

The Contemporary American
American Studies Department

Study Guide: “Engineering Disasters: New Orleans” (2006)

1. What is storm surge? How large was the storm surge caused by Hurricane Katrina?
2. Where did the first levee break take place? What neighborhood was flooded? Where did the second flood wall fail? Where did the third flood wall fail?
3. Why was it important for geological detectives like Dr. Joseph N. Suhayda of Louisiana State University to proceed with the investigation without delay?
4. What are levees? When were they first built in the New Orleans area? When did the United States take over Louisiana? When did the U.S. Army Corps of Engineers take control of the levee system?
5. What is subsidence? What causes subsidence? What is the rate of subsidence in the New Orleans area per year? Per century?
6. Consider the eight-foot-high concrete floodwalls known as “I-Walls,” built on top of seven-foot-high levees with steel pilings running 20 to 25 feet underground, affording fifteen feet of protection. They were designed to protect against what level of hurricane? Describe the “scouring” mechanism of failure that occurred during Hurricane Katrina.
7. Describe the mechanism of “heaving”. How does this cause failure? What can be done to improve the level of protection?
8. What was it about the 1912 Albert Baldwin Wood screw pump system that proved so poor during the Hurricane Katrina crisis?

9. Describe with as much precision as possible the multiple mechanisms of failure at the Superdome that caused so much suffering to the victims seeking shelter there?

10. Describe with as much precision as possible the design flaws on one of the major escape routes from the City of New Orleans.

11. According to Roy K. Dokka, Ph.D., Director of the Spatial Reference Center at Louisiana State University, what is eventually going to happen to coastal Louisiana? What kind of instrumentation does he use to determine true elevation points?

12. How much have some areas of southern Louisiana dropped since 1970 when they were last surveyed?

13. In the next 70 years how much of southern Louisiana may be underwater?

14. According to Dr. Dokka, at the present time, we are losing the equivalent of a football field every hour. What is the reason for this sinking?

15. According to Elizabeth English, Ph.D., of the Louisiana State University Hurricane Center, what has happened to the barrier islands as a result of Hurricane Katrina?

