

**Maryland Department of the Environment**

**Enhanced Nutrient Removal Program  
Technical Review Subgroup**

**Preamble**

To implement the Enhanced Nutrient Removal (ENR) program in accordance with the draft ENR Implementation Strategy as issued by the Maryland Department of the Environment (MDE), the MDE formed a Technical Review Subgroup (TRS) consisting of governmental agencies and engineering consultants that jointly represent major participants for future ENR program implementation.

The governmental agencies consisted of Maryland Department of the Environment; Maryland Environmental Services; Baltimore City Department of Public Works; Anne Arundel County Department of Public Works; Frederick County Department of Utilities and Solid Waste Management; St. Mary's County Metropolitan Commission; Washington County Department of Water Quality; and Washington Suburban Sanitary Commission.

The engineering consultants consisted of ARRO; Black & Veatch; CH<sub>2</sub>M/Hill; Dewberry; Gannett Fleming; George, Miles & Buhr; Johnson, Mirmiran & Thompson; KCI Technologies; O'Brien & Gere; Rummel, Klepper & Kahl; Stearn & Wheler; and Whitman, Requardt & Associates.

The joint effort attributable to the TRS represents at least 95% of the total workload needed to implement the targeted 66 major wastewater treatment plants that currently discharge excessive amount of nutrients in the forms of nitrogenous and phosphorous compounds into the Chesapeake Bay and its tributaries.

MDE gratefully acknowledges that each TRS member contributed invaluable experience in wastewater treatment plant performance and unique technical expertise in engineering design and cost estimate of facilities related to the biological nitrogen removal as well as enhanced nutrient removal. Their contributions and efforts in technical aspects of the ENR program are highly commendable.

This report of the TRS, as presented hereafter, consists of two parts: Part "A" establishes procedural requirements of technical review and guidelines of eligibility for BNR/ENR grant participation; Part "B" sets forth design criteria and cost estimate methodology for BNR/ENR facilities.