# Earth 107: Module 5 Lab

*Important! We advise you to either print or download/save this document as it contains the steps you need to take to complete the Lab in Google Earth. In addition, it contains prompts for measurements and questions that you should take note of (by writing down or typing in) as you work through the Lab.*

*Once you have worked through all of the steps, you will go to the Module 5 Lab in Canvas to complete the Lab by answering multiple-choice questions. The answers to questions on this Lab worksheet will match choices in the multiple-choice questions in Canvas. Submit the quiz in Canvas for credit.*

General Instructions for Module 5 Lab

**Analyzing Hurricane Impacts**

For this short Lab, we will be touring three locations to view impacts from three storms: Hurricane Katrina (Aug 29, 2005) in Bay St. Louis, MS; Hurricane Sandy (Oct 31, 2012) in Atlantic City, NJ, and Hurricane Maria (Sept 20, 2017) in Playa de Humacao near Yabucao, Puerto Rico.

Once you “arrive” at your destinations, follow the steps below to explore and answer the questions.

**Hurricane Katrina and Bay St. Louis, MS**

* Open Google Earth.
* Use search box to fly to coordinates: 30.314046°, -89.290013° (Bay St. Louis, MS). Using timeline tool, view 7/2005, 12/2006 and 2/2017.
* Compare the views for each of these dates. Make notes on the evidence of damage from Hurricane Katrina. With the eye altitude set about 250 m, make an estimate of the percent of houses that were damaged by the storm in this location. Estimate the percent of houses repaired by 2/2017.

##### Questions 1-2

1. Approximately what percentage of houses were damaged by Hurricane Katrina in Bay St. Louis, MS?
2. Approximately what percentage of houses damaged were repaired in Bay St. Louis, MS by 2017?

**Hurricane Sandy and Mantaloking, NJ**

* Use search box to fly to coordinates: 40.040287° -74.049937° (Mantaloking, near Atlantic City, NJ). Using timeline tool, view 12/2010, 11/2012, and 7/2018.
* Compare the views for each of these dates. Make notes on the evidence of damage from Hurricane Sandy. With the eye altitude set about 250 m, make an estimate of the percent of houses that were damaged by the storm in this location. Estimate the percent of houses repaired by 2018.

##### Questions 3-4

1. Approximately what percentage of houses were damaged by Hurricane Sandy in Mantaloking, NJ?
2. Approximately what percentage of houses damaged were repaired in Mantaloking, NJ by 2018?

**Hurricane Maria and Playa de Humacao, Puerto Rico**

* Use search box to fly to coordinates: 18.163000, -65.745400 (Playa de Humacao near Yabucao, Puerto Rico). Using timeline tool, view 8/2017, 10/2017, 11/2018
* Compare the views for each of these dates. Make notes on the evidence of damage from Hurricane Maria. With the eye altitude set about 250 m, make an estimate of the percent of houses that were damaged by the storm in this location. Estimate the percent of houses repaired by 11/2018.

##### Questions 5-6

1. Approximately what percentage of houses were damaged by Hurricane Sandy in Playa de Humacao, PR?
2. Approximately what percent of houses were repaired in Playa de Humacao, PR by 2018?

**Comparing the Impact and Recovery of the Three Communities**

1. Based on information in the Wikipedia links provided, which of these storms was assigned the greatest strength on the Saffir Simpson Scale (category) when it made landfall in or near the location you viewed?
2. Which of the communities examined on Google Earth sustained the most impact in terms of percent of houses damaged?
3. Which of the communities examined on Google Earth appeared to make the most compete repairs, bringing the number of intact houses back closest to pre-storm numbers?
4. What is a likely explanation for the unexpected result observed here in terms of hurricane strength versus level of damage to a community close to the landfall location of a hurricane?

Lab Completion Instructions

Once you have worked through all of the steps, go to the **Module 5 Lab** **in Canvas** to complete the Lab by answering the two multiple-choice questions. Remember, the answers to questions on this Lab worksheet will match choices in the multiple-choice questions in Canvas. Submit the quiz in Canvas for credit.