Assignment 1: Earthquake & Natural Disaster Preparedness

This assignment is about Earthquake and Natural Disaster Preparedness.

As a geologist working with the Earthquake Hazards program at the US Geological Survey, I was asked many times: "**When will there be the next big earthquake**?"
My answer was always: "**Yes!**"
The fact is we know that major earthquakes have happened many times in the past, and they will happen in the future. ***The landscape preserves an abundance of evidence of past earthquakes.*** We just don't know precisely when. We do know that many major earthquake faults are long overdue for a major quake, and they could happen at any time. So what can we do about it?

Society has many solutions to potential disasters:
Political & Social Disasters -- we have the police and the military.
Health Disasters -- we have hospitals.
Fires -- we have fire departments.

When it comes to natural disasters, things get somewhat less clear.
We do have building codes and construction permits that can help mitigate potential risks related to earthquakes, landslides, flood, and fires. However, sometime the shear magnitude of an event can be overwhelming.

Before you start on this assignment please review the following website publications:
Putting down roots in earthquake country

Your assignment: Read and then answer the 5 questions posted below:

Start by carefully reading the report. Answer the following questions:
Question 1. What and where is the major fault that is closest to your home (and/or work) (**see page 5**)?
Question 2. Examine the "**Expected Shaking**" and "**Earthquake Forecast**" maps on **page 7**. Based on the colors on the two maps, what is the "**likelihood of intense shaking**" and "**probability of rupture surface within 5 miles** of your home/work? (see the map legends).

Carefully consider the "**Seven Steps**" starting on **page 14**.
Based on what you have read: **Answer the following questions**:
Question 3. How are you currently prepared for a major earthquake and related disaster?
Question 4. How are you NOT READY for such a disaster?

Question 5. Describe what you might include in a **Disaster-Preparedness Plan** (see info starting on **page 18**).

Completing **Chapter 7 - Faults, Earthquakes, and Landscapes**
(Links to an external site.)
Links to an external site.
may help you with this assignment. There are maps, illustrations, and website links you may find helpful.

An answer in the range of 200 - 400 words might be appropriate (2 pages).

Reminder: Please proof-read your work. Spell check, **save your work**, then copy and paste your text in the **Submit Assignment box**. ***Please be careful here!*** Only answers properly **submitted in Canvas** will be graded. Please do not seen me this material in an-email.

For students that do not live in Southern California, use a Miracosta College campus location to answer questions 1 and 2 if you cannot find information about where you live.

Assignment 2: Water Resources Where You Live

I grew up on a farm along the Miami River valley near Cincinnati, Ohio. We had a 200 foot deep well that provided excellent drinking water, for most of the year... During dry periods, common in the late summer and fall, our well would go dry. We then has to pay to have "city water" (***treated*** river water) delivered to fill a cistern. One year, a release of pollution upstream, shut down the city water supply, and we had to drive to Indiana to buy bottled water (it sold out in local stores). Water supply can be "iffy" even in humid regions!

Our water comes from "somewhere." Here in San Diego we get our water from 3 primary sources:

50% comes from the Colorado River (via the Colorado River Aqueduct)
30% comes from the CA State Water Project (the canal/aqueduct system from northern California)
20% comes from "Local Supplies" and conservation.

Parts of San Diego are now suppled by the new **Carlsbad Desalination Plant**
(I encourage you to read about it!).

Very little of the water supply in San Diego comes from wells (groundwater resources).

Cities throughout San Diego County are now "recycling" water - treating sewage and urban runoff so it can be used for irrigation in parks, schools, golf courses, landscaping along roads and highways, and local agriculture projects.

Think about all this water being imported into San Diego, and how much of it is being used to water landscapes. It is now wonder that streams that otherwise would dry up during the dry season are now perennials streams. There are many new seeps in the sea cliffs along the coast as well. There is the equivalent of a whole new river flowing into San Diego County!

This Assignment: Describe your water supply.

Important! I recommend that you complete **Chapter 12 - Streams, Rivers, & Water Underground** before to start this assignment. It will introduce you to terms and concepts that you will need to understand, and provide you with ideas how to proceed with this assignment.

This assignment is intended to get you to know "your water" first hand: (**Answer these questions.**)
1. How and where "you" (your community) gets your water?
2. Who manages your water? (You need to research online the water organizations that manages your water - you are no doubt part of a ***water district***).
3. **What is the nature of the watershed where you live?** (Describe the "***local water supply***" - You live in a ***watershed***: describe the headwaters, principle streams, where does it drain?)
4. **How is water stored in your watershed/water supply region?**
5. **What happens to your water when "you" (your community) are done using it?** (Where does it go? How is it treated?)

Assignment 3: Geology of National Parks

This assignment is intended to help you learn more about the regional geology of parts of the United States by examining the characteristics of national parks.

Assignment: Describe the Geology and Characteristics of 5 US national parks

Chose **5 parks** located in **5 different states and regions** around the country. Briefly answer the following questions about each park.
1. **Describe the physical geography**: where is it located, what major geographic features are in or around the park (such as mountains, rivers, deserts, volcanoes, etc.)? In which **physiographic province** is it located?
2. **What is the primary geology of the bedrock in the park** (sedimentary, igneous, metamorphic, and what geologic ages)?
3. **What geologic processes are dominantly shaping the landscape?**
4. **How does geology and weather/climate influence the wildlife (plants/animals) in the park?**
5. **What do you find most interesting or attractive about the park?** (Why you would go there?)

You may want to use the following resources:
National Park Service website - be sure to examine the brochures and maps!
Geology of National Parks (US Geological Survey) - this website provides lots of images with descriptions of the geologic feature of the park.
Regional Geology of the United States (this website describes physiographic provinces.)

(**Special note**: ***Your professor compiled the last to sites listed above!*** As a teacher with my summers free, and while working with the USGS, I visited almost all of the national parks to photography geology and landscapes.)

You might want to review **Chapter 3 - Basic Geologic Principles & Maps** before starting this assignment. **Chapters 8 to 16** may also have information specific to your parks!

An answer in the range of 200 - 400 words might be appropriate (2 pages).

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