Analyzing benthic sediments for grain size and total organic carbon content is important in understanding the changing health of the aquatic environment. Grain size is an important factor to consider because it is associated with the sediment's ability to hold onto toxic heavy metals, along with tracking where the sediment came from. Carbon content of sediments have many effects on the environment, such as maintaining temperature, nutrient availability, pH and more. Benthic sediment samples were collected in 2022 from the Commencement Bay region of the Puget Sound by Washington State Department of Ecology's Marine Sediment Monitoring Team and were analyzed for grain-size and total organic content. A Beckman-Coulter Particle Size Analyzer was used to determine the grain-size distribution, using laser diffraction. A loss on ignition technique was performed to measure the percentage of carbon. The percentage of carbon for the dry weight ranged from 1.89% to 9.38% (1.37% - 4.96% for wet weight), with a median of 5.11% (2.62% for wet weight). These numbers are lower than expected, based on a previous experiment with sediment samples from King County, where carbon typically makes up 8 - 10% of the dry weight. A linear regression showed that smaller grain sizes were poorly correlated with higher total organic content when measured dry. The median grain size ranged from 18.750 to 488.800 micrometers with a median of 101.350. Continued analyses could compare sediment characteristic at different times to monitor the environment's health.