unlike salmon, they can't propel themselves over large obstacles upstream—even with the aid of the "fish ladder" near the mill. (The gradient of the ladder is too steep for the migratory fish to navigate. The upstream Denil fish ladder at the Orange Water Treatment Plant intake is gradual enough to permit migratory species to clear the dam and swim upstream.)

"The fish ladder at Rapidan is not sufficient for shad, stripers or alewife," Waldon confirmed. "These are sea creatures—not like salmon. They need a relatively low gradient—something more flat."

In evaluating the impact of the dam on the watershed, the partnership learned creating a free-flowing Rapidan River could improve 541 miles of river habitat in the Chesapeake Bay Watershed both upstream and down.

The partnership is in the veryearly stages of what could be a three- or four-year project, Waldon explained.

"This is very preliminary, but it's time to actively figure out what we should do. We need to do it carefully and intentionally and grind through the analysis and figure out the best plan of attack," he said.

"We want to get the data and develop a plan that works for everybody."

In addition to improving the quality of the watershed, a free flowing Rapidan could create a positive impact beyond the environment.

"There's the aesthetic impact—the view of the river looking upstream would be spectacular—but there's an economic impact and a recreational impact as well," Waldon said. "The economic impact of a free flowing river is not inconsequential."

After all, the dam—which is not a piece of public infrastructure—is a potential danger and a liability, requiring ongoing maintenance. While it has withstood historic floods and been subject to any number of trees, rocks and other debris hurtling downstream over the last 84 years, nothing suggests the hand-poured concrete and re-bar structure will continue to hold in perpetuity.

Even though the Department of Conservation and Recreation–which has regulatory authority over the dam—has ruled it a low-priority, low-risk dam, it represents the largest and most potentially beneficial project in the Chesapeake Bay Watershed, Waldon noted.

"The dam was put in for good reason—milling—but once that stops, there's not much purpose in it," he said. "There's no economic reason to keep it. There's no milling or hydrologic energy of any scale being created there or planned at the mill. Aesthetically, it's part of the village, but the village was there before the dam and will be there long after it."

Collins suggested modifying the dam to create a more free-flowing river could turn "a negative into a positive."

"We can imagine fishing off the banks of the Rapidan with tens of thousands of 12 to 15-inch shad running during the spring," Waldon said. "That's what's happening in Richmond and along the Potomac. That's why the history part of this is so fascinating. The colonists relied on shad as a primary food source. The loss of that has been a big deal over time."

Collins said one of the byproducts of the fish passage project could be the creation of a fishing club—like a hunting club—that would allow local members river access for recreational fishing.

Meanwhile, Waldon noted that larval and juvenile shad are a prime food source of rockfish—the most popular commercial and recreational finfish in the Chesapeake Bay—accounting for roughly $500 million in economic activity related to fishing, travel and lodging. In 2019, Waldon said, the Atlantic States Marine Fisheries Commission found that the rockfish population was in trouble. Restoring upstream access could generate a significant downstream impact on rockfish and other species.

But both Waldon and Collins stressed the project is in its initial phase.

"We're doing our due diligence, looking at all the issues, including the sediment behind the dam, the historic impact, the county impact and the economic impact," Collins said. After that, the partnership should know how or even if the dam could be altered. He said he hoped that study would be completed by mid-2021, and acknowledged it's possible the study will determine no action should be taken.

Should the study yield a modification recommendation, the partnership would then proceed to the design and engineering phase and consider how best to fund any alterations.

"If we get through all that and feel we have a workable solution, then it's a matter of raising money for the work," Collins said, suggesting any funding might be a mix of grants, public and private funds.

"It's a fascinating project," Waldon said. "It's large and complex and there are a lot of people involved. We're working with experts and agency folks and everyone who might have a stake in the project. We're looking at what's feasible and what's possible. Once we have the data, we'll be reaching out to have community conversations."

"We have the opportunity to create more than 540 miles of habitat," Collins reiterated. "If we can achieve that, this likely will be a project of national significance."

A budding business

Flower farm at Montpelier complements presidential property's ecological legacy

BY JEFF POOLE
Editor

Shop local.
Eat local.
Drink local.
Work local.
Flower local.

On a small patch of land at James Madison's Montpelier, wedged between a wildflower meadow and the new Virginia Thoroughbred Project, there's a colorful plot of flowers growing beneath the hot, summer sun.

Teeming with bumblebees, butterflies and unfortunately some pesky Japanese beetles, the flowers represent the lifetime dream of proprietor Stacey Chapman. The enterprise is named Westwind Flowers, after the road where she and husband, Tom, live in Orange.

"The flower industry is an $80 billion a year industry, but 80% of those flowers come from outside the United States," she says, ticking off the hard-to-spell official names of the various plants carefully organized on the rolling plot.

Beside the middle of three scenic, green Sears and Roebuck gambrel-roofed kit barns built at Montpelier in the 1920s, Chapman planted six 50 x 50 foot plots of snapdragons, larkspur, sweet William, cottage yarrow, prairie sun, dahlias and lisianthus—which is a great substitute for roses, apparently. Roses don't grow well locally, she explained.

Growing and selling close to home means a smaller environmental footprint and a conserva-

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Westwind Flowers at James Madison's Montpelier grows nearly 50 varieties of flowers on a small plot near the Virginia Thoroughbred Project. Pictured, clockwise from top: cottage yarrow, a filler flower, blooms in the field. Flower farmer Stacey Chapman has been working this plot since last fall. Bumblebees enjoy the scabiosa in the garden. A bumblebee visits the blooming snapdragons. A couple of bumblebees investigate a sunflower that towers over the property. One of the signature Montpelier gambrel-roofed barns is pictured in the background.

PHOTOS BY JEFF POOLE

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tion of resources. Where and how flowers grow matters, she said.

Chapman, who worked in floral shops in her early 20s before detouring into other endeavors, said she always had the idea she wanted to work with flowers. She didn't want to be a retail florist, necessarily. But in the last few years, her husband asked her what she wanted to do and suggested she think about becoming a flower farmer.

"Don't mess with my dream," she scoffed.

Instead, they worked to make it happen.

Tom Chapman worked for more than 20 years as an archaeologist, research historian, executive project manager and director of operations at James Madison's Montpelier and his relationships there helped the couple obtain the small, colorful plot on the exit route of the presidential estate.

They first started working the tract in the fall and planted in early March. Since then, she's been selling fresh flowers at farmers' markets throughout the area, to designers and to local pre-pay customers who collect single-stem cuttings out of a small shed on the flower farm. (The farm is not a pick-your-own operation.)

Chapman said she'd gardened on a small scale previously, but never to the extent of her current endeavor. One thing she said she's learned, "You have to be patient with the seasons."

Modern society, she lamented, expects immediate gratification. "We're so used to having it now, immediately," she said. "We're trying to grow with the seasons and adapt to what nature gives us."

PHOTO BY JEFF POOLE

White Sweet William blooms in bunches at Westwind Flowers.

Chapman feels the three-quarter-acre flower farm is complementary to the ecological legacy Montpelier promotes.

At the same time, she added, it's one more service that can be achieved locally—a point driven home during the recent coronavirus-related shortages in area grocery stores. "When I went to the store and couldn't find any food, I reached out to some local farmers for meat and told them if they had some, I'd be their customer for life," she said. "That's one more reason I thought 'we should do this.' We've gotten so far away from buying local."

Noting many of the flowers Americans buy come from South America, she pondered the ecological impact of their cultivation and transportation to various ports of call before ultimately arriving days or weeks later in a local chain store.

"We talk about 'shop local,' we need to think about 'flower local,' too," the budding flower farmer said. "There are a lot of benefits from buying directly from your local flower farmer."

Westwind Flowers offers single-stem, seasonal cuttings Fridays or Saturdays at Yoder's Market in Madison; at the new Orange farmer's market associated with Southard Seafood on Route 20; at Provisions Market Table in the Silk Mill complex in Orange; at the Spotsylvania Farmer's Market in the Route 3 commuter lot; and at the Forest Lakes Farmer's Market on Route 29 north of Charlottesville.

Fresh Harvest Club members can purchase a community supported agriculture-type share and select fresh flowers from the shed at the farm each Friday. It is otherwise not open to the public. For more information, visit www.westwindflowers.com.

Broadband authority takes steps to deliver local service

Aims to connect pilot homes, businesses in late summer

BY JEFF POOLE
Editor

"It's a little like building a house."

That's a simple, if imperfect, way Orange County Broadband Authority Chair Jim White describes the county's efforts to bring high-speed internet to its citizens.

"This past year, we've been building the core network, the fiber infrastructure," he said at last week's authority meeting. "That's a little like building a house's foundation, walls and roof."

That "foundation" is a core network of fiber running 55 miles from Eheart in western Orange County to Wilderness Shores in eastern Orange County. There's also another 50 miles of additional fiber network the county can access through lease agreements that provide service redundancy and connectivity.

The next phase—which the authority took steps to complete at its virtual meeting May 5—is like installing the

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electrical, plumbing, heating and cooling systems. "The systems that really make the house function," White said.

Those systems are the nine interconnected sites around the county housing the electronics ("the brains") to light the network, White said.

Once those are connected, the authority will have the capability to begin serving customers.

"That's the last layer," White continued with his simile, "selecting the items that will go into the house that serve the needs of the family. Think of it as selecting the furniture and appliances, connecting the power to the power company and the water to the water company."

At that point, the house becomes a home.

"It goes from being a shell to meeting the needs of the family—in this case, meeting the needs of the residents and businesses in the community," he concluded.

With a unanimous vote, the authority authorized staff to "build the capabilities necessary to provide high-speed internet service to residents and businesses."

Those capabilities include: a high level of customer experience, adequately monitoring and troubleshooting network operations, installing and maintaining customer premise equipment and providing redundant access, according to the motion made by authority vice chair Mark Johnson.

"By necessity, this project has to be one of phases," Johnson explained. "It's not like deciding to buy a new car. You go to the dealership, buy it and bring it home and you're set. It's a little like the Johnny Cash song. You do it one piece at a time."

Tuesday, the broadband authority approved an engineering contract and the purchase of routers and other equipment as it continues to put the pieces in place to deliver high-speed internet across the county.

In reviewing a timeline of completed and pending milestones for the authority, broadband program manager Lewis Foster reported the core network should be completed by June 30, with complete installation, configuration and testing done by late August. Following that, the authority will engage a number of test sites with the goal of having 100 subscribers installed and working by the end of 2020. Beginning in 2021, the goal is to connect 20 new subscribers every week, he said.

In the meantime, there are still a number of issues to resolve, few of them technological or mechanical.

White said he's working on developing pricing models and tiers of service to meet a range of broadband needs. He said the average entry point of the service should meet the needs of 80% of all families and businesses with a minimum download speed of 25 megabits per second and a minimum upload speed of 5 megabits per second. "Anything not at those levels is not considered broadband," he said.

"We want to connect the most people for the least amount of money in the shortest amount of time," Foster explained.

To do that, the authority is likely to look at those closest to the core network to maximize infrastructure and investment.

White noted it may seem unfair, but if the authority can connect 10 to 25 houses by running a short line from the core network, that would yield a higher benefit than running a longer line to fewer homes.

"We'll be looking at locations where lots of service can be provided reasonably efficiently because of the business aspect of this," White said, noting the authority will rely on GIS data and information to help inform its decisions.

Before it's ready to connect any paying customers, the authority also must partner with a vendor to provide customer interface and support services. It issued a request for proposals from qualified providers last week.

"Orange County doesn't have 50 guys in white vans or operators on the phone at 2:30 a.m. if your service goes out," Johnson noted, suggesting it would take the chosen vendor four to five months to become completely familiar with the authority's operation, equipment and system.

Authority members also discussed the importance of outreach and messaging to the citizens.

"As soon as we get clarity on the costs, we need to push that out to the community as a whole," District 5 Supervisor Lee Frame said.

White agreed. "A key part of this is outreach and informing people about the availability and they type of service and costs," he said. "It's as new to them as it is to us."

The one thing that's not new is the need.

"We've been getting a tremendous number of calls and emails from people who really need this service—especially now they're home more," Foster added.

"We've known we needed this, but COVID-19 has turned up the wick in terms of what we're hearing from people," White said.

"What we're doing is something people have been asking for for a long time," District 4 Supervisor Jim Crozier noted. "The is the equivalent of a utility—it's a necessity for everyone and it's extremely crucial for us to move on with this project."

"There have been steady comments coming to the board for years, but with the current situation, it's made it more exigent," Johnson added. "People are really feeling the need. It's no longer about just streaming Netflix. It's about people working from home and learning from home."