



# STORMWATER steward

A Stormwater SMART publication

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at a  
glance

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UNLEASHED

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## DEPAVING: A NEW WAY TO MAKE CITIES GREENER

A new phenomenon is paving its way across the country—no pun intended. The ‘depaving’ initiative has sparked interest in urban regions where desolate, asphalt-laden areas make up over 50% of the infrastructure. Cement and asphalt typically aren’t given much thought—we have become numb to the overwhelming amount of hard surfaces that make up our large cities and smaller towns. With overly-concentrated populations, we need these hard surfaces for easy travel and convenient everyday use. Unfortunately, just because they are convenient for us doesn’t mean they are good for the overall environment or even for our health.



In the United States alone, 43,000 square miles—an area roughly the size of Ohio—is covered with pavement and other impermeable surfaces that don’t allow water to filter through. 65% of these impermeable surfaces consist of streets, parking lots, and driveways, according to the Center for Watershed Protection. With all of these hard surfaces collectively keeping

water from infiltrating the ground, polluted runoff quickly becomes a huge issue. When water has no where to go, it collects pollutants and biological contaminants that head downstream into waterways, affecting both plants, animals, and, you guessed it, us. The perils of stormwater runoff is another topic that can be reviewed in depth on our website. The focus of this article is the solutions that are being implemented to combat such stormwater issues, specifically ‘depaving.’ Depaving is a complex undertaking, but many communities are reaping its benefits by removing hard surfaces that no longer serve a purpose. Depaving projects range from small, medium, to large-scale.

Small-scale projects can be tackled in as little as 2 days, depending on your plans for the space after the depave is complete. The first day typically involves removing the concrete or asphalt, while the second day includes revitalizing the space to address stormwater concerns. Pollinator and rain gardens or permeable pavements like granite pathways can be a great

alternative. A few things to consider during a depave include how the stormwater will drain with the new pervious surface (infiltration rate of soil), observing if the area receives a lot of foot-traffic, and checking if the underlying soil could have any contaminants from previous uses of



the site. These considerations could impact how you carry out the depave and the design for the new green space. For first time depavers, it is highly recommended to start out with asphalt less than 500 square feet as asphalt is lighter and much easier to remove. If you would like more information on the depaving process, visit the Habitat Network at [yardmap.org](http://yardmap.org). If you would like more information on how to create a green space to fit your needs, visit [stormwatersmart.org](http://stormwatersmart.org).

### Article Sources:

Frazer, Lance. “Paving Paradise: The Peril of Impervious Surfaces.” *Environmental Health Perspectives* 113.7 (2005): A456–A462. Print.

<http://content.yardmap.org/learn/what-is-and-how-to-depave/>



## DAM REMOVAL UNLEASHES NEUSE RIVER

Over 1,200 dam removal projects have taken place all over the United States in the last 50 years, with the majority removed in the last 20 years. For decades, dams were built on river systems for flood control, irrigation, and power generation to meet societal needs for growing communities. While they served a purpose, the infrastructure of most dams has aged severely, creating costly repair projects for many states. Most states now consider the dam removal option when the maintenance cost to keep the dam active is greater than the removal cost—this tends to be the case more often than not.

In Wake County, the Milburnie Dam removal project began on Nov. 15, 2017 and took less than 2 weeks to complete. The Milburnie Dam, standing 15 feet high, was located on the Neuse River right between Falls Lake and the Pamlico sound. Water is now able to flow freely, allowing migratory fish to make their way inland to spawn. Fish species like shad and striped bass will be able to reach northern Wake County for spawning events. The river will take years to be fully restored to its natural conditions, but the dam removal was the

first step in the process. The river should see the return of some rare freshwater mussel species and diversity of macroinvertebrates should increase with more varied habitat available.



American Shad

While there are many positive outcomes with dam removal, there are also some factors that could have further adverse effects in the environment when dismantling a dam. Sediment, pollution, and other debris that was trapped behind the standing dam will now be released into the flowing river water. However, the dam removal process can be staged to avoid a sudden release of these pollutants downstream.

To further the restoration process, the company handling the renovation will also plant trees and other vegetation



Dam removal will allow the river to resume its natural state.

along the river's banks to stabilize the soil and prevent erosion. This is known as a riparian buffer, keeping the streambanks in place and filtering runoff that may be flowing into the Neuse River.

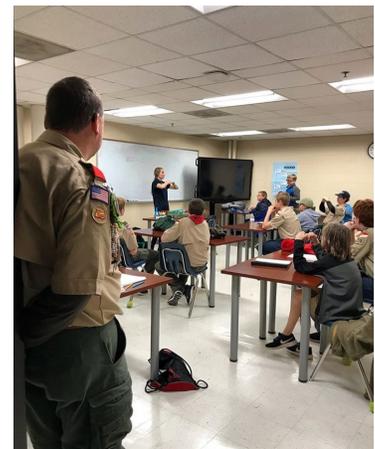
Over time, dam removal projects have proved extremely successful in improving the overall river ecosystem. A more naturalized water and sediment flow increases the amount of high quality habitat and promotes a diversity of organisms that can live in the river. Dam removal does not require further money and upkeep because more primitive rivers are able to maintain healthy ecosystems. Currently, there are many ongoing dam removal projects happening in NC.

## BOY SCOUTS & BADGES!

Every year, the Boy Scouts of America's Old North State Council hosts a STEM Merit Badge College where scouts can sign up to take classes in various subjects to receive a badge. Stormwater SMART participates by writing the curriculum for the Environmental Science Merit Badge and teaching the program on the day of the College. In December, almost 40 scouts attended the Environmental Science course. They were able to explore the history of environmental

science in the U.S., learn about water pollution in our environment, and examine study plots to compare natural vs. human-impacted areas. The Scouts also put together an Environmental Impact Statement for how a building structure of their choice might affect the environment. The Stormwater SMART instructors had a great time with the Scouts and are looking forward to teaching again at the Merit Badge College in April!

Right, our AmeriCorps Member, Lauren, teaches the Boy Scouts about watersheds.



## Alamance Creek Week



Get ready for Alamance County's first annual Creek Week! Alamance Creek Week is a celebration of local waters from March 17th-24th, 2018. Water-related events take place all week throughout the county, bringing residents together to better understand and appreciate their local watershed. Events fall into three categories: Fun, Learn, and Help. Stormwater SMART Staff are organizing and coordinating events, but we need your help to make Creek Week a big success! You can participate by planning and hosting a water-related event in your community or simply get involved by attending one of the events listed on our website. You can register an activity or event on our website by the **February 16th** deadline, and we will post your event information so everyone can join in on the fun. Whether you want to do something to help, to learn something new, or just have some fun, Alamance Creek Week will have something for you! For a full list of activities and events happening during Creek Week, visit [alamancecreekweek.org](http://alamancecreekweek.org). We hope to see you out enjoying our Alamance County waterways in March!



## MEMBER SPOTLIGHT: ALAMANCE COUNTY

Alamance County is home to approximately 158,000 residents spread out over 435 square miles of which 11 square miles is water. The county likely got its name from Great Alamance Creek, but its largest flowing water source is the Haw River that runs through the larger towns of Burlington, Haw River, and Graham, NC to name a few. The Haw River empties into Jordan Lake, which eventually feeds into the Cape Fear River. Alamance County is at the top of the Cape Fear River Basin, which is the largest river basin in NC. Alamance houses three large municipal reservoirs, including Lake Cammock, Lake Mackintosh, and Graham-Mebane Lake (formerly Quaker Lake). Graham-Mebane Lake is the source of drinking water for the citizens of Graham, Mebane, and Green Level. Lake Mackintosh is the surface water supply for drinking water in Burlington, providing 7.5 billion gallons of water since 1993.



Lake Mackintosh Reservoir

Alamance County has many organizations whose missions are to conserve and protect natural resources. The Little Alamance Creek Healthy Streams Cooperative is a collaboration between the City of Burlington, the City of Graham, and the NC Department of Transportation that seeks to improve water quality in the Little Alamance Creek Watershed. With the help of Stormwater SMART, the organization educates the public on stormwater issues and fosters environmental stewardship in hopes of preventing stormwater pollution. We partner with the LAC Healthy Streams Cooperative by providing an educa-

tional booth at public events and by traveling to schools in the area to present educational programming. Stormwater SMART maintains a large presence in the Alamance community and schools. In the last fiscal year, we were able to reach 3,780 individuals in the county through school programs, career fairs, paddle clean-ups, festivals, summer camps, and public meetings.



The Alamance County Soil & Water Conservation District also provides educational programming for youth and adults. They sponsor and mentor high school and middle school Envirothon Teams that compete state-wide and nationally. The competition includes problem-solving presentations and written field tests relating to soils and land use, forestry, aquatic ecology, and wildlife habitat. In addition to education, the Soil & Water Conservation District also administers cost-share programs that help landowners implement more conservation-conscious practices on their property. This includes installing a riparian buffer around nearby water sources to prevent non-point source pollution and improve overall water quality in the region.

Stormwater SMART is very engaged in the Alamance community as they host many festivals and fairs that we attend every year. This past year, we attended the Back to School Bash in Green Level, the Burlington Carrousel Festival, the Gibsonville Fall Festival, the Mebane Dogwood Festival, and the Mebane Winter Wonderland Craft Show. Visit our website and follow our social media to check out what county we will be in next!

Davidson County  
 Randolph County  
 Rockingham County  
 Archdale  
 Asheboro  
 Burlington  
 Elon  
 Gibsonville  
 Graham  
 Green Level  
 Haw River  
 Lexington  
 Mebane  
 Oak Ridge  
 Summerfield  
 Randleman  
 Reidsville  
 Thomasville  
 Trinity



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Piedmont Triad Regional Council  
 1398 Carrollton Crossing Drive  
 Kernersville, NC 27284  
 Phone: (336) 294-4950 or  
 (336) 904-0300  
 E-mail: stormwatersmart@ptrc.org

[www.stormwatersmart.org](http://www.stormwatersmart.org)



PIEDMONT TRIAD  
 REGIONAL COUNCIL

## THIS SEASON'S FOCUS: DEICING YOUR DRIVEWAY

Traditionally, we see neighbors and trucks on the roads laying down salt to help prevent any ice from accumulating. Salt works by lowering the freezing temperature of water, which in turn melts the ice. Melting the ice does help improve road conditions, but it also implicates problems in the environment. Did you know that just **1 teaspoon** of salt can permanently pollute **5 gallons** of water? Once all of that ice and snow melts, runoff carries the road salt into our local waters, which has negative impacts on water sources, wildlife, and vegetation.

Because laying down salt can hurt the environment, we've provided some environmentally safe ways to de-ice your road or driveway.

**1. Salt Alternatives** – Safe Paw is an example of a 100% salt-free ice preventer, and it's listed as being safe for both your children and your pets! **2. Simply Shovel** – Most people make the mistake of waiting for the snow to stop to begin shoveling. Waiting too long to shovel will make more work for yourself, and make it more likely that ice has already formed underneath the layers of snow. **3. Be Preventative** – If you need to use salt, be sure to put it down before a snow storm hits, and use it sparingly. Remember, a little goes a long way! **4. Get Crafty** – If you happen to be upgrading or replacing your driveway, you can



look into having a "snow melt mat" installed. Electric wires are used to heat up your driveway and melt the snow. It can be more costly to get it installed, but may be worth all the effort and aggravation that comes with shoveling your driveway! **5. Deal With the Ice** – If you didn't put down any salt or salt alternatives, and if you waited too long to shovel your driveway, you may just have to live with the ice for a little while. However, you can do it safely. Make sure you have a good pair of boots that give you a good grip on slippery surfaces, like your icy driveway.

Alternative methods to salting the roads are currently being reviewed, but it will take some time to replace the "salting method" entirely. So in the meantime, you can be stormwater smart by keeping these environmentally safe de-icing methods in mind as you prepare for the snow!

## LOOK FOR STORMWATER SMART AT AN EVENT NEAR YOU

- January 10 — Alamance Area Stormwater SMART Board Meeting
- January 25 — Keep Davidson County Beautiful Meeting
- February 7 — Keep Randolph County Beautiful Meeting
- February 14 — Randolph County Stormwater SMART Board Meeting
- February 24 — Raise the Woof, High Point
- March 8 — Science Night with Parents, Archdale Elementary School
- March 14 — Davidson County Stormwater SMART Board Meeting
- March 17 — Haw River Clean-Up-A-Thon
- March 17- 24 — Alamance Creek Week, Alamance County  
 Visit [alamancecreekweek.org](http://alamancecreekweek.org) for an updated schedule of events happening all week long!
- April 7 — Boy Scouts of America Merit Badge College
- April 28 — Mebane Dogwood Festival

Stormwater SMART was created by the Piedmont Triad Regional Council (formerly Piedmont Triad Council of Governments) to help Phase II communities comply with National Pollution Discharge Elimination System (NPDES) and Jordan Lake Public Education and Outreach require-