

# Construction Stormwater Management at NASA LaRC

The demolition of old facilities and construction of new ones continues across the Center. Currently, we have demolition starting at the 1192 complex as well as the old cafeteria building (1213). In addition, we expect the demo of the ALDF track and associated buildings to take place in 2015. In addition to the demos, we expect construction to begin on the Computational Research Facility this spring. All of this activity is a planned part of LaRC's comprehensive 20-Year Center Revitalization (ViTAL) Plan that will sustain or enhance the Center's core capabilities through repair-by-replacement or rehabilitating existing buildings. The revitalization plan includes six new state-of-the-art facilities, renovation of critical infrastructure, and demolition of non-essential assets. This effort is intended to modernize the center core of LaRC, better align LaRC's facilities with its future mission requirements, and significantly reduce the Center's infrastructure and operations and maintenance costs. These new facilities focus on more efficient building designs and new technological advances within the buildings to help ensure that LaRC is an innovative and forward-thinking research center. Many of the buildings are being built to better control stormwater, they are utilizing highly efficient heating and cooling equipment, and the list goes on.

All this positive redevelopment does carry with it environmental risks during the demolition and construction of these facilities. Construction sites present unique environmental challenges, especially when it comes to erosion and sediment control and waste management. One of the most significant pollutants of concern in the Chesapeake Bay is sediment. While many may not think of dirt or sediment as a pollutant, it certainly is. More than 18.7 billion pounds of sediment are believed to enter the Chesapeake Bay each year according to the Virginia Department of Conservation and Recreation.

Excess sediment suspended in the water is one of the leading causes of the Chesapeake Bay's poor health. The culprits are the tiny clay and silt-sized fractions of sediment. Because of their small size, clay and silt particles often float throughout the water, rather than settling to the bottom, and can be carried long distances during rainstorms. When there is too much sediment in the water, the water becomes cloudy and muddy-looking. Cloudy water does not allow sunlight to filter through to bay grasses growing at the bottom of the Bay's shallows. Just like plants on earth, bay grasses need sunlight to grow; without it, these underwater grasses die, which affects the young fish and blue crabs that depend on bay grasses for shelter.

Construction sites contribute to this sediment problem through the process of soil erosion because of the amount of land disturbance that occurs. Soil erosion is the process of detachment and transportation of soil materials by water, wind, ice and gravity. While "geologic" erosion naturally produces about 30 percent of the total sediment in the United States, "accelerated" soil erosion from man's use of land accounts for the remaining 70 percent. Although construction by volume does not cause most sediment pollution, it is the most evident and damaging because of the rate at which it

occurs. Erosion associated with construction activities can be 200 times greater than that from cropland and 2,000 times greater than that naturally occurring in woodlands.

LaRC's Standard Practice Environmental and Engineering Management Branch (SPEEB) tries to focus on the successful minimization of these erosion impacts by requiring the implementation of erosion and sediment control measures on construction sites to prevent soil movement/loss and eliminate appreciable damage to off-site receiving channels, property, and natural resources. On LaRC construction sites you'll see controls in place to minimize sediment runoff such as silt fences, inlet protection, rock entrances, etc. SPEEB also regularly inspects construction sites and ensures that controls are in place and maintained. You can help. SPEEB strives to keep an eye on construction activities, but sometimes we miss things. SPEEB regularly inspects larger job sites (over 2,500 square feet in total size) such as big construction projects like 2101, 2102 and the upcoming CRF building, yet there are a lot of smaller jobs that disturb land and could cause sediment pollution that we may miss. **If you are ever on Center and see dirt and sediment tracking on roads or discharging to a ditch, storm inlet, or conveyance channel, please contact SPEEB immediately at 4-7517 or 4-6236.**

