

Assessing Potential Contaminant Removal from Sediments within the First Wetland Mitigation Bank in New York City

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Background/Objectives. Louis Berger is assisting the New York City Economic Development Corporation in the development of the Saw Mill Creek Pilot Wetland Mitigation Bank project, the first wetland mitigation bank in New York City. The project area consists of 68.9 acres of previously filled and degraded urban wetlands and upland buffers on Staten Island located along Saw Mill Creek, a tidal tributary of the Arthur Kill. The project will restore or enhance tidal emergent wetlands, scrub shrub wetlands, freshwater forested wetlands, open water channels/pools, mudflats, and uplands habitats. The project performance will be measured by success criteria developed in collaboration with state and federal agencies.

Specific to this presentation, the permit conditions include requirements for the characterization of sediment concentrations at the post-grading (as-built) conditions as well as a post-construction monitoring program for sediments and biota. The premise for the additional sampling, now a typical requirement for wetland mitigation banks in the Hudson River Estuary, is based on agency concerns that wildlife attracted to the “clean” and newly established marshes could be exposed to contaminants that may accumulate at the site over time from other sources within the estuary.

Approach/Activities. A post-grading and post-construction monitoring program was developed using Incremental Sampling Methodology to collect sediment composite samples to determine surface sediment concentrations. Post-grading sediment concentrations needed to be below the New York State Class C Sediment Guidance Values to be protective of aquatic wildlife; otherwise, the area will be backfilled to finish grade with clean sand prior to planting. Sediment sampling will be repeated during the 5-year monitoring program, with the post-grading sediment sampling results providing the baseline for comparison and measuring the efficacy of the reestablished wetlands. Post-grade sediment concentrations, implementation of the Incremental Sampling Methodology, and application of the New York State Sediment Guidance Value will be presented and discussed.

Results/Lessons Learned. Louis Berger faced several challenges with the sampling program, including: working within a tidal system; conducting the post-grading sediment sampling in conjunction with ongoing construction activity and within restricted time frames to maintain the construction schedule to meet critical planting windows; and implementing the Incremental Sampling Methodology. It is our hope that the findings of the sampling program will help demonstrate success of the Saw Mill Creek Pilot Wetland Mitigation Bank, which may facilitate larger wetland restoration projects in New York City’s ecologically sensitive coastal areas, while also directing more public and private funds for restoration of damaged ecosystems.