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THE POLITICS OF FLOOD CONTROL

Levees Weakened as New Orleans Board, Federal Engineers Feuded

December 25, 2005 | Stephen Braun and Ralph Vartabedian | Times Staff Writers

NEW ORLEANS — When the U.S. Army Corps of Engineers and New Orleans levee officials joined forces in July 1985 to protect the city from a long-feared hurricane, the two agencies could not agree on how to proceed. It was the beginning of a dysfunctional partnership that ushered in two decades of chronic government mismanagement.

Corps engineers wanted to install gates in front of the city's three main internal canals to protect against violent storm surges from Lake Pontchartrain. The Orleans Levee District, the city's flood protection agency, preferred to build higher flood walls for miles along the canals. For five years, neither side yielded.

But in October 1990, a deft behind-the-scenes maneuver by the levee board forced the corps to accept higher flood walls. As Senate and House negotiators gathered to craft the Water Resources Development Act of 1990, Louisiana's congressional delegation quietly inserted a lobbyist's phrasing ordering the corps to raise the levee walls.

"It was stealth; legislative trickery," recalled New Orleans lawyer Bruce Feingerts, who lobbied for the levee board. "We had to push every button at our disposal."

The gambit was a crucial victory over the corps by the Orleans district, the most powerful and well-financed among 18 Louisiana boards that supervise more than 340 miles of storm levees across the hurricane-prone southern half of the state. The corps had to abandon its floodgate plan and shoulder 70% of the project's costs while allowing the Orleans board to hire its own consultants to design the strengthened levees.

But their fractious partnership proved disastrous. While the corps and the Orleans board settled into an acrimonious 15-year relationship, spending \$95 million to buttress the city's canal levees, their shared supervision failed to detect crucial weaknesses inside the flood walls before Hurricane Katrina struck.

"No one felt the urgency, none of us," said Lambert C. Boissiere Jr., a former Orleans levee commissioner. "The corps and our own engineers told us the levees were strong enough. They were all dead wrong."

Structural inspections were cursory. Maintenance was minimal. A confusing regulatory patchwork of ownership over the levees and canals blurred the lines of authority -- all shortcomings cited by independent engineering teams analyzing the levees' collapse.

Although the corps and federal officials kept a tight leash on funding, the Orleans board spent money lavishly, diverting resources to high-stakes investments such as casinos and marinas. The levee board's unusual authority to hire its own consultants allowed its officials to select firms that regularly gave campaign contributions to politicians with influence over levee board business.

Left unchecked because of repeated failures by the Louisiana Legislature to reform the levee board system, critics say, the Orleans district operated its own patronage system.

"The New Orleans board had the reputation of being one of the worst -- by worst, I mean more political than professional," said former Louisiana Gov. Charles E. "Buddy" Roemer III, a Republican whose Orleans board appointees launched the 1990 power play in Congress.

When Katrina hit in late August, floodwater from Lake Pontchartrain burst through the walls of the 17th Street and London Avenue levees, where steel foundations gave way in porous soil. Storm water also flowed through a 200-foot gap in the Orleans Avenue levee, a section left unfinished due to Bush administration funding cuts.

Last week, the corps announced plans to seal off the three broken canals with permanent barriers and relocate New Orleans' pump houses from inside the city to the lakeshore -- at a cost of \$3.1 billion. The corps' move to abandon the old flood-control system it built with the Orleans board came as a bitter coda to a 20-year relationship.

'Least Cost' Project

Money was the most pressing concern in July 1985, when Orleans levee officials signed "assurances" -- an official commitment -- to join the corps in buttressing New Orleans' hurricane protection system.

The corps' traditional preference for a "least cost" project made floodgates a far more attractive option -- at \$20 million -- than the \$60-million estimate for raising the levees.

"We were caught between the [Reagan] administration saying keep the cost down, and Congress and New Orleans officials saying spend more," said Fred H. Bayley III, then the corps' director of engineering for the Lower Mississippi Valley Division.

But the corps' proposed "butterfly-valve gate" -- a concrete-and-steel barrier that would open to let out water and close to seal off storm surges -- was untested in high storm conditions.

The corps' plan also clashed with the city's practice of using its system of antiquated pump stations -- two miles inside the city -- to force floodwater out into the lake through the canals. Officials with the New Orleans Sewerage and Water Board who supervised the canals feared that in a major hurricane, the gates would jam with debris and canals would back up, submerging the city.

Corps engineers had been fixated on floodgates since the 1970s, when the agency proposed using towering gates to block off surges at the far eastern end of the lake. That plan was the corps' response to Hurricane Betsy, a storm that hit New Orleans in 1965, swamping the city's Lower 9th Ward, killing at least 75 people and causing more than \$1 billion in property damage.

Louisiana's congressional delegation, led by Democratic Sens. Russell Long and J. Bennett Johnston, won legislative approval for the barrier plan. But by the early 1980s, the project was shelved, scuttled by a judge's order, opposition by environmental and business groups, and bickering levee boards.

The corps, convinced that raising levees was risky, shifted its plans, proposing to build gates at the lakeshore. Higher flood walls required deep sheet piles -- heavy-gauge steel foundations -- sunk into the soft coastal soil to brace against water pressure.

To raise the levees properly, corps engineers warned that houses along the 17th Street and London Avenue levees might have to be razed. But the corps refused to absorb the costs, and the levee board shied from taking on neighborhood groups -- a pivotal early error.

Eager to show off their prototype, corps engineers herded city officials into the Army's cavernous Hydraulics Lab in Vicksburg, Miss. The hinged doors opened and closed easily. But city sewerage officials peppered the engineers with doubting questions.

Indeed, according to a November 1987 corps report, the "original design did not perform as intended." Only when corps engineers altered the model, "the gate design performed satisfactorily."

Despite the skepticism, corps officials moved firmly to clear a path for the floodgate plan. The corps ruled that it would not pay for raising the levees because the city's canals were used for local drainage, not navigation -- beyond the scope of the corps' authority over river and waterway projects.

The decision forced Orleans levee officials to gamble. Although the corps refused to pay for raising the levees, the Lake Pontchartrain, La., and Vicinity High-Level Plan was still in its planning stages. Under the drawn-out design process, levee officials still had the ability to research their own alternative -- at the board's cost.

They aimed to keep the levee-raising option alive by hiring their own design consultants, then using political leverage to win their levee-raising plan later.

Involving Politics

From the Orleans levee office on Stars and Stripes Boulevard to the governor's mansion in Baton Rouge, Louisiana's political veterans knew the unstated rules of the levee-building game.

There were scores of qualified civil engineers in New Orleans, all angling to score lucrative public contracts. Many firms boasted former corps engineers who knew how the corps worked and had friends still in the service.

"The corps had these relationships with the levee boards," Roemer recalled acidly. "In their conversations, the levee board would ask the corps: 'What do we need to do to have safety and economic development?' And the corps would give unofficial answers. Then the levee board would hire a consulting engineer and go to the window the corps had opened. It was sweet."

Normally, the corps used its own contractors to design and build flood-control projects. But with the corps' approval, levee boards could hire consultants as a way to pay their 30% local share of a project's cost. In hindsight, said the corps' commander, Lt. Gen. Carl A. Strock, the decision to let the Orleans board hire its own contractors was "an unusual practice for us."

Some corps veterans worried about the intrusion of local politics and budget complications. "Generally, when there were more layers involved, it got more difficult," Bayley said.

The political lines stretched to Louisiana's governors, who chose the majority of commissioners on local levee boards. In 1985, the power in Baton Rouge was Roemer's predecessor, Democratic Gov. Edwin Edwards, who had installed New Orleans lawyer Emile Schneider as levee board president.

Schneider moved quickly. The board issued \$50 million in bonds, then began hiring private engineers. The consultants were chosen on their qualifications. But politics and hiring sometimes mixed, said former commissioners.

All three engineering consultants who were selected by the Orleans board to design the levees contributed to the political campaigns of officials with sway over the board.

Burk-Kleinpeter Inc., the engineering firm that designed the raised London Avenue flood wall, gave \$5,000 to Edwards in 1991 before he won the 1992 governor's race. Walter Baudier also donated during the period that his firm, Design Engineering Inc., planned the Orleans Avenue levee. Baudier gave \$2,200 to Roemer in 1987 and \$3,000 to Edwards in 1991.

"Everybody gave to everybody," Baudier said. "That neutralized any advantage."

Baudier's firm was also awarded a separate contract with the Orleans district, coordinating other levee board projects. Louisiana's legislative analyst criticized the arrangement in 1992, warning of potential conflicts between the firm's dual roles. Baudier insists his firm dealt only with financing and did not "review other people's designs."

Levee board contractors also frequently gave campaign money to Francis C. Heitmeier, a powerful state legislator from New Orleans who has long wielded influence over Orleans levee district affairs.

Among Heitmeier's donors from 1996 through 2002 were Baudier (\$5,000), Burk-Kleinpeter (\$10,000), and Modjeski and Masters Inc., an engineering firm that designed the 17th Street levee (\$750). Officials with Burk-Kleinpeter and Modjeski and Masters did not return calls seeking comment.

For years, former Orleans levee officials say, Heitmeier, who headed the state Senate's public works committee and now its Finance Committee, was influential in levee board decisions on hiring, policy and contracts. Roemer was stymied by Heitmeier when he tried to reform the levee board system and wrest contracts away from local authorities. His "biggest battles," Roemer said, were with Heitmeier.

Just last month, Heitmeier again played obstructionist, helping to snuff out a post-Katrina attempt by reformers to create a unified state levee board. Critics howled. Heitmeier shrugged.

"They can say what they want," he said.

Questions About Depth

By 1990, faced with spiraling costs for its gates at the 17th Street canal, the corps agreed to pay for raised levees there. But the corps still insisted on gates at Orleans and London avenues.

Even before the corps made its concession, the board had acted on its own, hiring a construction firm to drive sheet piles at 17th Street.

The Orleans board's impatience with the corps was shared by neighboring levee agencies. In recent years, Plaquemines Levee District President Benny Rousselle twice ordered crews to raise levees along a local highway despite formal corps orders to desist. And earlier this year, the East Jefferson Levee District bolstered its side of the 17th Street levee by a foot and a half without the corps' approval.

"When you deal with the corps, it takes years of studies," Rousselle said.

Corps engineers were openly peeved in 1990 when they learned about the Orleans board's decision. The move posed "an undesirable situation for this office and the corps," Bayley wrote to the corps' district commander.

Bayley also warned that work crews were not driving the steel foundations deep enough. It was the first alarm about shallow sheet piles under the levee.

Despite the corps' recent insistence that 17th Street's foundations were properly designed at 17 feet below sea level, a National Science Foundation team of engineering experts has described the pile depths as inadequate.

By autumn of 1990, the Orleans board had also quietly hired Bruce Feingerts, a former aide to Russell Long, to lobby in Washington for levee expansion. Feingerts had discovered that the levees of Orleans and London avenues might win federal funding if he could persuade Congress to expand the coverage of the post-Betsy hurricane plan passed in 1965. Sens. Johnston and John B. Breaux agreed to help, Feingerts said, as did most of the state delegation.

When Senate and House versions of the 1990 Water Resources bill neared passage in October, Feingerts went into action.

Johnston recalled that former Louisiana Rep. Jimmy Hayes was the "point man" as a House manager for conference negotiations.

Now a Washington lobbyist, Hayes did not respond to interview requests. But a former aide, Rhod Shaw, said he often aided New Orleans projects and "would have been carrying whatever the delegation wanted."

The military engineers were "asleep at the wheel," Feingerts said. "If they had seen it coming, they would have blown a gasket." The final bill passed with his language intact: "The conferees direct the corps to treat the outfall canals as part of the overall hurricane project."

As new levee construction projects geared up at Orleans and London avenues, work crews at the 17th Street canal were struggling with construction obstacles. Unable to operate from the land side of the canal because property lines backed tightly up against the levee, construction crews had to maneuver by barge up the canal with a 300-foot crane to drive steel piles and raise the concrete wall.

Lakeview resident Bud Thaller stormed outside one day when his house began to shake violently. A levee crew driving foundations at 17th Street with a vibrating hammer had just struck a sandbar. The foreman shrugged when Thaller approached.

"He told me they were having a hard time getting the piles in," Thaller recalled.

Boh Brothers, a Louisiana construction firm, was the first of three companies to drive sheet piles under the levee walls. They were joined by concrete specialists, some working for the Orleans board, others hired by the corps and the sewerage board. A parade of inspectors and engineers also crowded over the site, so many that "it could get confusing," recalled Boh Vice President Dale Biggers, then a crew foreman.

The corps was always the final authority -- even overseeing the number of hammer blows used to drive in the sheet piles. But on any given day, crews also had to coordinate with state and city officials and inspectors for Modjeski and Masters, the levee board's design consultant. The question of who performed the inspections is crucial because engineering experts have had difficulty learning how on-site decisions were made.

"No one was in charge," said Raymond Seed, a UC Berkeley engineering professor leading a National Science Foundation inquiry. Seed's team has heard allegations that piles were deliberately shortchanged. The Justice Department is investigating.

Structural engineer Herbert J. Roussel Jr., who testified for a construction firm that sued the corps during one dispute, recalled Army engineers as dismissive: "The corps had an attitude problem. It was: 'We're the Army Corps of Engineers. We know what we're doing and you don't.'"

Levee board officials complained about excessive corps delays. "They were slow. We'd come up with a design, and the corps would always send them back," Boissiere said.

Army engineers raised their own complaints. Baudier's firm was removed as Orleans Avenue designer in 1992, accused by the corps of missing deadlines.

As sections of the flood walls were finished piece by piece through the mid-1990s, the levee board's emphasis turned to the mundane chores of grass-cutting and maintenance. That left ample time for board business that had little to do with flood protection.

Outside Interests

When lawyer Robert Harvey was installed as the Orleans district's president in 1992, the levee board was a recreation powerhouse. A year after Mississippi River floods swamped New Orleans in 1927, Louisiana political legend Huey Long had prodded the state Legislature to allow the Orleans board to expand its influence into parks, beaches and other "places of amusement."

By the late 1980s, the board operated an airport, two marinas and lakeshore rental properties, but the agency was hemorrhaging money. Leases went unfilled at the airport, and its South Shore Marina had too many vacant boat slips.

Instead of scaling back, Harvey accelerated the board's outside interests. The tough-talking lawyer won his post after contributing \$5,000 to the 1991 campaign of Gov. Edwards, an old friend.

"It's a plum job," Harvey recalled. "Your connection with the governor is close. You have 300 employees, lots of contracts."

When Edwards pushed for state gambling -- a position that led to his federal corruption conviction in 2001 -- Harvey wooed the Bally's gambling empire to locate a casino boat at a dock owned by the levee board.

The boat brought in millions in gambling taxes, but other Harvey projects fell flat. A flirtation with film studios went nowhere. A series of probes by the state auditor found cases of financial mismanagement, conflicts of interest and risky investments. At one point, six attorneys were working for the board without formal contracts. And Harvey was accused by the New Orleans Metropolitan Crime Commission of padding the levee board payroll with old friends. The controversies took their toll. Harvey resigned in 1995, followed by an FBI probe of his levee board tenure. "They didn't find anything," Harvey said.

His successor, James P. Huey, waded into his own controversies. Huey's board hired his wife's first cousin, George Carmouche, as a lobbyist in Baton Rouge. After Katrina struck, the board sublet a Baton Rouge office from Carmouche. And Huey pocketed nearly \$100,000 in back pay, failing to first obtain permission from state lawyers. He returned the money after resigning under pressure.

Huey, who did not respond to interview requests, is under investigation by state and federal authorities.

At the same time, the newly raised flood walls received haphazard scrutiny.

Harvey recalls staring jealously at East Jefferson Levee District's well-trimmed border of the 17th Street canal, then at untamed foliage and trees massed along the Orleans levee wall. "I'd look at the Orleans side and get depressed," he said.

Neither the corps nor the Orleans board had a rigorous program for scanning for structural defects. Instead, the two agencies joined twice a year for five-hour-long inspection tours. A caravan of officials would make random stops along the floodwalls. Sometimes corps officials issued citations. Then they would head out for long lunches.

"That was *always* on the agenda," said former Orleans commissioner Peggy Wilson.

On one tour, Wilson was joined by only one other levee board official. When they stopped briefly at the levees, corps officials seemed in a rush. "I kept asking them what I was supposed to look for, puddles of water?" she said. "They said, 'Oh, don't worry.'"

The agencies relied largely on maintenance crews and neighbors to flag levee problems. "If something structural came up, we'd tell the corps," said retired Orleans levee board crewman Ed Robbins.

But at 17th Street, corps engineers were a rare sight, recalled Eric Moskau, a commercial real estate agent who has lived near the flood wall since 2001.

"I'd just see them driving out near the walls," Moskau said. "I always wondered exactly what they did out there."

17th Street

When Katrina's swells blew out huge chunks of 17th Street's cement wall on the morning of Aug. 30, Harvey was prepared for disaster.

Years of interagency spats with the corps and his own engineers had left him a skeptic. He bought an inflatable rubber boat and stored it in the attic of his house near the 17th Street levee.

When floodwaters rose, Harvey dragged down his boat and began rescuing neighbors. "Nobody wanted to go into a starvation mode and pay for real protection in the halls of Congress," he said afterward.

Since 2001, the Bush administration had repeatedly turned down requests from the levee board and the Louisiana delegation for more flood protection.

When Katrina struck, Orleans Avenue's levee walls held firm. But when Walter Baudier, the levee's original designer, drove out with another engineer to the canal weeks later, he was stunned to find a 200-foot gap between the levee wall and the pump station. The wall was left unfinished because of the government's refusal to fund the project, according to the corps and levee officials. The gap allowed floodwater to flow freely into the city.

Near the breach at 17th Street, an 18-foot section of levee wall ended up in Moskau's living room. Displaced to Idaho, Moskau returned weeks later to survey the damage. He hiked over hardened mud, gaping at the two-block-long rupture. Crowds of red-shirted corps engineers swarmed nearby, directing repairs. There were more engineers, he realized, than he had seen in the four years he had lived near the levee.

"The government was just like everybody who lived near the levee," Moskau said later. "They took those walls for granted."

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Times researcher John Beckham contributed to this report.

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A history of the levees

September 1965

Hurricane Betsy sweeps over New Orleans, flooding the city's Lower 9th Ward. The Category 2 storm resulted in more than \$1 billion in damage and at least 75 deaths.

October 1965

Congress authorizes a massive Army Corps of Engineers plan to strengthen New Orleans' flood protection. The corps proposes massive floodgates and barriers on the far end of Lake Pontchartrain to thwart storm surges from the Gulf of Mexico.

December 1977

A federal judge orders the corps to produce an environmental impact report on the barrier plan, a decision that leads the corps to abandon that proposal.

November 1984

The corps presents a scaled-down set of alternatives called the Lake Pontchartrain, La., and Vicinity High-Level Plan, which contains options to protect the city. The corps says it wants to build floodgates on the canals, but local officials want to raise the levee walls.

July 1985

The Orleans Levee District and the corps agree to work together on a flood plan.

November 1987

The corps reports that a scale-model floodgate has been tested in its hydraulics lab in Mississippi. The gate model failed initial tests but worked after it was modified.

August 1990

The Orleans levee board begins work on the 17th Street Canal levee without telling the corps.

October 1990

Congress orders the corps to begin raising the levees on the London and Orleans avenues drainage canals. Earlier in the year, the corps had agreed to raise the 17th Street Canal Levee.

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May 2005

A corps report on the Lake Pontchartrain high-level plan indicates that construction work on the project is 90% complete but won't be finished until 2010.

August 2005

Hurricane Katrina rakes New Orleans, whipping up powerful storm surges that funnel in from Lake Pontchartrain. Floodwaters breach the 17th Street Canal and London Avenue Canal levees. Water spills through a 200-foot gap left in the Orleans Avenue Canal. More than 1,000 people die.

December 2005

The Bush administration announces it will permanently place barriers where the city's three internal canals connect with Lake Pontchartrain and relocate the city's pumping stations to the lakefront. The massive project is expected to cost \$3.1 billion and provide protection against a Category 3 hurricane.

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