

# The STORMWATER SOLUTION: An Action Plan for Nature-based Stormwater Strategies

by Lily Huffman

## *A Plan for the Future*

In mid-December, while many other companies and organizations were winding down for the year, the North Carolina Coastal Federation, The Pew Charitable Trusts, N.C. Department of Environmental Quality and the Governor's Office met to press forward with an innovative plan for managing stormwater runoff. This meeting was the next step of a project that has been ongoing for more than a year. It was a culmination of hours of Zoom workgroup meetings and endless writing and edits.

At this meeting, the Coastal Federation briefed attendees on the nearly complete "Action Plan for Nature-based Stormwater Strategies," a plan that, when implemented, will change how North Carolina approaches stormwater management, from the mountains to the sea.

## *Old Problem, Different Approach*

In 2018, Governor Cooper issued Executive Order 80, which called for the development of a Climate Risk & Resilience Plan for North Carolina. This executive order also placed emphasis on the use of nature-based strategies to increase community resilience to climate change across the state.

One of the major threats of climate change in North Carolina is flooding. More frequent, intense storms that drop large volumes of rain will cause not only flooding, but also an increase in polluted stormwater runoff entering our waterways.

Traditionally, large volumes of rain have been dealt with by funneling it off the land as quickly as possible. Nature-

based stormwater strategies (NBSS), however, mimic or restore the natural movement of water through the land. These strategies not only allow, but actually encourage the rain to soak into the ground as it would in an unaltered landscape. In addition to helping mitigate flooding, this approach also catches pollutants that would otherwise end up in creeks, rivers and sounds.

Nature-based approaches to stormwater management are not new to the Coastal Federation. If you are familiar with our "Smart Yards" publication, wetland restoration and stormwater reduction projects, they aren't new to you, either. We have promoted NBSS since 1985 when we first started advocating for coastal stormwater rules.

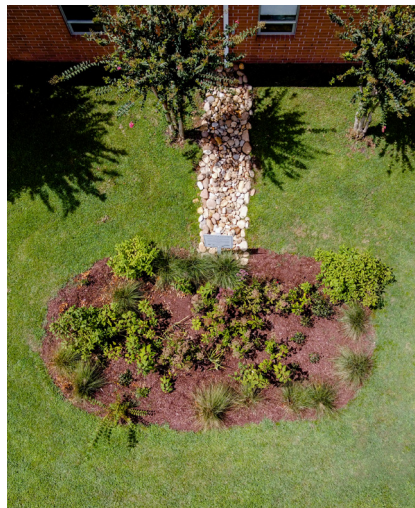


Photo: Rain Garden at Swansboro Town Hall

Better known nature-based stormwater strategies include practices like planting rain gardens, disconnecting impervious areas from hard or paved surfaces, installing pervious paving and collecting rainwater in cisterns. Although these approaches are relatively small-scale, the Coastal Federation is also working on nature-based solutions on much larger scales, including the restoration of more than 5,000 acres of wetlands at North River east of Beaufort. All of these approaches, whether large

or small, on urban or more rural landscapes work with and enhance the natural capacity of the land to slow down, spread out and soak in the rain.

## *Experts on a Mission*

The Coastal Federation's partnership with Pew first began after the passage of EO 80. A conference was held to outline what the State should include in its resilience plan. At the event, Lauren Kolodij, Coastal Federation deputy director, facilitated a panel about stormwater management options. After the conference, Pew contacted the Coastal Federation with interest in collaborating to fill the need for a strategy to incorporate NBSS to reduce flooding and protect water quality. With the partnership of The Pew Charitable Trusts, we began to develop a statewide stormwater action plan.

The first step in the process was to identify and assemble a group of experts in fields related to stormwater management to lend their perspective and expertise to developing the plan. These experts were then split into four working groups representing four major land use categories that contribute to stormwater runoff: working lands, roadways, new developments and stormwater retrofits.

Tracy Davis, owner and president of ATS Environmental Solutions, PLLC and retired DEQ Division Director over the Stormwater Program said that in the past, "The challenge has been changing the mindset of developers and designers to make NBSS the norm and not the exception. The Coastal Federation's and the Pew Charitable Trust's recognition of this challenge, and initiative to pull together experienced stormwater management professionals...has been timely and extremely productive."

However, fears of lack of developer buy in might soon be a thing of the past. New Development Work Group member, Burrows Smith of River Bluffs Development Corps. said, "I certainly hope that other developers and their land planners look at this process in a positive manner. I think we have done a great job making positive suggestions, that could lead to more diverse developing, rather than more regulations...If so, I know from practical experiences, this NBSS initiative will pay great environmental dividends." Through the course of four meetings, each work group was tasked with talking through the benefits, barriers and opportunities for using and promoting NBSS.

The first of these meetings took place in March of 2020. These meetings, already ambitious, were further challenged by the outbreak of COVID-19. But refusing to be derailed, project partners put their heads together to come up with a plan to hold virtual meetings, which although it may seem run-of-the-mill nearly a year later, at the time felt very new.

Despite fears that the lack of face-to-face interaction would prevent the connections that build ownership of a project like this, the meetings went very well. Kolodij said, "Our intent, of course, was to meet four times with each work group in person, which always helps strengthen partnerships and provides more interactive engagement in the meeting process. Having said that...it worked well and work group members

were committed to the process from day one."

Perhaps the fact that the endeavor had received the blessing of then N.C. DEQ Secretary Michael Regan was a sign that this project was on the right path, despite the unforeseen obstacle of COVID-19. In his opening remarks to the work groups, Regan said, "What we know is that we have to act now. We cannot do the same old things and expect a different result. We have the opportunity to address flood risk and water quality and to make our communities safer. And that's good for the people of North Carolina and for our economy. What you are doing today is critical to our state's success."

Doing things differently is at the heart of this endeavor. Not only is the "Action Plan for Nature-Based Stormwater Strategies" advocating for a different approach to stormwater management in the state, it is also different in its conception. This process, although far from over, has been intentionally collaborative from the start. It considers the benefits and challenges from as many perspectives as possible to create a plan that is practicable for as many people as possible. And that is why everyone involved in the plan is hopeful that it will succeed in making a difference in the state.

"We always need to evaluate the effectiveness and affordability of nature-based stormwater strategies each time we develop land, seek to

reduce flooding problems plaguing existing communities, build and maintain highways, as well as manage and sustain working forests and farms," said Todd Miller, executive director of the Coastal Federation. "This will ensure that best methods to reduce flooding and protect water quality are always selected, and that will provide economic and environmental rewards that will move nature-based strategies into the mainstream of practice."

### *From Paper to Practice*

Today, the Action Plan has been written and it is time to transition it from words on a page to a reality in practice. Now legislators, state departments and divisions will be briefed on key strategies of the plan to springboard its implementation.

So, the meetings will continue, and the conversations around changing stormwater management practices at a state and local levels with them. It might take small steps at first, but with the perseverance of this project team and their collaborators, we will soon be running toward a more resilient future.



Photo: Aerial image of North River Wetlands Preserve

## *Cross-Cutting Recommendations*

- 1) State and local governments need to lead by example by encouraging the use of nature-based stormwater strategies and implementing them widely.
- 2) Increase education, outreach and professional training for nature-based stormwater and watershed management strategies.
- 3) Create a Nature-Based Stormwater Steering Committee to ensure continued stakeholder engagement and leadership in support of long-term, meaningful progress.
- 4) The four work groups' central recommendation calls for statewide effective watershed management that focuses on protecting, restoring or mimicking natural hydrology to concurrently reduce flooding and improve water quality.

*"The Action Plan is a comprehensive guide for state officials, local governments, and other stakeholders to advance the use of nature-based flood solutions. From working lands to neighborhoods and main street, applying these recommendations can make North Carolina more resilient and flood-ready."*

-Yaron Miller, Officer at The Pew Charitable Trusts' Flood-Prepared Communities Project