Cityscapes: A Geographer's View of the New Orleans Area

A Brief History of French Quarter Flooding

New Orleans Times-Picayune, February 14, 2015

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After nearly 10 years, a detail of the Hurricane Katrina-induced deluge of 2005 has found its way back into the national news. At issue: were there floodwaters, not to mention dead bodies, in the French Quarter, as embattled NBC anchor Brian Williams stated in recollections of that terrible week? Or were those reports exaggerated, especially in light of revelations that Williams had embellished a 2003 incident in Iraq?

Initial reaction to the Katrina statements did not flatter Williams. New Orleanians know well that the "sliver by the river" in general, including the French Quarter, remained dry. Some have pointed out that the higher terrain of these riverside areas explains why Bienville, the city's founder, established New Orleans here in 1718.

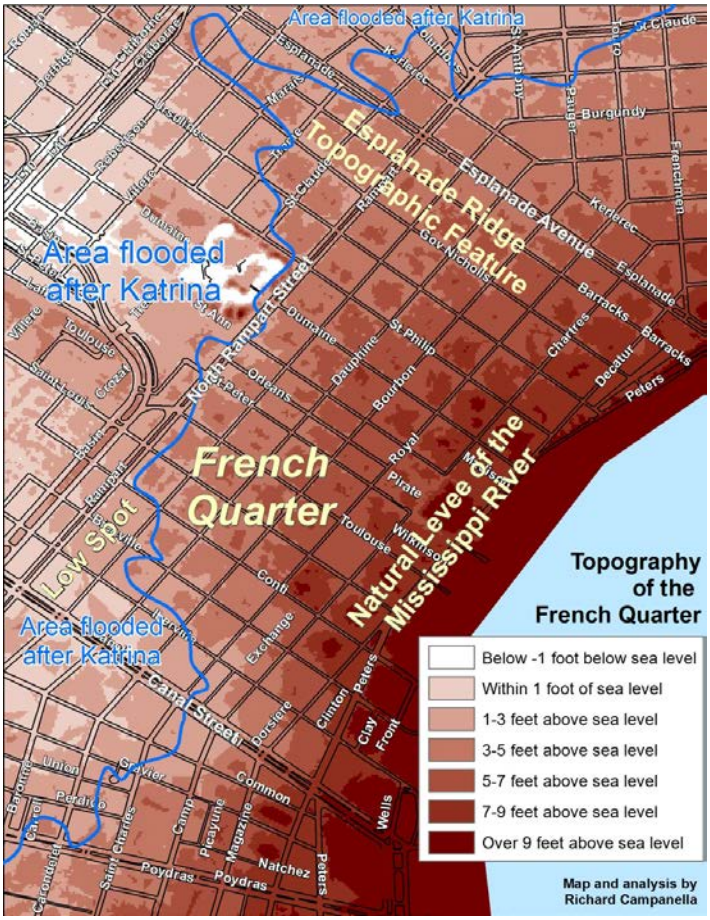
But then photographic evidence to the contrary began to circulate, and it had the effect of quelling at least some of the doubt. While most of the French Quarter did remain dry, the streets surrounding Williams' hotel, the Ritz Carlton, did not.

By my measurement, those streets were part of the 9 percent of the 260 acres bounded by Canal, North Rampart, Esplanade and North Peters—that is, the French Quarter as most people perceive it—that were inundated by shallow brackish water in the days immediately after Katrina.

That 9 percent was entirely in the neighborhood's upriver/lakeside (western) corner, and there is a geophysical reason why: these blocks are surprisingly low-lying for a neighborhood that otherwise occupies relatively high elevation. And it wasn't the first time they flooded; by my count, this section of the French Quarter has seen its streets inundated by outside water (that is, from river, lake, or sea, not including heavy rainfalls) at least four times in the past 200 years.

To understand French Quarter topography, we have to go back to 4,300 years ago, when the Mississippi River began wending eastward along what are now Metairie Road, Gentilly Boulevard, and Chef Menteur Highway, disemboguing into the marshes of present-day eastern St. Bernard Parish. The river's main channel forked around present-day City Park and sent a secondary channel, or distributary, down what is now Bayou Road and Esplanade Avenue.

Over the next 3,000 years, wherever the water flowed, sediment got deposited and adjacent banks rose in elevation. This created today's Metairie/Gentilly Ridge as well as the Esplanade



Ridge, the latter of which would shore up what would later become the downriver/lakeside (northern) quadrant of the French Quarter.

Then, around 1,100 years ago, the Mississippi lunged in a new direction, and, through its springtime flooding cycles, deposited sediment and created new land along its current channel. These processes raised the elevations of immediate riverside areas, including in the French Quarter, to 8 to 12 feet above sea level—even as the river would occasionally overtop and inundate its banks with alluvium-rich water, further raising their elevations.

This happened in 1719, just one year after the founding of New Orleans, when the bloated Mississippi sent a thin sheet of excess water across the nascent outpost. The incident worked against Bienville's argument that his site ought to become the colony's capital rather than Mobile, a designation which officials instead transferred to Biloxi.

But shortly after the 1719 flood, engineers began erecting artificial levees along the city's riverfront. In time, overtop flooding would gradually recede as a source of flood threat. By 1723, New Orleans was declared the capital, and Bienville's project gained momentum.

But while the threat of overtop flooding along the city's riverfront diminished over the 1700s and early 1800s, it remained high from river levee failures (crevasses) occurring elsewhere in the crescent. Those floods could fill the lowlands and threaten the city via its lower-lying rear.

This happened in May 1816, when a crevasse on a plantation in present-day Carrollton inundated the "backswamp" and swelled into the rear flanks of the city five miles downriver. "One could travel in a skiff from the corner of Chartres and Canal streets to Dauphin," (sic) according to one account written in 1887, "down Dauphin to Bienville, down Bienville to Burgundy, thus to St. Louis Street, from St. Louis to Rampart, and so throughout the rear suburbs."

Why those streets? Because they comprise the one section of the original city, today's French Quarter, which had received the least amount of river sediment deposition from either the

Esplanade Ridge formation starting 4300 years ago, or the formation of the present-day "sliver by the river" starting 1100 years ago. Today, that area stands 2 feet lower than the North Rampart/Esplanade corner of the neighborhood and 7 to 8 feet lower than Decatur and North Peter streets.

Flooding happened there again starting May 3, 1849, when a crevasse on Pierre Sauve's plantation in present-day River Ridge began filling the backswamp, eventually reaching on June1 at the intersection of Bourbon and Canal Street. (Not coincidently, this was precisely where the uppermost floodwaters stood in a photograph I captured at 8:04 a.m. on Aug. 30, 2005, the day after Katrina.)

It happened once again in 1871, when a crevasse at Bonnet Carré sent excess river water into Lake Pontchartrain, much like the spillway does today — except that easterly winds prevented the lake's normal outflow to the Gulf of Mexico. The high lake water thus backed up into the New Basin Canal, toward downtown, and on June 3, caused a breach in the canal's guide levee at Hagan Avenue. Once again, floodwaters crept into the French Quarter's low rear edge. Illustrations of the day show adjacent sections of Canal Street strewn with floating boats and people in waist-deep water.

On the morning of Monday, Aug. 29, 2005, failures in federal floodwalls and levees on the western side of the Industrial Canal in the Upper Ninth Ward, in two spots on the London Avenue Outfall Canal in Gentilly and in one section of the 17th Street Outfall Canal in Lakeview allowed Katrina's surge to inundate the heart of New Orleans' East Bank.

Even after the storm passed, floodwaters continued to rise under clear blue skies. Why? Because a surge as vast as Katrina's does not immediately flow back to the sea once the hurricane passes; rather, it slowly works its way back, and continues to spill through deep ruptures in floodwalls and levees, stopping only when outside and inside water levels equalize.

By the morning of Aug. 30, the flood reached as far uphill as Canal at Bourbon Street, on terrain 2 feet above normal sea level.

By the afternoon of Aug. 31, the deluge crested at Royal/St. Charles Avenue, 3 feet above sea level. I captured a photograph at 1:17 p.m., showing a large inflatable raft floating right in front of Rubenstein's clothing store.

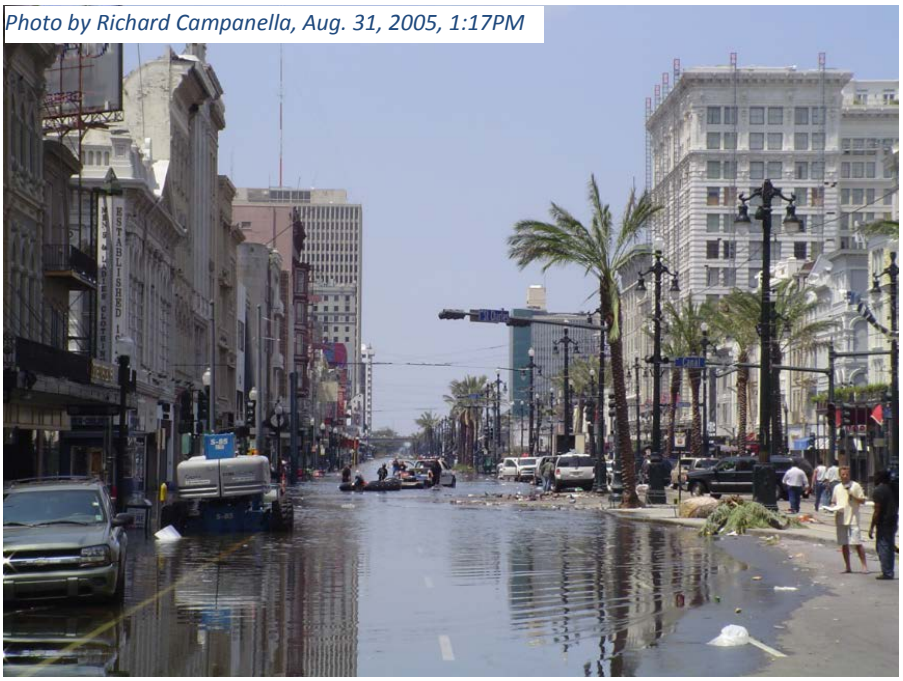


Photo by Richard Campanella, Aug. 31, 2005, 1:17PM

As for the French Quarter, during those two days and probably into Sept. 1, up to 2 feet of brackish water covered 100-400 North Rampart, 100-300 Burgundy, 100-200 Dauphine, and the 100 block of Bourbon, not to mention all of Iberville Street lakeside of the 800 block and all of Canal lakeside of the 700 block.

Williams, at the Ritz Carlton, would have found himself surrounded by the uppermost edge of the flood footprint, and it was deep enough all around to float small boats.

New Orleanians will make what they wish of Williams' statements, including on the separate question of the dead bodies. But in terms of understanding the geography of our city and the catastrophe of 10 years ago, perhaps it's time to add an important caveat to the popular talking point that the French Quarter unconditionally "did not flood."

While indeed positioned on safer, higher ground, the original city, like all other neighborhoods, has its low spots. Though they stand above sea level, they are not immune to flood risk.

We've known this for more than 200 years.

Richard Campanella, a geographer with the Tulane School of Architecture and a Monroe Fellow with the New Orleans Center for the Gulf South, is the author of "Bourbon Street: A History," "Bienville's Dilemma," "Geographies of New Orleans," "Lincoln in New Orleans," and other books. He may be reached through http://richcampanella.com , rcampane@tulane.edu , or @nolacampanella on Twitter.