Instructions for Working with the Sea Level Activity Data (Research Quality Data)

1. Go to the University of Hawaii Sea Level Center Website (http://uhslc.soest.hawaii.edu/uhslc/data.html)
2. Click on the map to zoom into your location of choice. Click on your station of choice.
3. If available, select **Fast Delivery Data** (RECOMMENDED). If Fast Delivery Data is not available, select **Research Quality Data**.
4. Right click **Monthly Data** and select *Save Link As*. Name your data text file (eg SanFran.txt). NOTE: Research Quality Data divides displays each year on two lines. The first line of each year has months January – June and the second line has July – December. In addition to the sea level values for each month (4 digit number) is also the number of missing days for that month (2 digit number). In order to more easily manipulate this text file in Excel, we will first edit the data in Microsoft Word.
5. Open Word and open your data file (remember to display ALL file types). First, switch your page layout from Portrait to Landscape.
6. Edit your data to put each year on one line. Be sure to delete the station number, name, year and which half of year (2) that would be between the first six months and the second six months of each year. Save your data keeping it in text format.
7. Text Import Wizard
   - Step #1: select **Fixed Width**. Next.
   - Step #2: drag and insert new column lines to divide your data into columns (ignore the first line of heard information). If you used, Fast Delivery Data, the columns will be:
     - Station #
     - Station Name
     - Year
     - Sea levels values for each month (4-digit number)
     - Number of missing days for each month (2-digit number)
     - Note: The very last column *may* have an artifact symbol at the end of the data value. If so, put a column line between the number and the symbol to cleave that from your data.

     Click next.
   - Step #3: Finish
8. To clean up your data, delete all the columns that display the number of missing days (now a 1-digit number usually 0-2). Label your columns and save the file as an Excel file.
9. Any data point with a value of 9999 means there is no data for that month. Do a search all and replace “9999” with a blank or empty cell (do not use a “0” value).
10. Find the yearly average sea level value by averaging the January through December values for each year.

11. Create a line chart of your average yearly values.
    - Highlight your yearly values and click on the chart wizard icon in toolbar.
    - Select the *Line chart, Sub-type with data points*. Next.
    - Select **Series in columns**. Under the *Series* tab, click on the icon by the *Category (x) axis labels* and highlight the years values from your data sheet. Next.
    - Select your chart options. Next.
    - Place your chart as a new sheet. Finish.
12. On your chart, adjust the axis as necessary. Recommend major gridlines every 25 mm and minor tick marks at 5 mm. Reduce the y-axis scale to only what is necessary.
13. Right click on your data line and select **Add Trendline**, **Linear**. OK.
14. Calculate the average annual sea level change.
    - Approximate the sea level value at the start of your trend line (Start Value)
    - Approximate the sea level value at the end of your trend line (End Value)
    - Subtract the Start Value from the End Value then divide by the number of years. This gives you the average annual sea level change in millimeters.