



## Not by Accident

### Building a sustainable New Orleans.

MARK DAVIS | *March 17, 2009*

New Orleans was built in a place that is both insane and inevitable. The culture of the City and the region is both parochial and cosmopolitan. The swamps and marshes that define the region's landscape seem timeless -- even primordial -- yet are mere thousands of years old and incredibly dynamic, geologically and hydrologically. New Orleans can be simultaneously inspiring, romantic, and frightening. No wonder virtual cottage industries of defenders and critics of the city and its future have emerged with such passion and numbers in the years since Hurricane Katrina roared across the landscape in August of 2005. In the bipolar world of post-Katrina New Orleans, I have found myself in both camps -- sometimes on the same day -- but I keep coming back to one fact: New Orleans was not an accident. It was not founded by mistake. It did not grow to be a great city by happenstance. It was not ruined by random forces.

That simple fact, the city's un-accidental nature, is what makes New Orleans important. It goes to the heart of why the struggles of New Orleans to survive and thrive matter. Just as New Orleans' past was not an accident, its future won't be accidental, either. Good or bad, it will be shaped by policies, decisions, and the appetite of its residents and this nation to accept hard truths and make meaningful commitments. These are the same issues the entire nation will increasingly face as we deal with rising seas, growing freshwater scarcity, and questions of who benefits and who suffers from climate change. If we can't figure out how to make New Orleans sustainable and resilient, it will be hard to imagine good things for other vulnerable places like Miami, Houston, and the New Jersey Shore. If we can't rebalance human development with the stewardship of water, wetlands, and other natural resources in New Orleans, it won't portend well for the Everglades, Chesapeake Bay, Great Lakes, and water-strapped cities like Las Vegas and Atlanta.

**New Orleans did not just happen.** America is filled with seemingly accidental cities -- towns that grew around a mine, rail junction, factory, or as the result of some random upheaval. New Orleans is not that kind of town. Like London, Venice, Amsterdam, Rotterdam, and Tokyo, it was founded in a challenging but essential place. Its proximity to the Gulf of Mexico and the Mississippi River combined with its modest but vital elevation (it was not below sea level then, though much of it is today) make New Orleans, as geographer Peirce Lewis has called it, an "impossible but inevitable city."

Its founders grasped the challenges and commercial advantages of building a city on a coastal swamp. New Orleans was not a daring experiment but rather one in a series of great cities founded and built in coastal plains and deltas. Or, as Jesuit historian Pierre François-Xavier de Charlevoix, an early chronicler of the French settlement, wrote in 1721: "On the banks of a navigable river, [near] the sea, from which a vessel can come up in twenty-four hours; on the fertility of its soil; ... on its neighbourhood to Mexico, [to] Havana ... can there be any thing more requisite to render a city flourishing?"

**The devastation from Katrina and Rita did not just happen.** For much of its history, the match between New Orleans and nature was fairly, if grudgingly, balanced. The city grew and prospered, and the attendant risks were managed through its infrastructure, architecture, and grit. Without the benefit of federal flood protection or flood insurance, the city grew to greatness, its population reaching its zenith of nearly 650,000 in the early 1960s.

The balance began to shift in the early 20th century as efforts to drain wetlands (under the Orwellian banner of "reclamation"), manage river flows, and expand navigation took firm hold. Massive levees and drainage projects began to alter the landscape and seeded the vast coastal collapse that contributed to Katrina's devastating impact -- complicating the plans for building a resilient city going forward. The vast alluvial plain that makes up most of the lower third of Louisiana went from relative equilibrium in 1900 to a net loss of over 1.2 million acres (and counting) of coastal wetlands since the 1930s. This was not wetlands merely being converted to dry land but land made vulnerable to open water.

These changes were driven in large part by government projects intended to spur economic development and provide flood

protection. Many of the risks were known. In 1928, Percy Viosca Jr., a scientist working for the state of Louisiana wrote, "Reclamation and flood control as practiced in Louisiana have been more or less a failure, destroying valuable natural resources without producing the permanent compensating benefits originally desired." Ironically, Viosca wrote this in the same year Congress enacted the Flood Control Act of 1928, which put the United States Army Corps of Engineers into the levee-building business for the first time and absolved them of liability for any consequences. As a result, the natural buffers that surround New Orleans began melting away.

For New Orleans itself, things changed dramatically when Hurricane Betsy hit in 1965. The flooding in some neighborhoods was much like that during Katrina, but the response could not have been more different. America had a larger appetite for public works back then. President Lyndon Johnson quickly enlisted Congress to pass a hurricane-protection system to guard the New Orleans area against the worst likely storm -- a once-in-a-200-to-300-year event.

But the government settled for far less. The system that was actually built -- and that ultimately failed -- was the product of political and budgeting compromises, the failure to adapt to changing conditions and knowledge, and human error. The promises of storm levees and flood walls, combined with the risk-shifting aspects of the National Flood Insurance Program, led to changes in expectations and behavior. Low-lying areas were drained and developed, homes were built on slabs instead of being elevated, and less-water-resistant building materials were employed. The roles of natural defenses and individual and local responsibility were significantly downplayed, if not lost all together. After all, this was America, and we knew how to best nature. Perversely, the massive expenditure produced a city with more apparent protection, and less resilience. The net effect was a city at higher risk.

Decades of work and millions of taxpayer dollars actually exacerbated risk. And we must now face the fact that the tens of billions of dollars that have been committed to patching the failed system and rebuilding the devastated communities since Katrina could have the same effect -- if important changes aren't made in the way protection, resilience, and community vitality are approached.

**A sustainable, resilient New Orleans won't just happen.** New Orleans and much of the surrounding coastal region are incredibly vulnerable and currently unsustainable. Yet it is possible to significantly reduce that vulnerability and re-establish some worthwhile version of sustainability. This is true even in the face of rising seas, a collapsing coast, and the demonstrated failure of markets and government to get things right. But putting things right won't come from just building higher flood walls and levees. It won't come from just assigning blame for the failed levees and the disappearing wetlands. And it won't come from just the astounding energy and dedication of the people who and organizations that have come or returned to the Gulf Coast to forge a new future. We will revitalize the Louisiana Gulf Coast and encourage its displaced residents to return and stay -- only if more confidence can be generated in the safety of the community. There are three essential elements of that security:

- Honest, effective, and purposeful storm protection.
- The conservation and restoration of coastal wetlands and barrier shorelines.
- Communities with the capacity to constructively engage in the planning and programs that affect their protection and well-being.

All of these things are interrelated, essential, and possible. And none of them exists in any adequate way today. Good projects, programs, and public accountability don't happen automatically or even because there is a consensus in favor of them. They are creatures -- or victims -- of laws and policies that shape public decision-making. The planning, authorizing, budgeting, and funding process are all distinct and for the most part not currently tailored to the kinds of actions that the recovery and revitalization of New Orleans and the Gulf Coast will depend on.

Levees, pumps, gates, and wetlands are all essential elements to making New Orleans and its surrounding area a safe place to live. But how much and what kind of each of those things do we need, and what does "safe" really mean? Amazingly, those questions not only have not been answered, they really haven't been asked.

The degree of risk to New Orleans and to any vulnerable city is a function of two things: the consequences to human health and safety if the system were to fail and the probability of failure. The pace and extent of recovery for the region will depend in part on how well those risks are assessed and understood. No risk assessment was ever done on the New Orleans levee system prior to Katrina. It was impossible for people to actually know the level of risk with which they were living. Working, living, and investing here, as elsewhere, had become an act of custom and faith more than informed judgment. If New Orleans' levees had been built to the same standard of safety as federal law requires dams to be built, the odds of a failure resulting in the deaths of 1,000 people would be one such tragedy per 100,000 years. The levees of New Orleans were so under-designed and poorly maintained that their failure resulted in more than 1,000 deaths after only 40 years. Reclamation and flood control as practiced in Louisiana and now by the federal government remain a failure.

Yet, barring a direct hit by another Katrina in the next 30 to 50 years (an actuarially unlikely event) real progress can be made. But it has to begin now, and it has to begin with three things.

First, there needs to be an aggressive but realistic determination of just how safe and resilient New Orleans and other communities can and want to be as well as of the policies that are required. The current standard calls for New Orleans to be protected only against a one-in-100-year event, well below what Katrina was. This embarrassingly low threshold, met largely with existing pumps, levees, and flood walls, is pegged to the minimal requirements to qualify for coverage by the National Flood Insurance Program. By comparison, the Netherlands plans for one-in-1,000-year to one-in-10,000-year risk horizons.

Second, it is time to get real about just how protected levees and pumps built by the Army Corps of Engineers and others can make us, and how soon. We can't simply build the Great Wall of New Orleans. There is not enough time, dirt, or money available, and the environmental and societal consequences from the impacts and displacement caused by the structures would, echoing Viosca's observation in 1928, be greater than the benefits. But we can have better protection and greater resilience for those times when water and trouble arrive -- and they will -- if our levees and flood walls are stronger and more reliable (not necessarily bigger) and the communities behind them are built smarter. Indeed, over the next 20 or so years, any appreciable improvement in protection and resilience will have to come from smarter building and land-use practices. A foot of water in a house on a slab is a disaster. A foot of water under a house raised 2 feet is an inconvenience. If that same house is in a neighborhood with natural sumps, modern cisterns and runoff controls, and well-protected utility infrastructure, it is just another bad-weather day.

Finally, it is essential to get serious about rising seas and the collapse of Louisiana's coast. There is no quick way to restore the million-plus acres of coastal lands that have already disappeared. Like engineered storm protection, this will take time and lots of money. It will also require a new and committed approach to managing wetlands, private property, and America's greatest river, the Mississippi. This must begin soon in earnest -- if New Orleans is to have a fighting chance. Efforts to restore the coast have been underway for nearly 20 years. It has been noble work but more notable for what it has not achieved than what it has. This is not because we lack the knowledge and technology to do the job. Rather, it is because saving this place hasn't really been made anyone's job. It is someone's job to keep rivers deep and navigable. It is someone's job to tame and dominate water in the name of flood control and development. And it is someone's job to harvest the fish, game, oil, and gas that can be found in coastal Louisiana. Those jobs came first, and they don't go away just because we now want to do something new or do things differently. But until the whole range of those projects, programs, and activities are revisited and reconciled with the efforts to create a coast and communities that are sustainable and resilient, it is doubtful that any of the other efforts to rebuild, revitalize, and protect New Orleans will come to much.

New Orleans once again has become what it was to the French and British, to President Thomas Jefferson and President Abraham Lincoln -- an essential city. The reasons, to be sure, are different, but it is essential nonetheless, because this is the proving ground for the American ideal of progress, equity, and reinvention. Can we honor our past without being prisoners of it? Can we muster the will and policies to apply the best of what we know to build safer, more resilient, efficient, and just communities? Can we forge a new bargain with nature rooted sufficiently in knowledge, respect, and humility to give phrases like "sustainable development" and "sustainable communities" real meaning? The future of New Orleans will depend on the answers to those questions, and the future of this country and many of its communities will depend on the answers to the questions raised in New Orleans. The right answers and actions won't come about by accident.



**Mark Davis** is a senior research fellow at Tulane University Law School. He also is the director of the Tulane Institute on Water Resources Law and Policy. He lives in New Orleans.