

# THE LOWER PASSAIC RIVER RESTORATION PROJECT

## DECEMBER 2005

### ENVIRONMENTAL DREDGING AND SEDIMENT DECONTAMINATION PILOT STUDIES

The New Jersey Department of Transportation (NJDOT), the U.S. Environmental Protection Agency (USEPA) and the U.S. Army Corps of Engineers (USACE), in partnership with the New Jersey Department of Environmental Protection (NJDEP), the National Oceanic and Atmospheric Administration (NOAA), and the U.S. Fish and Wildlife Service (USFWS), are conducting pilot studies to evaluate environmental dredging and sediment decontamination technologies on sediments in the Lower Passaic River in New Jersey. The partner agencies will use the results of the pilot to evaluate sediment removal and treatment options as one method of cleaning up and restoring the Lower Passaic River.



#### **Project Background**

The USEPA, USACE and NJDOT have formed a partnership with the NOAA, USFWS and NJDEP to carry out the Lower Passaic River Restoration Project. The partner agencies are bringing together the authorities of the Superfund program, the Water Resources Development Act, the Clean Water Act and other laws to develop a comprehensive watershed-based plan for the cleanup and restoration of the Lower Passaic River Basin.

The Lower Passaic River is a 17-mile tidal stretch from the Dundee Dam to the confluence with Newark Bay. It has a long history of industrialization, which has resulted in degraded water quality, sediment contamination, loss of wetlands, and abandoned or under-utilized shoreline properties.

Goals of the project:

- Improve Water Quality
- Restore Degraded Shorelines
- Restore and Create New Habitats
- Clean Up Contaminated Sediments

#### **Environmental Dredging Pilot Study**

The specific goals of the environmental dredging pilot study are to collect data on environmental dredging technology performance and productivity and on the extent of sediment re-suspension in the Lower Passaic River during dredging operations. Information gained from the dredging pilot study will help guide future technical evaluations and potential selection of the most suitable environmental dredging techniques for the Lower Passaic River.



During the week of December 5 - 9, 2005 approximately 5,000 cubic yards of contaminated sediments will be dredged from a 1.5 acre area in the Passaic River west of the New Jersey Turnpike bridge in the downtown section of Newark, NJ. As part of the study, the partner agencies, along with the U.S. Geological Survey, Rutgers University, and various consultants will collect extensive water quality monitoring data prior to, during, and after the dredging to evaluate the extent of sediment re-suspension in the Lower Passaic River caused by environmental dredging operations as compared to existing suspended sediment conditions in the river.

## Sediment Decontamination Pilot Study

The specific goals of the sediment decontamination pilot study are to demonstrate that contaminated sediments from the Lower Passaic River can be handled safely, decontaminated effectively, and be used to manufacture beneficial use products such as cement and soil. Environmental and economic data, as well as experiences gained through the pilot study, will greatly improve the partner agencies' ability to potentially apply sediment treatment technologies on a larger scale in future sediment cleanup efforts in the Lower Passaic River.

Dredged sediments will be transported to the Bayshore Recycling Inc. (Bayshore) facility located on the Raritan River in Keasbey, NJ. There the sediments will be off-loaded to the *Valgocen*, a 730-foot bulk carrier vessel owned by Bayshore. The *Valgocen* will serve as a temporary storage location for the dredged sediments, as well as a materials handling facility. This winter, the 5,000 cubic yards of sediments will be removed from the *Valgocen* and subjected to two different sediment decontamination technologies, both of which are currently undergoing testing through the USEPA/NJDOT New York/New Jersey Sediment Decontamination Program.

## Sediment Washing Technology Evaluation

During a one-week period in January 2006, BioGenesis Enterprises, Inc., will treat approximately 2,500 cubic yards of Passaic River sediments using its patented sediment washing technology. Sediment washing operations will be performed at the Bayshore facility in Keasbey. Sediment washing strips contaminants (metals and organics) from sediment particles using a specially-developed biodegradable detergent and impact forces from high-pressure water jets. Manufactured soil is produced during the

treatment process. The soil could be used in a number of land-based applications, such as upland remediation and landscaping.



## Thermal Destruction Technology Evaluation

In early 2006, Endesco Clean Harbors will treat approximately 2,500 cubic yards of Passaic River sediments using its patented Cement-Lock thermal destruction technology. This treatment process will be implemented at the International-Matex tank terminal in Bayonne, NJ. Construction-grade cement is produced during the treatment process. The cement could potentially be used in the

construction of sidewalks, parking lots and driveways. The Cement-Lock thermal destruction technology uses a rotary kiln operating at temperatures up to 2600°F to completely melt the sediment and proprietary modifiers. The molten mixture is rapidly cooled to immobilize inorganic contaminants. The result is a glassy, granular material called "ecomelt." The ecomelt is ground and blended with Portland cement to produce construction-grade blended cement. This process is equipped with pollution control equipment that is able to continuously remove potential pollutants from the system's emissions.

For more information visit the project Web site at [www.ourpassaic.org](http://www.ourpassaic.org) or contact:

### **Environmental Dredging Pilot:**

Lisa Baron, Project Manager, Office of Maritime Resources, NJDOT @ 609-530-4779 or [lisa.baron@dot.state.nj.us](mailto:lisa.baron@dot.state.nj.us)

### **Sediment Decontamination Pilot:**

Eric Stern, Regional Contaminated Sediment Program Manager, USEPA @ 212-637-3806 or [stern.eric@epa.gov](mailto:stern.eric@epa.gov)

Scott Douglas, Project Manager, NJDOT @ 609-530-4773 or [scott.douglas@dot.state.nj.us](mailto:scott.douglas@dot.state.nj.us).

### **General Information About the Lower Passaic River Restoration Project:**

Scott Nicholson, Project Manager, USACE @ 917-790-8216 or [scott.r.nicholson@nan02.usace.army.mil](mailto:scott.r.nicholson@nan02.usace.army.mil)

Alice Yeh, Project Manager, USEPA @ 212-637-4427 or [yeh.alice@epa.gov](mailto:yeh.alice@epa.gov)

Lisa Baron, Project Manager, Office of Maritime Resources, NJDOT @ 609-530-4779 or [lisa.baron@dot.state.nj.us](mailto:lisa.baron@dot.state.nj.us)