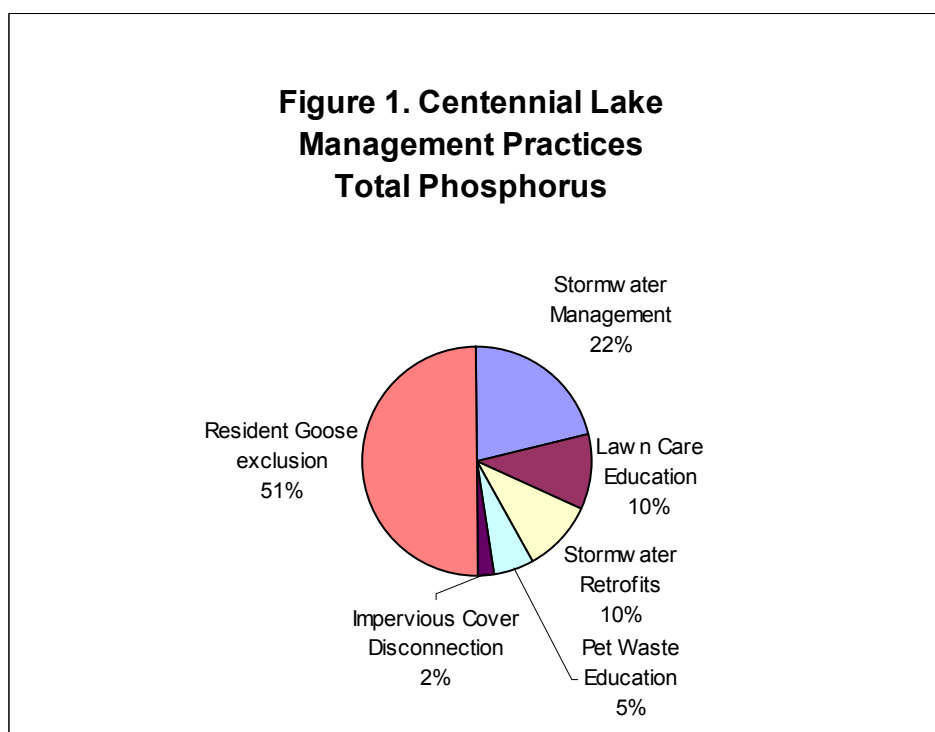


## **APPENDIX G**

### **Watershed Treatment Model Results**

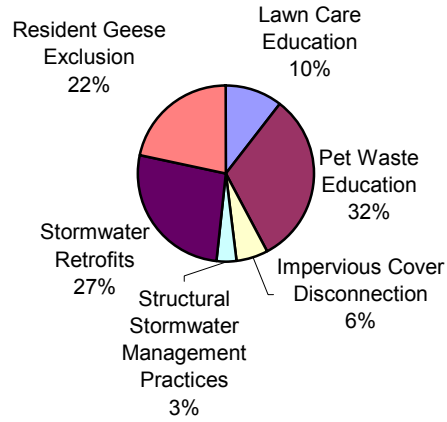


A preliminary run of the Watershed Treatment Model (WTM) was used to estimate the potential water quality benefits from the recommendations for the Centennial and Wilde Lake watersheds efforts identified in Section 4. The model was developed by the Center for Watershed Protection for the Environmental Protection Agency in order to estimate the effects of management efforts on nutrient and sediment loads (Caraco, 2001). Base loads are computed using the simple method and land use/land cover loading coefficients for primary loads. Secondary loads are estimated based on the quantity of typical contributors to secondary loads including septic systems and livestock. Nutrient and sediment reductions are calculated based on reported efficiencies for urban stormwater treatment practices and literature research values for other beneficial practices such as stream restoration and non-structural practices such as lawn care and pet waste education.

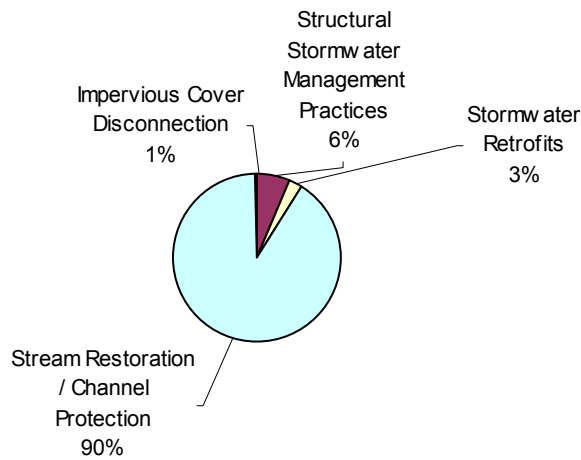


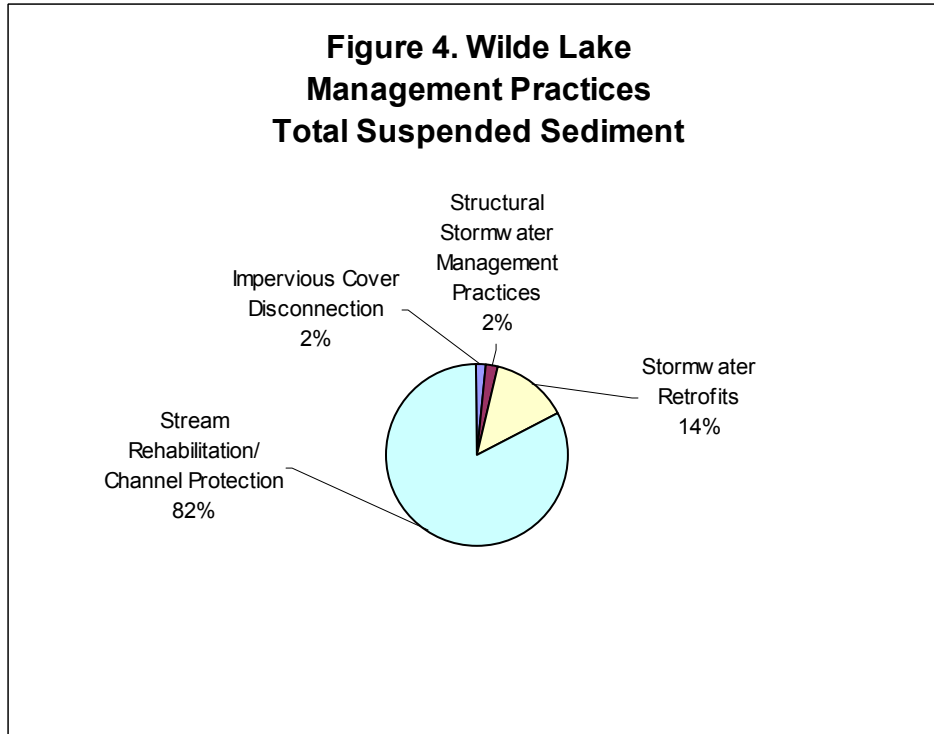
In the Centennial Lake watershed, based on assumed implementation of all of the priority restoration projects, the model predicted a 15 to 20% reduction in the known total phosphorus (TP) load and 20 to 25% reduction in total suspended sediment (TSS). In the Wilde Lake watershed, the model predicted a reduction of 20 to 25% in the known load of total phosphorus and a 25% reduction in the TSS load based on implementation of the full suite of priority restoration practices. Figures 1, 2, 3, and 4 show the breakdown of the effect of various management practices on phosphorus and total suspended sediment reductions of known sources of the pollutants in the two watersheds.

**Figure 2. Wilde Lake Management Practices Phosphorus Reduction**



**Figure 3. Centennial Lake Management Practices Total Suspended Sediment**





The preliminary run of the model includes the following limitations:

- 1) Limited quality assurance performed for the preliminary run
- 2) Agricultural BMPs other than riparian buffers were not taken into consideration
- 3) Internal lake sediment phosphorus release could not be estimated or measured
- 4) Assumes all the recommendations will be implemented

The model can be used over time to measure yearly progress in reaching the load reductions. The model can be updated to reflect the current load reduction estimates as future projects are implemented.