



Corps Hurricane Response

Task Force Hope Status Report

October 30, 2006

Escalating construction & labor costs global issue

Hurricanes contribute to dramatic cost increases in building materials and labor in local markets

“Construction and labor supplies have been tight for several years, with material costs increasing much faster than overall inflation.”

- Michael Carliner, Vice President of Economics for the National Association of Home Builders

“There has been a noticeable increase in the cost of raw materials and construction supplies over the past few years, but especially noticeable in the past nine months since Hurricanes Katrina and Rita.”

- Robert S. Boh, President, Boh Bros. Construction Company

By Susan Spaht

As the U.S. Army Corps of Engineers settles in for the arduous task of repairing and building the 100-year hurricane protection system in southern Louisiana, it is faced with a challenge that has become global in nature: *the rising cost of construction materials.*

Since 2004, the costs of raw materials and construction supplies have increased dramatically worldwide, but it is more pronounced in southern Louisiana - due to hurricanes Katrina and Rita - than the national average.



Rebar, H-beams and concrete were the main construction materials used for repairs and improvements of the Inner Harbor Navigation Canal floodgate. (USACE Photo)

Construction demands and their increased risks resulted in fewer bidders for Corps projects, bids being significantly higher than historically-based estimates, and owners and agencies having to reevaluate their work programs.

Key market drivers:

With constantly changing prices, contractors have passed project risks on to owners in the form of higher construction costs. Key market drivers are:

- Energy costs have spiked significantly
- Insurance and bonding costs are speculative
- Lack of skilled workers to meet the demand
- Global material demand exceeding supply

- Natural disasters: Hurricanes Katrina and Rita

When markets experience rapid growth in demand for construction services, the supply of contractors, materials and labor cannot readily respond. This leads to increased costs for resources, and shortages of both labor and materials.

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Construction, continued from page 1

Here are some U.S. cost comparisons from 2004 to 2006:

- Concrete.....up 88%
- Copper..... ..up 235%
- Diesel fuel..... ..up 91%
- Natural gas.....up 107%
- Drywall.....up 91%
- PVC pipe.....up 37%

Corps Takes Action:

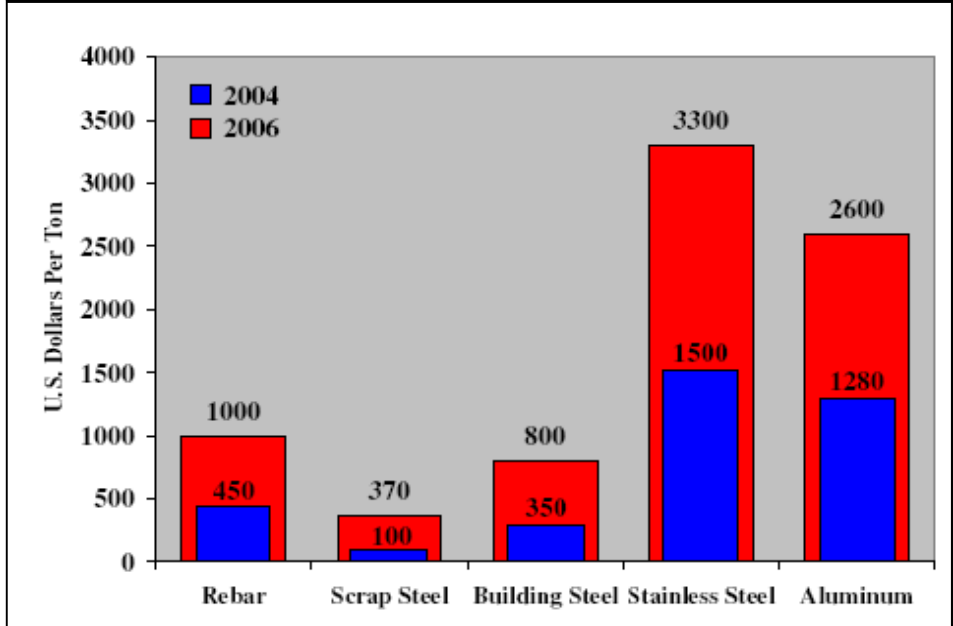
As the prices of materials and the need for construction and improvements to infrastructure continue, cost estimators have to develop new ways for presenting accurate projections despite a dynamic marketplace. In order to provide better estimates, the U.S. Army Corps of Engineers has taken the following steps to project a more precise dollar figure for projects:

- Performing value engineering studies – review plans and specifications to ensure all cost effective alternatives are considered
- Utilize commodity supply contracts (borrow soil, steel sheet piles and H-piles) to get bulk pricing and remove contractor risk
- For work with high and uncertain risks, use cost reimbursable contracting techniques
- Use Design/Build contracts for complicated projects elements
- Partnering with industry leaders to better understand market conditions in order to create better cost estimates 



Closure gates under construction at 17th Street Canal. (USACE Photo)

Construction projects locally and worldwide being faced with cost containment issues



This bar chart illustrates cost comparisons of building materials in the United States for years 2004 vs. 2006. Escalating construction costs have become a challenge to builders locally and worldwide in recent years. (USACE Illustration)

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Debris Removal in Louisiana	(504) 681-2317	Louisiana Recovery Field Office

The *Status Report Newsletter* supports the information program for Task Force Hope and its stakeholders. It also serves as the primary tool for accurately transmitting the hurricane recovery work to stakeholders. This is an online publication and open to public distribution. This issue and past issues can be found at: www.mvn.usace.army.mil/hps

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Value Engineering integral part of design process with U.S. Army Corps of Engineers

By Susan Spaht

According to an official Corps of Engineers manual, Value Engineering is: "A function-oriented, systematic team approach to balance performance and cost... for the purpose of improving reliability, quality, performance, safety and life cycle costs."

Value Engineering is an integral part of the design process used by the U.S. Army Corps of Engineers for most construction projects.

According to Wayne Urbine, a Technical Coordinator under contract with the Corps of Engineers in New Orleans, "the purpose of Value Engineering, as its name implies, is to build better, smarter projects and save the taxpayers' money."

When Value Engineering is applied to a proposed engineering design it could result in such suggestions as:

- Use different materials
- Use different designs
- Use different location
- Use different systems
- Ways to eliminate some maintenance costs
- Re-orienting structures
- Using different energy source
- Combining projects
- Separating projects

In the New Orleans District, as with all Corps of Engineers districts,



Wayne Urbine, front, a retired 38-year employee of the Corps of Engineers is a Technical Coordinator. Behind him is Capt. Jason Legro, who works closely with Urbine on Value Engineering issues. (USACE photo by Susan Spaht)

Value Engineering is mandatory on all authorized construction projects exceeding \$10 million.

On construction projects over \$2 million and up to \$10 million, Value Engineering is usually performed but can be waived under certain constraints such as emergency situations.

"The Corps of Engineers created the Office of Value Engineering Studies (OVEST)," said Urbine, "to emphasize and assist in consistency of Value Engineering studies. The Hur-

Pump Capacity Report

17th Street Canal.....4,060 cfs
London Ave. Canal....2,800 cfs
Orleans Ave. Canal... 2,200 cfs

As of Oct. 26, 2006

Note: The Status Report Newsletter will give weekly reports on the pump capacity of the three outfall canals under construction. For more details, please visit this website:

<http://www.mvn.usace.army.mil/hps/pumpcomp.htm>

Pump Testing Delays New Capacity at 17th Street Canal

Oct. 31 was the target date for pumping capacity at the 17th Street Canal to increase from 4,060 cfs to 5,200 cfs. However, that goal is being temporarily delayed by additional pump tests at the factory and at the canal.

Reaching 5,200 cfs remains the immediate target and that capacity will be reached upon completion of testing and installation of the pumps. The delay allows us to perform quality control testing on the pumps before installation, insuring the pumps function to design standard.

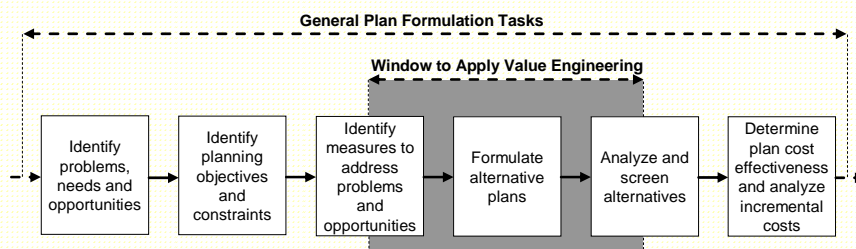
ricane Protection System (HPS) projects utilize OVEST to a large degree," he added.

Engineering specialists with OVEST work closely with all Corps districts to help facilitate design improvements. "When you've got every aspect of a project design scrutinized from all possible angles, everyone benefits," added Urbine.

According to Urbine, approximately 95 percent of the HPS projects in New Orleans are over \$10 million, therefore, most of the construction work has been subjected to (or will be subjected to) Value Engineering.



General Scheduling of Value Engineering in the Planning Process



(USACE Illustration)

Faces of Hope

Corps of Engineers looking for soil

Borrow Pit: *an excavated area where material has been dug for use as fill at another location*



Tom Waguespack checks a borrow site map at his Corps of Engineers office. (USACE photo by Susan Spaht)

By Susan Spaht

The U.S. Army Corps of Engineers New Orleans District needs soil. With 350 miles of levees in its jurisdiction, the District needs a huge amount of soil for building or rebuilding the Hurricane Protection System levees.

To get the needed soil, the New Orleans District has created a Borrow Team to work with contractors and land owners. Tom Waguespack is an assistant to the Project Manager for the Borrow Team.

Waguespack, a 35-year employee of the Corps, is a Civil Engineering Technician with the Geotechnical Branch of the Engineering Division. "We're going to need a lot of borrow material over the next four years," he said, referring to the Corps' plan to



Tom Waguespack, right, verifies the coordinates on a possible borrow pit with two borrow supply contractors. Waguespack is part of a team of Corps employees who are responsible for finding the right borrow material for levee work. (USACE Photo)

bring the Hurricane Protection System up to the 100-year level of protection in the next few years.

But it's not just regular soil that is needed. The Corps is actually looking for **clay**.

"Soil can often contain large amounts of sand," said Waguespack, "and sand is a granular material." The Corps doesn't want sandy soil because sand allows water to seep in. Not good for building levees which must keep water out.

So the Corps needs clay. And it's not just regular clay that is needed.

"There is lean clay and there is fat clay," explained Waguespack, "and we're looking for fat clay." Clay is

made of platelets – or sheets - and those sheets adhere to each other and that is what prevents water from seeping through. Perfect for levees.

The Borrow Team looks for very specific soil properties in the clay, and they require strict scientific methods for testing it. "We require Atterberg tests which define the liquid content and the plastic limits of the soil," Waguespack explained. "We also check for organic content and moisture content."

Before Hurricane Katrina, the Corps could usually find the borrow material it needed close to the levee being built or repaired. After Katrina it's a different story. "Due to the amount

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Inspecting possible borrow pits is part of the job for Corps of Engineers employee Tom Waguespack, center. (USACE Photo)

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of soil we're looking for and the time-frame we need it, we sometimes have to go as far as out of state for our borrow," Waguespack explained.

The Corps is looking for all the borrow material it can get, and it has been advertising through the newspaper, the Corps website and through contractor organizations to find it. There are basically two ways for the Corps of Engineers to get the borrow:

1. **Government-furnished borrow pit.** This is where the Corps handles the soil borings, permits and all clearances of the borrow site; procures the site; then advertises it for levee construction.
2. **Contractor-furnished borrow pit.** This is where a contractor handles the soil borings, site procurement, permits and clearances of the borrow site and, after getting government approval, he can use that material for building or repairing the levee.

For more information on the collection of borrow and the requirements involved, visit this website:

<http://www.mvn.usace.army.mil/borrow/bizcards/Results/editor/index.asp>



Vice Pres. Cheney visits New Orleans



On Oct. 12, Vice President Dick Cheney, left, met with Brig. Gen. Robert Crear, right, Commander, Mississippi Valley Division, U.S. Army Corps of Engineers, to discuss the status of the Hurricane Protection System. Brig. Gen. Crear gave the vice president an update on the Corps' progress.

(USACE Photo by Tina Dixon-Williams)

Hurricane contract awarded for West Bank

First post-Katrina levee elevation contract, the first of many expected in months ahead

The U.S. Army Corps of Engineers has awarded a \$16.9 million contract to elevate about three miles of hurricane levee on the West Bank of metropolitan New Orleans.

"This is the first contract to be awarded since Hurricane Katrina for the West Bank and Vicinity Hurricane Protection Project," said Mike Stack, the Corps' project manager. "This is the first of many levee contracts on the West Bank that we expect to award in the months ahead."

The contract was awarded to Manson Gulf LLC of Houma to elevate the levee by about four feet from the Lake Cataouatche Pump Station northwest to U.S. 90, a little south of Waggaman.

Under post-Katrina legislation, the fed-

eral government will pay for 100 percent of the project. The Corps is working in coordination with its non-federal partners, the Louisiana Department of Transportation and Development and the West Jefferson Levee District

In addition to the levee section, the construction will include the relocation of an interior drainage canal and the construction of wave and stability berms. The latter are low-angled levee components that, respectively, protect the levee by reducing storm-surge energy and by providing weight to support the levee.

The project will require an estimated 1.2 million cubic yards of material. About 760,000 cubic yards of clay will be needed for the levee and berms, and another 440,000 cubic yards of sand to fill the drainage canal.

