Effective capping of a dredged material mound requires complete coverage of the dredged material mound with a set thickness of cap material. To completely cap the deposit, the areal extent of the mound must be known as well as the height of the deposit. The DAMOS Capping Model may be used to predict the diameter of the dredged material mound as well its height.

The DAMOS Capping Model predicts the extent and height of a mound by taking a known composition and volume of material and distributing it within a set radius of operations based on a center weighted distribution. The number of points in the distribution is calculated based on project volume and the average barge load. Running the Capping Model using variables from five known dredged material mounds in Long Island Sound produced predicted mound heights with an average error between 15 and 25% of the actual mound height. Independently altering the variables showed the model to be very sensitive to the distance used as the radius of operations. Because the model uses a center-weighted random distribution pattern, the closer the actual distribution pattern resembles this the more accurate the model will be.

In order to make the actual dredged material disposal mimic the random center-weighted distribution, there must be a taut-wire moored disposal buoy at the site, and there must be tight navigational control over the disposal operation. If this field criterion is met, and if the grain size composition and average barge volume used in the model are approximately correct (within about 500 m^3 barge volume and with a grain size that is not skewed towards the opposite end member) the DAMOS Capping Model will very accurately predict the areal extent of the dredged material.

To effectively cap a dredged material mound requires knowing the area that the cap material has to cover. The DAMOS Capping Model will supply that answer. Being able to accurately predict the mound height is necessary to determine if the dredged material mound has exceeded the minimum water depth (and is exposed to erosion) and to determine if all the material is accounted for in the mound. In general, the DAMOS Capping Model predicts mound height with less accuracy than it does areal distribution. However, when the DAMOS Capping Model is run 5 times to predict a mound height at the 90% confidence level, it is very accurate (-0.13 m error) for mounds that have been formed with a small radius of operations and that have had barges release the material in a center- weighted distribution pattern.