Task 1 - Conceptual Wetland and Upland Buffer Restoration and Enhancement Plan for the Dr. Marsh Site:

Based on discussions with the Village of Orland Park, the U.S. Army Corps of Engineers and interested stakeholders, CBBEL will prepare a Conceptual Wetland and Upland Restoration and Enhancement Plan for the Dr. Marsh project site. The Conceptual Restoration and Enhancement Plan for the target area will be consist of a two part document including stand-alone restoration and enhancement techniques for the Dr. Marsh wetland complex including emergent marsh, wet meadow and open water communities and well as the surrounding upland buffer habitat. If applicable and desired, the Wetland Restoration and Enhancement component will also include potential wetland creation grading in slightly higher elevational upland areas in the southern portion of the Dr. Marsh complex. The Upland Buffer Restoration and Enhancement component will include perimeter upland areas surrounding the marsh complex that will remain as upland in the post-construction condition. This will include perimeter woodland, scrub-shrub and herbaceous communities as well as areas remaining as upland islands in the southern portion of the site. As requested by regulatory agencies, proposed restoration and enhancement activities will include techniques to improve habitat for potential endangered and threatened species such as the black crown night heron or other suitable species.

The Conceptual Restoration and Enhancement Plan will include community type goals and objectives and descriptions of management activities to be completed in each community type including undesirable tree and brush clearing removal, potential hydrologic modifications within the wetland area, weed control and invasive species herbicide application procedures, supplemental seeding, follow-up management and burn maintenance. Descriptions of the proposed management activities and implementation procedures will be provided. CBBEL will prepare appropriate supplemental native seed mixes based on varying topographic and hydrologic soil regimes for the wetland, transitional and upland buffer communities. The Restoration and Enhancement Plan will also include a 5 Year Management and Monitoring Plan including target standards and suggested contractor guarantees for planting contractors to assist in seed and plant establishment. Target standards will include values for Floristic Quality, % coverage of seeded and planted species, native species presence and invasive species composition.

CBBEL will provide a discussion of follow-up and long-term natural area management techniques including weed control methodology and a suggested burn rotation program for the wetland and upland buffer communities. The burn plan will include a list of required permits, suggested implementation strategies and burn breaks. This task will provide a list of common weedy species observed within the community types and their suggested control methods including herbicide applications and manual removal. The task will include a schedule for optimal target months for common species and recommended number of applications per growing season. The Conceptual Restoration and Enhancement Plan will also include monitoring protocol and timeframes to evaluate the establishing natural areas and which can be used for evaluating contractor guarantees.

CBBEL will also include proposed recreational amenities in the Conceptual Wetland and Upland Buffer Restoration and Enhancement Plan. Recreational amenities will include both passive and active components such as a bike path/multi-use trail, gazebos, seating areas and interpretive areas and signage. The extent, number and location of proposed recreational amenities will be determined based on discussions with Village of Orland Park staff and the U.S. Army Corps of Engineers.

Note that the completed Conceptual Restoration and Enhancement Plan will be suitable for U.S. Army Corps of Engineers permitting processes but these services do not include Engineering Plans suitable for bid documents and construction activities within the project site. If desired, we can provide a scope of services and fee estimate for engineering services after acceptance of the Conceptual Restoration and Enhancement Plan.

Task 2 - Conceptual Hydrologic Modification Evaluation:

During discussions with Village staff and the USACOE, the concept of modifying the outlet of the wetland complex to increase the water surface elevation to "flood" the complex was mentioned. If it is determined by the Environmental Resources department that the conditions of the Doctor Marsh wetland complex could potentially benefit from altering the hydrologic conditions present, a detailed hydrologic and hydraulic analysis would need to be performed to determine the effects of these actions on the existing stormwater management activities of the wetland complex. The detailed analysis will include the creation of hydrologic and hydraulic models to simulate the 1, 2, 5, 10, 20, 50 and 100 year storm events and determine the impacts to the stormwater management system by altering the outlet. Potential impacts to be analyzed would include, but are not be limited to, the existing and proposed conditions water surface elevations of the wetland complex, existing and proposed floodway and floodplain of Spring Creek and upstream and downstream impacts. Conceptual plans and details for the outlet control structure would also be provided. This task does not include any potential permitting costs associated with the modification of the outlet to Spring Creek if it is deemed ecologically appropriate and beneficial to the overall stormwater management system to do so. If desired, CBBEL can provide a separate scope of service and fee estimate for these activities.

FEE ESTIMATE

We estimate the costs of the services to be the following:

Task 1A -	Field Investigation to Assess Existing Natural Area Resources and Develop Restoration and Enhancement Techniques including a Threatened and Endangered Species Habitat Evaluation	-	$1,600
Task 1B -	Wetland Restoration and Enhancement Component including Proposed Wetland Creation Grading	-	$2,200

Task 1C -	Upland Buffer Restoration and Enhancement Component including Proposed Recreational Amenities	-	$2,200
Task 1D -	5-Year Natural Area Management and Monitoring Plan including Contractor Performance Standards	-	$1,800
Task 2 -	Conceptual Hydrologic Modification Evaluation	-	$4,500