The Back River & Chesapeake Bay Waterways

NASA Langley is surrounded by the Back River and the Chesapeake Bay. The Back River is a small 2-mile-long tributary located between Hampton and Poquoson that flows into the Chesapeake Bay. The Chesapeake Bay is a 200-mile-long estuary from Maryland to Norfolk, Virginia.

In 2010, the Environmental Protection Agency (EPA) created pollution limits in the Chesapeake Bay for nitrogen, phosphorus, and sediment. These pollution limits are the maximum amount of pollution a "dirty" or impaired waterway can hold and are known as Total Maximum Daily Loads (TMDLs).

The Chesapeake Clean Water Blueprint is implemented by six states, including Virginia, and the District of Columbia; the Blueprint outlines pollution reduction goals to be fully fulfilled by 2025. Pollution reduction milestones (at the state level) have been committed to every two years. If the Blueprint is successful, the Chesapeake Bay will be removed from the impaired waters list.

Chesapeake Bay Foundation – Blueprint Infographic

	WASTEWATER	URBAN/ SUBURBAN RUNOFF	AGRICULTURE	SEPTIC	OVERALL
VIRGINIA NITROGEN	ON TRACK	OFF TRACK	OFF TRACK	OFF TRACK	**ON TRACK**
VIRGINIA PHOSPHORUS	ON TRACK	OFF TRACK	OFF TRACK	N/A	**ON TRACK**

According to the *2021 State of the Blueprint* report, Virginia is mostly on track to reach its 2025 pollution reduction targets (see figure above). The Commonwealth is on track to meet wastewater goals as wastewater treatment upgrades were completed in the form of laws to require additional pollution reductions from treatment facilities and addressing septic sources. Agriculture represents 70 percent of the remaining pollution reductions. As you can see, Virginia still has a long way to go with urban/suburban and agriculture runoff goals!

What Can Be Done?

NASA Langley utilizes a Municipal Separate Storm Sewer System (MS4) Permit to regulate stormwater discharge around Center. The MS4 program is designed and implemented to minimize the discharge of pollutants from the Center's storm sewer system as much as possible to protect the water quality in the Bay and Back River.

NASA Langley takes steps to implement Best Management Practices (BMPs) to assist Virginia in reaching the TMDL goals.

With every new project on Center, NASA Langley identifies and plans ways to convert land use from an impervious surface back to pervious. Converting land use from a once- hard asphalt back to a green, pervious space helps earn pollutant load credits. Credits refer to a quantity of pollutant reduction achieved by BMPs. A few examples of BMPs on Center are:

- Reforestation in our North 40 areas
- Tree Filter Boxes around Center
- Bioretention Units at new buildings
- Permeable Pavers in parking lots and sidewalks
- Green Roof at B2101

NASA Langley's Environmental Management Office (EMO) also utilizes its Grounds Maintenance contract in the Center's initiatives for pollution reduction stormwater control/management. Grounds maintenance assists with the *NASA Back River TMDL Action Plan* that states existing and allowable TMDLs. This Action Plan has been developed to specifically address bacterial contamination/fecal coliforms in the Back River instead of the nitrogen, phosphorus, and suspended sediment addressed in the Chesapeake Bay TMDL.

The largest contributor to bacterial discharge at NASA Langley is from wildlife (i.e., deer, racoon, muskrat, fox, ducks/geese/miscellaneous birds, and coyotes). NASA Langley Grounds supports the Action Plan implementation by removing and properly disposing of animal carcasses, stormwater ditch cleaning with vegetation removal, and cleaning storm drains twice a year to remove wildlife waste and organic debris, ensuring removal from the waterways. Lastly, NASA Langley policy is to not feed wildlife. You can help in our pollution prevention endeavors by keeping all picnic areas, tables, and dumpsters free of litter.

SAVE the Bay

Every day steps to reduce pollution for the Chesapeake Bay and Back River:

At Work

- **Keep Picnic Tables & Dumpster Areas Clean:** Keeping the picnic areas and dumpsters free of litter will deter wildlife and reduce wildlife bacterial coliform pollution.
- **Do Not Feed Wildlife:** Eliminate unnatural food sources, and never feed wildlife.
- **Properly Dispose of Chemicals:** Contact NASA Langley EMO or call *5-DRUM* to properly dispose of excess or used chemicals.
- **Notify EMO of Spills:** Contact EMO if water pollution has occurred. In an emergency or spill, always call 911 (from a Center phone) or 757-864-2222 (from a cell phone).



At Home

- **Buy Local Foods:** Buying local food minimizes transportation emissions.
- **Properly Dispose of Chemicals:** Never dump chemicals like paints, solvents, or preservatives down any drain. Storm drains flow directly to the Bay. Utilize local waste collection programs.
- **Do Not Feed Wildlife:** Reduce unnatural food sources in your yard, including where you store your trash bin.



In Your Yard

- **Plant A Tree:** Trees provide oxygen and will soak up fertilizers and other chemicals that can potentially seep into waterways.
- **Use Fertilizer/Pesticides Responsibly (if needed):** Fertilizers and pesticides are a large source of nitrogen and phosphorous in polluted runoff. Excess fertilizer/pesticides not absorbed by plants can be carried by runoff into nearby waterways or seep into groundwater. For more information see Chesapeake Bay Program Fertilization flyer.
- **Be A Bay Friendly Yard:** Use native species to landscape. Native grasses and plants do not require frequent water or fertilizing.


Let's work together to keep our water clean!

Call*: Ande Remington (757.864.8332), Sarat Calamur (757.864.4791) or Jazmin Argarin (757.864.7031) for water quality concerns

*In an emergency or spill, always call 911 (from a Center phone) or 757.864.2222 (from a cell phone)