Earthquake Preparedness

Create a separate word document that has the answers to the questions below. (You do not need to repeat the question, just give your answers on the file you create). Please be sure to read all and follow all directions.

For this assignment, you will be reviewing a United States Geological Survey publication called "Putting Down Roots in Earthquake Country" which can be downloaded from Canvas.

Pages 4-7

1. What was the magnitude of the 1906 SF Earthquake? What was the length of the fault rupture?

2. What was the magnitude of the October 1989 Loma Prieta EQ? Approximate the length of fault rupture from the map.

3. Explain how earthquake frequency in the Bay Area changed as a result of the 1906 SF Earthquake.

4. According to geologists, what is the likelihood of a large magnitude earthquake occurring in the Bay Area in the near future? (one sentence that gives the % and the range of time).

5. Which Bay Area Fault has the highest probability for the earthquake described above? What is the probability?

"Why should I care?" Pages 8-11

6. The intensity of shaking, and therefore the damage produced during an earthquake is controlled by what 3 factors?

7. Explain what caused the collapse of a section of the Cypress Freeway structure in Oakland during the 1989 Loma Prieta Earthquake.

8. Of the hazards explained on pages 10-11, pick 4 that you believe pose the greatest risk in the Bay Area. List and briefly explain the hazard and why you think this hazard is prevalent in the Bay Area.

How do I find out about expected shaking in my neighborhood?

- Read the box on the bottom of page 12 then visit the following website to answer the following questions based on where you currently live. (Note: the website listed on the PDF is out of date so use the link below.) You can select specific layers by clicking on the box that you are interested in. Spend a little time acquainting yourself with the layers of the map, be sure all else is de-selected except for the Earthquake Fault Zone layer. For the questions below, you will also select a specific layer which is highlighted in the text for each question.

  Note: if you don't currently live in the Bay Area, you can use San Jose State to answer the questions that ask you about your neighborhood.

https://mtc.maps.arcgis.com/apps/webappviewer/index.html?id=4a6f3f1259df42eab29b35dfcd086fc8

9. According to the Shaking hazards layer (Probalistic Earthquake Shaking Hazard), most of the Bay Area has a high probability of Strong shaking. However, some locations may experience Violent shaking. Of the 3 factors that you listed for question #6, which do you think is contributing to the Violent shaking in these areas. (Notice the mainly linear trend for violent shaking). Explain.

SHAKING HAZARDS

- Find your home (to the best of your ability).

10. According to the map, what level of shaking is likely in your neighborhood?

LIQUEFACTION SUSCEPTIBILITY

- Select the Earthquake Liquefaction Susceptibility layer and zoom into your neighborhood. (Note that you if you temporarily de-select the layer you are looking at, you will see a street map of the Bay Area below the layer. This will let you find your neighborhood and maybe even your street more easily.) According to the map, how susceptible is your neighborhood to liquefaction?

11. There are several sections of the map (between highways 880 and 101) that have a High or Very High susceptibility to liquefaction. Zoom into those areas and determine what geographic feature may be causing this trend.

Pages 13-17

- This section details some of the things you should consider while preparing for an Earthquake, including why you should prepare and the things you can expect to be affected by a large Earthquake. While you don't have to answer any questions about this section, I highly recommend that you read through it. The test of your preparedness will not be in this class, but in the real-world scenario of an earthquake. Something to consider…

(You are answering the following questions.)

7 STEPS FOR EARTHQUAKE SAFETY Pages 19-28

The PDF outlines 7 steps for Earthquake Safety. Read through them.

12. What is step 1?

13. What are some things you can do in your home to better prepare before an earthquake occurs?

- Great. Now go and do them!

14. What is step 2?

15. Of the many things listed in step 2, what are some things you can do to prepare?

- Again, go complete these tasks (at least a few of them!)

Disaster Preparedness Kits

16. Step 3 suggests that you have 2 separate disaster preparedness kits (one for your household and a personal one). Make 2 columns and compile a list detailing what you will include in each of these kits. Underline each of the things that you still need to purchase or otherwise acquire for each kit.

- Continue reading through the rest of the document, paying particular attention to what you should do during an earthquake. Again, you aren't

graded on this part, but the “Big One” is going to happen, now is your chance to be prepared.