Virtual Road Trip

ESC 115 Physical Geology

Using the Internet

Group Members:_____

1 In Lab

For the in-class portion of the lab, we are going on a virtual road trip to the Gulf Coast and Florida beaches. Some tools you will use include the following:

Google Earth: installed on laptops. Helpful for viewing topography in 3-D.

Post-Storm Imagery at `http://www.ngs.noaa.gov/index.shtml`, aerial photos of hurricane destruction. Specifically, the photo at `http://ngs.woc.noaa.gov/storms/katrina/24425537.jpg` shows a break in the canal levee near my old house.

Tasks

To accustom yourself to Google Earth, let's begin by visiting a few sites:

Chicago: In the bottom left panel of Google Earth are *layers.* Make sure that the boxes are checked for

- Primary Database,
- 3D Buildings,
- Street View,
- Borders and Labels, and
- Terrain

All others should be unchecked. In the upper right *Fly to* box, enter Chicago, IL. Once there, experiment with the controls in the upper right to change the angle and direction of view, zoom in and out, and location. Find the Sears Tower, click on the camera icon, and take a look around.

Dubuque: Find University of Dubuque's campus and look for street views on campus. My home is at 111 Devon Drive. In what season was the photograph taken?

For the following locations, find the elevation of the Mississippi River and the driving distances from the previous city upstream. Then calculate an approximate river gradient. (Your answers are only approximate because in places the driving route strays far from the river and the river meanders significantly.)

City	River Elevation	Distance from upstream	Gradient from upstream
Dubuque	_____		
Davenport	_____	_____	_____
St Louis	_____	_____	_____
Memphis	_____	_____	_____
Baton Rouge	_____	_____	_____
New Orleans	_____	_____	_____

- I used to live at 1735 Mendez Drive, New Orleans LA 70122. Did the metal-roofed porch I built back of the house survive the hurricane? _____
- From New Orleans, let's travel to Bay St. Louis MS, an area particularly hard-hit by Katrina.

  What is the main road we'll travel? _____

  The storm surge from Katrina in Bay St Louis was estimated at 29 feet. What is the elevation of the center of Bay St Louis? _____
- On to Mobile Bay. What is the elevation of the bluff on the eastern shore of Mobile Bay near Daphne, AL? _____

  A bar partially blocks the mouth of the bay. Which direction does this indicate that the longshore current is moving?_____
- As we continue east, note the location of Pensacola. You will be looking at it more closely for the out-of-class portion of this lab.
- On to the Tampa and St Petersburg area. What is the elevation of Boyd Hill Park in St Petersburg? _____
- From St Petersburg, let's drive to Orlando. What is the elevation of Disney World?

  _____
- Our final destination is West Palm Beach where my wife grew up. The rich area is east of the there, Palm Beach.

  What is its highest elevation? _____

  What geologic feature is Palm Beach located upon? _____

2 Outside of lab

The following assignments should be handed in at the beginning of next week's lab. These utilize online photos and map.

- On the web site `http://terraserver-usa.com/`, locate the aerial photo from 11/27/1999 of the barrier island (Santa Rosa Island) at Pensacola Beach, FL. Print it out to turn it.
- Switch to Topo view of the same location. Use the panning tool to move west till Pensacola Naval Air Station is centered in the map. Print this out to turn in. What are two features identified that indicate that humans have altered the coastline?

- Look at the image at `http://ngs.woc.noaa.gov/storms/ivan/26301201.jpg` Locate the orange beach-ball water tower. This photo is one of many taken by NOAA from a low-altitude flight along the coast after hurricane Ivan. It is the same one shown in my essay, *Pensacola Beach Nourishment Project.* Locate the fishing pier in the photo and zoom in on it. What is its condition?

- Visit `http://coastal.er.usgs.gov/hurricanes/ivan/photos/`. Scroll down to the photo pairs from Pine Beach AL. What was the impact of Hurricane Ivan upon Pine Island? Explain how the feature probably formed.

- Visit `http://www.mthurricane.com/Hurricane_Ivan.htm`. Find the picture of the Corvette. Print it out to turn in.