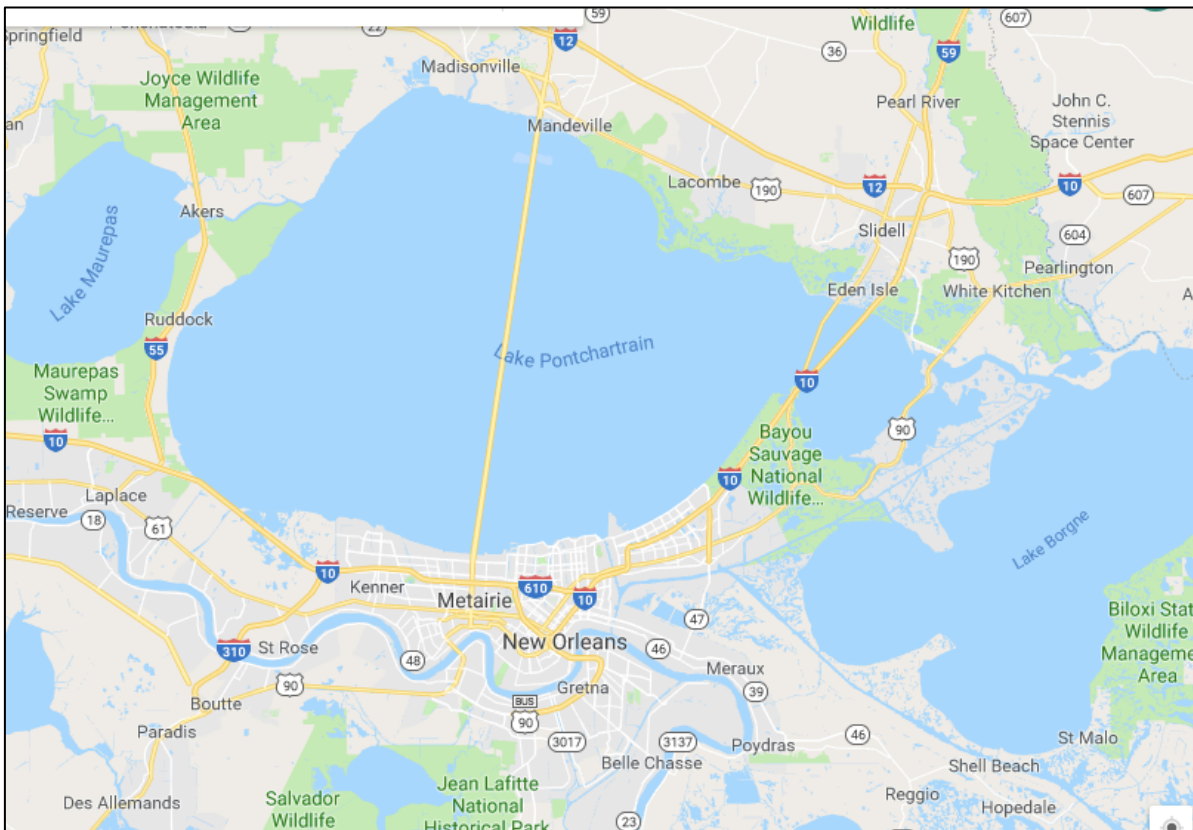
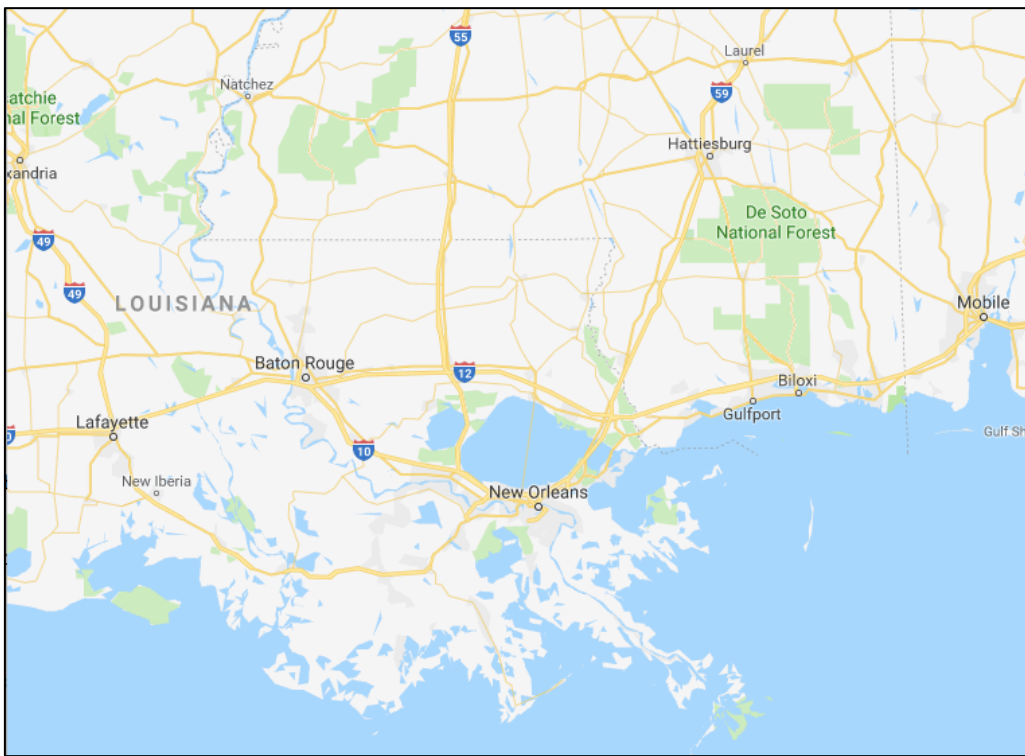


## Category 5: Hurricane Katrina, New Orleans, Louisiana, USA, 29<sup>th</sup> August 2005



### Place Specific Information:

- New Orleans is a city located on the South East coast of the USA in the state of Louisiana. It is built on a river delta.
- New Orleans is up to **3 metres below sea level** in parts and is surrounded by water with the **Mississippi River and Lake Pontchartrain**. It is protected from the water by **levees**, which are **large steel and concrete floodwalls**.
- New Orleans handles the greatest volume of trade out of any port in the USA, **60% of the USA's grain exports pass through it**, as does most of the oil brought over by supertankers from the Middle East.
- New Orleans is also one of the poorest cities in the USA with **30% of its children living below the poverty line** and over **40,000 households** surviving on **less than \$9,600 per year**. **67% are black** and they black people make up **88% of the unemployed population**. The poorest districts of New Orleans saw the highest loss of life after Hurricane Katrina.



## Causes

- The levees were only prepared for a category 3 storm, they could not cope with the 6metre high storm surge so water poured over them and several collapsed.
- Entered the city with 232km/hour winds got up to 280.
- Delta could not be filled with silt because of management of the Mississippi river means sediment is dropped further out at sea, this means New Orleans is less protected because the delta would normally form a natural defence.
- The delta is sinking because of oil extraction in the Gulf of Mexico
- Hurricane was category 5

## Effects/impacts

<b>Social</b>	<b>Economic</b>	<b>Environmental</b>
<ul style="list-style-type: none"><li>○ 1,836 people were killed</li><li>○ 1 million people homeless</li><li>○ Homes flooded up to the roof tops, pets abandoned in the masses, cars and buildings were torn apart.</li><li>○ Lack of clean water, food, toilet facilities</li><li>○ Looting and disorder became serious problems</li><li>○ Communications networks failed, no Internet or local TV, landlines and mobiles didn't work so people couldn't find out if their family and friends were ok.</li><li>○ 3 million people lost electricity</li><li>○ 60,000 people had to be rescued from New Orleans.</li><li>○ A year later the population was still only half the size it had been before.</li></ul>	<ul style="list-style-type: none"><li>○ Nearly everyone in New Orleans became unemployed</li><li>○ The total economic impact is estimated to be \$150billion</li><li>○ Oil and natural gas production in the Gulf of Mexico was reduced as well as imports of oil and natural gas. Prices of oil rose.</li><li>○ Most major roads into and out of New Orleans were damaged</li><li>○ The levees and floodwalls protecting the city were breached and 80% of the city ended up under water</li><li>○ Buildings suffered extensive damage.</li><li>○ Roof of Superdome ripped off (where 30,000 people took shelter)</li><li>○ Decrease in casino revenue (\$2.7billion)</li><li>○ 20 offshore oil platforms sunk or adrift</li></ul>	<ul style="list-style-type: none"><li>○ Flooding of 9 metres</li><li>○ Lake rose 1.5 metres above normal level in 36 hours after the hurricane</li><li>○</li></ul>



## **Management**

- National Hurricane Centre (NHC) in Florida monitor satellite images to track storms. However tropical storms can change direction very quickly and it is hard to know where they will exactly hit until very near the time. If they evacuate too early they can lose a lot of money.
- Evacuation
- Education from NHC
- Federal Emergency Management Agency set up to make sure places are prepared before and after.
- 30,000 national guardsmen sent to maintain law and order
- \$50 billion spent on rescue and recovery

**Table 1** *Options for rebuilding New Orleans*

Option	Conflicting interests and problems
Increase the height of all levées and floodwalls throughout the city	This is expensive so the project might have to focus on only the most important areas. Who decides what is important?
Allow controlled flooding of the delta by creating openings in levées or floodwalls at certain points, allowing floodwaters to bring in new sediment	This would not raise the height of New Orleans itself and probably could not be done over a wide enough area to create new land
Use fertilisers to encourage plant growth on the delta wetlands to stop the soils being eroded	This could unbalance the ecosystem as certain types of plant become dominant
Stop drilling for oil near the shore in order to stop the continued sinking of the land level	Oil is a major part of the economy of the region so many local people would be adversely affected
Rebuild the wetlands with silt dredged from the seabed	This would be expensive, and might not be possible on a large enough scale to make it worthwhile