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### **Proposal to Study Sedimentation Rates of the Waterbury Reservoir**

The objective of this project is to determine the sedimentation rates in the Waterbury Reservoir. We will be measuring the amount of sediment in different location of the reservoir to determine where the highest aggradation occurs. The volume of the reservoir, along with the influx of sediment over time, can be used to determine how long it would take to fill the reservoir.

The materials needed for this project will be a bucket auger, GPS meter, Tape measure, and two shovels. A bucket auger will be used to determine the amount of sediment in five sites, which will traverse the reservoir. We will also dig two trenches that are one meter by one meter in two of the middle sites. A cross section of the reservoir will then be used to determine cycles or patterns in the sedimentation. We expect to see a variation in sedimentation from the center to the sides of the reservoir, since the center of the reservoir is generally the deepest basin. We may also find seasonal cycles preserved in the sediments, since winter sedimentation is generally less than that of the spring. The spring deposition will be indicated by larger grained sediments, and thicker layers. The winter deposition will have smaller grained sediments, and are generally thinner layers.

The volume of the reservoir will be determined by creating a bathymetric map and using the isoheyt method for weighted averages. Using the areas of the contours, and the depth of the sediment we can calculate the volume.

In conclusion, our study will quantify sedimentation rates in the Waterbury reservoir. The sedimentation rates will then be used to determine cycles and spatial variability in the reservoir.