

THE CRANEY ISLAND CONNECTION

CRANEY ISLAND EASTWARD EXPANSION NEWS AND INFORMATION

VOLUME 4 ISSUE 9

APRIL 2011

Project Team Set to Continue Construction

Specialized Drainage Equipment Tested Successfully

At the heart of the Craney Island Eastward Expansion project are state-of-the-art engineering practices that require testing and quality control before each design or construction stage commences. Throughout the project, the engineers with the Virginia Port Authority and the Army Corps of Engineers have continued to ensure that each stage goes exactly according to plan.

Now that the first stage of sand lifts have been placed along the Expansion's south and division cross dike footprints, the project team will begin installing Prefabricated Vertical Drains (PVDs). Also known as wick drains, the PVDs will be installed into the lifts of sand and the soft ground underneath them. They will drain water from the soft and saturated subsurface clays and speed up the consolidation of the material.

The wick drains are being assembled by American Wick Drain and installed by U.S. Wick. A barge fabricated by contractor W.F. Magann for the project will install the drains every five feet via an excavator driving on a track built on top of the barge. At this time, the wick drains will be installed into the dike footprints. Later they will be installed into the dredged material that will lie atop the dikes to form land for the future marine terminal. The installation procedure was tested and successfully completed several trial runs.



The excavator driving on top of the barge inserts the wick drains by drilling through the dike's sand lifts with a 160-foot long steel mandrel.



One roll of wick drains can be as much as 1,000 feet long.

Wick drains consist of a central plastic core, which functions as a free-draining water channel, surrounded by a thin geotextile filter jacket. A typical wick drain is approximately 4 inches wide and 1/8 inch thick. So far, 3.6 million linear feet of wick drains have been shipped to the project site in Portsmouth. This is only a portion of the approximately 12 million linear feet of wick drains - about 2,200 miles - that will be needed over the course of the entire project. That's enough to stretch nearly all the way across the country!

Production installation of the wick drains is expected to begin in May and will be complete by October. Settlement plates will then be installed to monitor the rate at which the material consolidates.

This first stage of PVD installation is one of the largest PVD projects on the east coast. At full buildout, the Expansion will be the largest PVD installation project in the country.



THE CRANEY ISLAND CONNECTION IS PUBLISHED BY THE VIRGINIA PORT AUTHORITY AND THE U.S. ARMY CORPS OF ENGINEERS, TO PROVIDE READERS WITH INFORMATION ABOUT DEVELOPMENT OF THE CRANEY ISLAND EASTWARD EXPANSION. WE INVITE READERS TO PROVIDE COMMENTS AND SUGGEST TOPICS FOR FUTURE CONSIDERATION. FOR FURTHER INFORMATION OR ADDITIONAL COPIES, PLEASE CONTACT:

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Naval Vessels Able to Travel River Safely with CIDMMA's Help

The existing Craney Island Dredged Material Management Area (CIDMMA) in Portsmouth, under the operation of the U.S. Army Corps of Engineers, Norfolk District, continues to provide a low-cost placement site for dredging operations in the Elizabeth River.

On April 15th, deepening operations began on portions of the river, starting at Lambert's Point in Norfolk. The Corps' contractor, Norfolk Dredging Company of Chesapeake, will continue on to Norfolk Naval Shipyard in Portsmouth over the next 18 months.

In total, approximately 3 million cubic yards of material will be removed from the river. The project will allow the Navy's nuclear-powered aircraft carriers the ability to traverse from Norfolk Naval Station to the Norfolk Naval Shipyard safely at all times of the day.

For three-tenths of a mile, from Lamberts Point to the Navy Deperming Station, a 600-foot-wide portion of the federal navigation channel will be deepened from 40 feet to 50 feet. Another four-and-half-mile, 600-foot-wide portion of the channel, from the deperming station to the naval shipyard, will be deepened from 40 feet to 47 feet.



CIDMMA's close proximity to Norfolk Naval Station, as well as to the Port of Virginia's marine terminals and the many private ports along the Elizabeth River, saves its users money every time they deposit dredged material from the river into it. If not for Craney Island, users would have to dispose of the material in an ocean disposal site, which would be much more expensive due to the longer travel distance.