IEPA FINAL REPORT FOR

MUDDY WATERS POND RESTORATION PROJECT

AGREEMENT NUMBER 3190309

Prepared for:

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For Submittal to:

Illinois Environmental Protection Agency
1021 N. Grand Avenue East
P.O. Box 19276
Springfield, IL 62794-9276

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This report was prepared using U.S. Environmental Protection Funds under section 319 of the Clean Water Act distributed through the Illinois Environmental Protection Agency. The Findings and Recommendations contained within this report are not necessarily those of the funding agencies.

BACKGROUND

The shoreline stabilization/rehabilitation project was partially funded by a U.S. EPA 319 Nonpoint Source Pollution Grant through Illinois EPA and a grant from DuPage County Stormwater and Environmental Concerns. The project goals were to rehabilitate the shoreline to reduce nonpoint source pollution to St. Joseph's Creek and to create/enhance aquatic habitat. The goals were accomplished by re-grading and re-vegetating slumping turf slopes of a wet detention basin, creating a naturalized wetland basin. This detention pond, which was built in 1980 as detention for Williams Cove subdivision, is considered "waters of the U.S." due to its connection ("on-line") with St. Joseph's Creek. St. Joseph's Creek is a tributary to the East Branch of the DuPage River. Because of the on-line status of this pond, not only does this project benefit water quality and aquatic habitat for the pond, but for the overall ecological health of the downstream waterway. This project provided shoreline stabilization and aquatic habitat through regrading of the eroded banks and installation of native wetland and prairie vegetation. Approximately 1250 linear feet of shoreline was stabilized through implementation of this project.

PRE-PROJECT CONDITIONS

The project area was a typical detention pond with a maximum permanent pool depth of approximately four feet that was characterized by slumping and undercut slopes surrounded by turf grass within the upland area. The soils within the pond and immediate surrounding area, prior to excavation, were mapped as Peotone and Ashkum silty clay loams, and Markham silt loam, respectively. (Refer to EXHIBIT B – SOIL SURVEY MAP.) As previously discussed, no wetland habitat was associated with the pond - the project area is referenced on the *National Wetlands Inventory Map* as a palustrine, permanent open water system that has been excavated. (Refer to EXHIBIT C – NWI MAP.) The 100-year flood plain extends to elevation 737.8 (8.1 feet above normal water level). The pond is classified as Zone A on the Flood Insurance Rate Map. (Refer to EXHIBIT D – FIRM MAP.) No FEMA base flood elevation has been determined for the project site but provisional flood stages were provided by DuPage County and those elevations were used for all floodway/floodplain storage calculations. The pre-existing condition of the land surrounding the pond was turf grass with occasional shrubs and several trees.

Photographs that depict the pre-existing condition of the pond and eroding banks are provided at the end of this report. As can be seen in the photographs, most of the banks were undercut and had 1H:1V or steeper slopes.

Based on comparison the 1980 as-built drawings of the original shoreline to the pre-project conditions, the bank had receded an average of approximately 11 feet over the past 24 years. This recession rate equates to approximately 0.46 feet per year. With an average bank height of 3.75-feet and 1250 linear feet of shoreline, the Illinois EPA load reduction spreadsheet indicates an annual yield of 86 tons/year of sediment, 86 lbs/year of phosphorous, and 173 lbs/year of nitrogen. Refer to APPENDIX I for the BMP APPLICATION FORM and the BANK STABILIZATION WORKSHEET.

SHORELINE RESTORATION TECHNIQUES

The goals of the improvements were to control shoreline erosion, reduce nonpoint source pollution, and create emergent and fringe wetland habitats. The shoreline was stabilized through usage of the three techniques. First, a graded clay soil shelf with native wetland vegetation was used around most of the pond where there was adequate room for re-grading.

The second technique involved interplanted rock over geotextile where less room was available for grading, this treatment was provided in one location. Stone fishing platforms were used as the third technique and were selectively placed to protect existing trees. Construction work began with installation of erosion control measures in late June 2005 and concluded with seed and plug installation mid- to late August 2005.

Refer to Plan Sheets L1.01 for the pre-project grades and L3.01 for the proposed project grades. The locations where each of the techniques (other than the clay soil shelf) were applied are shown on Sheet L3.01 along with the original surveyed cross-sections shown on Sheets L3.02 and L3.03. The landscape plan is presented on Sheet L4.01 and the plant list on Sheet L4.02. The following is a discussion of each of the techniques, including methods of construction and installation measures along with an evaluation of improvements in water quality and habitat enhancement.

Shoreline Stabilization Treatments

Treatment 1: Clay Soil Shelf and Slope Regrading

Description: This treatment was used for the majority of the detention pond shoreline. The method of construction involved draw down of the pond to allow for construction in the dry. The re-grading of the shoreline was per plan documents. A 10H:1V slope from 6 inches below NWL to 6 inches above NWL was graded and compacted clay used to create a littoral shelf that was planted with native emergent vegetation. From 6 inches above to 18 inches above NWL, a 5H:1V slope was graded to support a wet mesic to mesic prairie landscape. The remaining slope was graded to a 3H:1V slope to meet the existing upland grades; this area was seeded with native mesic prairie vegetation. Immediately following seed installation, all disturbed areas had erosion blanket installed per plan documents.

In one location, adjacent to the outflow pipe on the north end of the pond, an outcropping wall was installed instead of the re-grade stabilization method. This structural technique was used as the method of stabilization within this area due to the installation of a sidewalk by the Village of Westmont. The sidewalk installation reduced the available area for regrading and created a steeper slope than could be reliably stabilized by non-structural methods. A plan view and cross-section of the outcropping wall are provided within APPENDIX II.

The total lineal footage of clay shelf treatment is approximately 1050 feet.

Refer to cross sections A-E and H-K for this technique.

Cost Considerations: This treatment method utilized on-site material from the "cut" portion of the banks to create the shallow shoreline slopes. The costs for this technique included labor and landscape materials. Due to the relatively large amount of earth moving and plant material, this was the most costly of the proposed techniques.

Advantages and disadvantages: This method provides long-term stabilization and at the same time creates wetland habitat. The primary disadvantage to this approach was that it required the pond waters to be drawn down to allow compaction of the clay shoreline shelf.

Maintenance: To ensure long-term stabilization, the slope and emergent shelf should be inspected periodically to evaluate potential soil loss as evidenced by increasingly greater exposure of root systems. Maintenance of the native vegetation will consist of spot herbicide

treatment, hand weeding, and mowing as necessary to maintain appropriate plantings within the first couple years of plant establishment. The long-term maintenance regime will be annual burn management.

Treatment 2: Interplanted Stone over Geotextile

Description: This technique was used to create a stable slope within a constricted setting at one of the inlets to the detention pond. The technique utilized angular stone (3-4") placed over geotextile. Rock was placed approximately 0.5 feet below NWL to 3.5 feet above the NWL. A stone depth of at least 8 inches was topped with planting soil to provide a planting medium for native seed and plugs that were installed within the interstitial spaces of the rock. Interplanting the stone provides a modest amount of additional stabilization, as well as improved habitat and aesthetics. Additional minor rip rap armouring was used along the slopes at each of the inlet pipes to address post-construction erosion rills.

Refer to cross sections F and G for this technique.

Cost Considerations: This was one of the least costly treatments since it involved little earthmoving and utilized relatively inexpensive materials.

Advantages and disadvantages: This was the least costly method to implement and given the ability to interplant and soften the appearance of the stone, this technique visually is similar to the clay soil shelf technique. Because this method did not create an aquatic shelf, it provided less aquatic habitat and less soil-water interface for water quality improvement. Also, this method was less morphologically sound than the primary treatment method since the stone was used to hold a steeper slope. However, due to the limited use of this technique and the addition of established plant roots, the integrity of the slope should endure.

Maintenance: To ensure long-term stabilization, the shoreline should be inspected periodically to ensure that the stone remains in place. Initially, inspections should occur each fall and spring and after each major storm event with high water levels. After time, the inspection interval should be re-evaluated to determine if adjustments are needed. Maintenance will include periodic replacement of stone and weeding as necessary to maintain appropriate plantings.

Treatment 3: Stone Fishing Platforms

Description: This treatment was used to allow preservation of existing trees that otherwise would have required removal to accommodate re-grading of the slopes. Outcropping stone was laid on a 3" gravel bed to create an area of approximately 9'x 3'. The graded upslope was seeded with turf grass. The stone also allowed creation of fishing platforms to improve public access.

This technique is shown on cross sections numbered 6 and 15.

Cost Considerations: Although the cost of the outcropping stone and their placement is somewhat high, there is little cost associated with earth moving. This technique was the most expensive shoreline treatment based on linear feet stabilization cost. However, this technique was selected due to its limited use and its coinciding functions of shoreline stabilization and safe access to the pond edge.

Advantages and disadvantages: This treatment provided naturalistic fishing platforms and was utilized in limited areas. The primary disadvantage was that this treatment did not provide any native habitat opportunities and was more expensive than the other techniques.

Maintenance: Maintenance should include periodic inspections to evaluate potential settling of gravel bed that may require the addition of gravel for stability and safety purposes.

Selection of Restoration and Stabilization Treatments

The goal for this project was to create stabilized slopes with a littoral shelf that provides emergent and fringe wetland habitat in a morphologically sound manner. The back slope and amount of erosion was characteristically uniform for the entire pond shoreline. Therefore, other than the few identified areas where interplanted stone or fishing platforms were utilized as the stabilization technique, the clay soil shelf with regraded slopes was the preferred technique for this project. As previously discussed, the interplanted stone technique was used within an area that had limited space and tighter slopes. The amount of earthwork that was necessary to achieve the desired slopes and stability was not feasible for this area. Also, the incorporation of fishing platforms within the design was a user-specific desire. Therefore, the treatment of outcropping stone provided a dual function of stabilization as well as a safe shoreline access point.

Summary of Shoreline Restoration and Stabilization Treatments

The general goals of the project were to create stabilized slopes thereby reducing nonpoint source pollution from eroding, unvegetated slopes and creating a littoral shelf to provide potential habitat via usage of native vegetation. With implementation of this project, the re-grading and stabilization of the slopes has provided improved water quality for the pond by reducing the amount of nonpoint source pollution, as discussed above. As the native vegetation establishes, this will also provide water quality benefits by filtering ambient landscape stormwater runoff as well as encourage settling of suspended solids, uptake of nutrients, and determent of Canada geese, which indirectly reduces animal waste as a pollutant. In addition to water quality benefits, the native vegetation will provide nesting, foraging, and shelter habitat for various small animals and birds.

The limited use of the interplanted stone, outcropping wall, and outcropping stone for fishing platform techniques allowed creation of emergent habitat over the majority of the shoreline. Use of these alternative techniques within specific areas of the project site was necessitated by limited space and tighter slopes, and to preserve existing trees and provide public access.

INSTALLED PLANT SPECIES

Refer to APPENDIX III for the PLANT LISTS that identify the species and quantities installed for this project. All proposed seed material, species and quantities, and woody plant material were installed as proposed.

ACTUAL COST BMPS

Refer to APPENDIX IV for the ACTUAL COSTS OF BEST MANAGEMENT PRACTICES for the installed treatments.

Appendix I

BMP Application Form and Worksheet

Bank Stabilization

Please fill in the gray areas below. If estimating for just one bank, put "0" in areas for Bank #2.
Once you have successfully estimated the sediment and nutrient load reductions,
please print a copy of this worksheet and attach it to the "BMP Application Form"
for submittal to the Illinois EPA.

If you have any questions, please contact the Illinois EPA's Nonpoint Source Unit
at 217/782-3362.

		Example
BMP Number:		**3199802001**

Please select a soil textural class:

○	○ nds, loamy sands	Silty clay loam, silty clay
○	○ ndy loam	Clay loam
○	○ e sandy loam	Clay
○	○ ams, sandy clay loams, sandy clay	Organic
○	Silt loam	

Parameter	Bank #1	Bank #2	**Example**	
Length (ft)	1250	0	**500**	
Height (ft)	3.75	0	**15**	
Lateral Recession Rate (ft/yr)*	0.46	0	**0.5**	
Soil P DEFAULT oil)**	0.0005	0.0005	**0.0005**	**
Soil N DEFAULT oil)**	0.001	0.001	**0.001**	**

*Lateral Recession Rate (LRR) is the rate at which bank deterioration has taken place and is measured in feet per year. This rate may not be easily determined by direct measurement. Therefore best professional judgement may be required to estimate the LRR. Please refer to the narrative descriptions in Table 1.
** indicates default values for P and N soil concentrations

Table 1

LRR (ft/yr)	**Category**	**Description**
0.01 - 0.05	Slight	Some bare bank but active erosion not readily apparent. Some rills but no vegetative overhang. No exposed tree roots.
0.06 - 0.2	Moderate	Bank is predominantly bare with some rills and vegetative overhang.
0.3 - 0.5	Severe	Bank is bare with rills and severe vegetative overhang. Many exposed tree roots and some fallen trees and slumps or slips. Some changes in cultural features such as fence corners missing and realignment of roads or trails. Channel cross-section becomes more U-shaped as opposed to V-shaped.
0.5+	Very Severe	Bank is bare with gullies and severe vegetative overhang. Many fallen trees, drains and culverts eroding out and changes in cultural features as above. Massive slips or washouts common. Channel cross-section is U-shaped and streamcourse or gully may be meandering.

Source: Steffen, L.J. 1982. Channel Erosion (personal communication), as printed in "Pollutants Controlled Calculation and Documentation for Section 319 Watersheds Training Manual," June 1999 Revision; Michigan Department of Environmental Quality - Surface Water Quality Division - Nonpoint Source Unit. EQP 5841 (6/99).

Estimated Load Reductions

	Bank #1	**Bank #2**	**Example**
Sediment Load Reduction (ton/year)	86	1	**150**
Phosphorus Load Reduction (lb/year)	86	1	**150**
Nitrogen Load Reduction (lb/yr)	173	1	**300**

Appendix II

Plans and Cross Sections

For plans, please contact the 319 Section at 217/782-3362.

Refer to full size drawings for the Muddy Waters Pond Restoration plans and cross sections.

Plan Sheet L1.01	Existing Conditions
Plan Sheet L2.01	Demolition & Site Preparation
Plan Sheet L3.01	Shoreline Treatment Plan
Plan Sheet L3.02	Shoreline Treatment Sections
Plan Sheet L3.03	Shoreline Treatment Sections
Plan Sheet L4.01	Riparian Plan
Plan Sheet L4.02	Riparian Plan Lists & Details

Appendix III

Plant Lists

EMERGENT WETLAND ZONE

5,500 sf

PLUG SPECIES & QUANTITIES

SCIENTIFIC NAME	COMMON NAME	APPROXIMATE % OF TOTAL PLUGS/ACRE	ESTIMATED QUANTITY OF PLUGS	ACTUAL QUANTITY OF PLUGS
Acorus calamus	SWEET FLAG	0.05	122	564
Alisma subcordatum	COMMON WATER PLANTAIN	0.05	122	122
Carex lacustris	LAKE SEDGE	0.10	244	408
Iris virginica var. shrevei	BLUE FLAG	0.05	122	284
Juncus effusus	COMMON RUSH	0.20	489	164
Pontederia cordata	PICKEREL WEED	0.15	367	367
Sagittaria latifolia	COMMON ARROWHEAD	0.20	489	211
Scirpus validus var. creber	GREAT BULRUSH	0.15	367	489
Sparganium eurycarpum	COMMON BUR REED	0.05	122	122
TOTAL PLUGS BASED ON 1.5-FOOT O.C. SPACING		1.00	2444	2731

WETLAND FRINGE ZONE

5,700 sf

PLUG SPECIES & QUANTITIES

SCIENTIFIC NAME	COMMON NAME	APPROXIMATE % OF TOTAL PLUGS/ACRE	ESTIMATED QUANTITY OF PLUGS	ACTUAL QUANTITY OF PLUGS
GRAMINOIDS				
Carex annectens	LARGE YELLOW FOX SEDGE	0.04	36	36
Carex hystericina	PORCUPINE SEDGE	0.04	36	36
Carex stipata	COMMON FOX SEDGE	0.04	36	36
Carex stricta	COMMON TUSSOCK SEDGE	0.04	36	167
Juncus effusus	COMMON RUSH	0.1	91	91
Panicum virgatum	SWITCH GRASS	0.1	91	255
Scirpus pungens	CHAIRMAKER'S RUSH	0.04	36	167
Spartina pectinata	PRAIRIE CORD GRASS	0.2	182	346
TOTAL GRAMINOID PLUGS BASED ON 2.5' O.C. SPACING		0.60	547	879
FORBS				
Asclepias incarnata	SWAMP MILKWEED	0.04	36	36
Aster novae-angliae	NEW ENGLAND ASTER	0.03	27	27
Eupatorium perfoliatum	COMMON BONESET	0.04	36	167
Helenium autumnale	SNEEZEWEED	0.04	36	36
Iris virginica var. shrevei	BLUE FLAG	0.05	46	46
Lythrum alatum	WINGED LOOSESTRIFE	0.03	27	0
Mimulus ringens	MONKEY FLOWER	0.03	27	0
Physostegia virginiana	OBEDIENT PLANT	0.04	36	200
Pycnanthemum virginianum	COMMON MOUNTAIN MINT	0.03	27	27
Vernonia fasciculata	COMMON IRONWEED	0.03	27	27
Zizia aurea	GOLDEN ALEXANDERS	0.04	36	36
TOTAL FORB PLUGS BASED ON 2.5' O.C. SPACING		0.40	365	602
TOTAL WET PRAIRIE PLUGS			912	1481

SEED SPECIES & QUANTITIES

SCIENTIFIC NAME	COMMON NAME	SEED WT/AC	ESTIMATED ** SEED WEIGHT
COVER CROP			
Agrostis alba	REDTOP	10.00 lbs	1.309 lbs
Avena sativa	SEED OATS	25.00 lbs	3.271 lbs
Lolium multiflorum	ANNUAL RYE	15.00 lbs	1.963 lbs
TOTAL COVER CROP/AC		50.00 lbs	6.543 lbs
GRAMINOIDS			
Carex cristatella	CRESTED OVAL SEDGE	0.125 lbs	0.016 lbs
Carex stipata	COMMON FOX SEDGE	0.125 lbs	0.016 lbs
Carex vulpinoidea	BROWN FOX SEDGE	0.125 lbs	0.016 lbs
Eleocharis acicularis	NEEDLE SPIKE RUSH	0.125 lbs	0.016 lbs
Eleocharis obtusa	BLUNT SPIKE RUSH	0.125 lbs	0.016 lbs
Juncus torreyi	TORREY'S RUSH	0.250 lbs	0.033 lbs
Leersia oryzoides	RICE CUT GRASS	4.000 lbs	0.523 lbs
Panicum virgatum	SWITCH GRASS	4.000 lbs	0.523 lbs
Scirpus atrovirens	DARK GREEN SEDGE	0.250 lbs	0.033 lbs
TOTAL GRAMINOID MATRIX/AC		9.000 lbs	1.178 lbs
FORBS			
Alisma subcordatum	COMMON WATER PLANTAIN	3.00 oz	0.393 oz
Asclepias incarnata	SWAMP MILKWEED	3.00 oz	0.393 oz
Aster novae-angliae	NEW ENGLAND ASTER	3.00 oz	0.393 oz
Aster simplex	PANICLED ASTER	2.00 oz	0.262 oz
Bidens cernua	NODDING BUR MARIGOLD	3.00 oz	0.393 oz
Eupatorium perfoliatum	COMMON BONESET	2.00 oz	0.262 oz
Helianthus grosseserratus	SAWTOOTH SUNFLOWER	3.00 oz	0.393 oz
Lycopus americanus	COMMON WATER HOREHOUND	2.00 oz	0.262 oz
Penthorum sedoides	DITCH STONECROP	2.00 oz	0.262 oz
Rudbeckia subtomentosa	SWEET BLACK-EYED SUSAN	3.00 oz	0.393 oz
Solidago graminifolia	GRASS-LEAVED GOLDENROD	2.00 oz	0.262 oz
Verbena hastata	BLUE VERVAIN	4.00 oz	0.523 oz
TOTAL FORB MATRIX/AC		29.00 oz	3.795 oz
TOTAL NATIVE SEED MATRIX/AC		10.81 lbs	1.415 lbs

Riparian Environment Plant Lists

MESIC PRAIRIE ZONE

15,200 sf

SEED SPECIES & QUANTITIES

SCIENTIFIC NAME	COMMON NAME	SEED WT/AC	ESTIMATED ** SEED WEIGHT
COVER CROP			
Agrostis alba	REDTOP	2.0 lbs	0.70 lbs
Avena sativa	SEED OATS	30.0 lbs	10.47 lbs
Lolium multiflorum	ANNUAL RYE	15.0 lbs	5.23 lbs
TOTAL COVER CROP/AC		47.0 lbs	16.40 lbs
GRAMINOIDS			
Andropogon gerardii	BIG BLUESTEM GRASS	1.5 lbs	0.52 lbs
Andropogon scoparius	LITTLE BLUESTEM GRASS	2.5 lbs	0.87 lbs
Bouteloua curtipendula	SIDE-OATS GRAMA	2.5 lbs	0.87 lbs
Elymus canadensis	CANADA WILD RYE	2.0 lbs	0.70 lbs
Panicum virgatum	SWITCH GRASS	2.0 lbs	0.70 lbs
Sorghastrum nutans	INDIAN GRASS	1.5 lbs	0.52 lbs
TOTAL GRAMINOID MATRIX/AC		12.0 lbs	4.19 lbs
FORBS			
Aster novae-angliae	NEW ENGLAND ASTER	2.0 oz	0.70 oz
Astragalus canadensis	CANADA MILK VETCH	2.0 oz	0.70 oz
Baptisia leucantha	WHITE WILD INDIGO	2.0 oz	0.70 oz
Coreopsis lanceolata	SAND COREOPSIS	2.0 oz	0.70 oz
Desmodium canadense	SHOWY TICK TREFOIL	2.0 oz	0.70 oz
Echinacea purpurea	BROAD-LVD PURPLE CONEFLOWER	3.0 oz	1.05 oz
Eryngium yuccifolium	RATTLESNAKE MASTER	1.0 oz	0.35 oz
Heliopsis helianthoides	FALSE SUNFLOWER	3.0 oz	1.05 oz
Lespedeza capitata	ROUND-HEADED BUSH CLOVER	2.0 oz	0.70 oz
Monarda fistulosa	WILD BERGAMOT	4.0 oz	1.40 oz
Penstemon digitalis	FOXGLOVE BEARD TONGUE	1.0 oz	0.35 oz
Petalostemum purpureum	PURPLE PRAIRIE CLOVER	2.0 oz	0.70 oz
Physostegia virginiana	OBEDIENT PLANT	1.0 oz	0.35 oz
Pycnanthemum virginianum	COMMON MOUNTAIN MINT	1.0 oz	0.35 oz
Ratibida pinnata	YELLOW CONEFLOWER	4.0 oz	1.40 oz
Rudbeckia hirta	BLACK-EYED SUSAN	4.0 oz	1.40 oz
Silphium integrifolium	ROSIN WEED	2.0 oz	0.70 oz
Silphium terebinthinaceum	PRAIRIE DOCK	1.0 oz	0.35 oz
Solidago graminifolia	GRASS-LEAVED GOLDENROD	2.0 oz	0.70 oz
Solidago rigida	STIFF GOLDENROD	1.0 oz	0.00 oz
Veronicastrum virginicum	CULVER'S ROOT	2.0 oz	0.70 oz
Zizia aurea	GOLDEN ALEXANDERS	2.0 oz	0.70 oz
TOTAL FORB MATRIX/AC		46.0 oz	16.05 oz
TOTAL NATIVE SEED MATRIX/AC		14.875 lbs	5.19 lbs

WOODY PLANT MATERIAL

GENERAL TREES

WOODY SPECIES		SIZE PER SPECIES	QTY.
(CO) Celtis occidentalis	HACKBERRY	1.5"	2
(QBi) Quercus bicolor	SWAMP WHITE OAK	1.5"	2
(QMa) Quercus macrocarpa	BUR OAK	1.5"	2

GENERAL SHRUBS - (Understory Shrub Replacement)

WOODY SPECIES		SIZE PER SPECIES	QTY.
(CA) Corylus americana	AMERICAN HAZELNUT	5 gal.	4
(VR) Viburnum rafinesquianum	DOWNY ARROW-WOOD	5 gal.	6

Appendix IV

Actual Cost BMPs

Illinois Environmental Protection Agency
Bureau of Water

P.O. Box 19276, 1021 N. Grand Avenue East
Springfield, Illinois 62794-9276

NONPOINT SOURCE POLLUTION CONTROL PROGRAM
BEST MANAGEMENT PRACTICE APPLICATION FORM

Project Title: Muddy Waters Pond Restoration Project

Recipient Name: Village of Westmont

Grant Number: 319 Agreement Number: 3190309

File Number: BMP Number:

Landowner Name: Village of Westmont & Westmont Park District

Address: 31 W. Quincy

City, State, Zip: Westmont IL 60559

Telephone Number: 630.969.8080 Fax Number: 630.969.7923

Tract Number: Farm Number:

Receiving Waterbody: St. Joseph's Creek

Hydrologic Unit Code: 07120004 County: DuPage

Waterbody ID: GBLB01 USGS Map Number:

Legal Description: NW ¼ Section 21 in Township 38North, Range 11East of the 3rd Meridian

Latitude: Longitude:

NRCS BMP Code: 995 BMP Name: Vegetative Streambank Stabilization

Proposed Start Date: March/April 2005 Proposed Completion Date: June 2005

Attach the following support documentation (or indicate that it is on file in accordance with the provisions of the Financial Assistance Agreement and with approval of the Illinois EPA):

1. *A copy of that part of a 7.5 minute USGS topographic map with the site of the best management practice (BMP) identified on it.*
2. *A brief description of the type, purpose, and function of the proposed BMP; the nonpoint source pollutants to be controlled; and characteristics of the site.*
3. *Plans and specifications for the proposed BMP with sign off by NRCS or registered professional engineer.*
4. *Landowner Agreement.*

As the landowner of the site for the BMP described in this form, I hereby authorize the release of this information to the Illinois EPA and the public:

Landowner Signature Date

This Agency is authorized to require this information under 415 ILCS 5/4(l). Disclosure of this information is required. Failure to do so may prevent this form from being processed and could result in your application being denied. This form has been approved by the Forms Management Center.

	ESTIMATED COSTS				ACTUAL COSTS			
	BMP Expenses	**Est. Units**	**Average Cost/Unit**	**Est. Cost**	**Actual Units**	**Actual Cost/Unit**	**Actual Cost**	
1.	Earthwork	1.00HR	28,000.00	28,000.00	1	27,800	27,800.00	
2.	Outcropping Stone	30Tn	483.45	14,503.50	30	483.45	14,503.50	
3.	Gravel	20Cy	131.97	2,639.39	20	131.97	2,639.39	
4.	Geofabric	60Sy	2.10	126.00	60	2.10	126.00	
5.	Angular Stone	18Cy	38.00	684.00	18	38.00	684.00	
6.	Seeding	1.5Ac	3099.00	4,648.50	1.5	3099.00	4,648.50	
7.	Native Plant Plugs	5,000Ea	4.79	23,962.50	5,000	4.79	23,962.50	
8.	Wildlife Exclusion Structure	24.00Ea	246.28	5,910.75	24	246.28	5,910.74	
9.	Erosion Control Blanket	4500.00Sy	4.96	22,338.28	4500	4.96	22,320.00	
10.	Stewardship/Maintenance	5.00Ac	1,140.00	5,700.00	5.00	1,140.00	5,700.00	
11.								
12.	Interpretive Signage	1	3,000.00	3,000.00	1	1,402.00	1,402.00	
13.								
14.								
15.								

(Attached Additional sheets if necessary)

$_____ x _____ % = $_____
Estimated Cost Illinois EPA Share Estimated Payment

$\_\_\_\_\_ x \_\_\_\_\_ % =$
Actual Cost Illinois EPA Share Payment

$_____ x _____ % = $_____
Estimated Cost Landowner Share Estimated Match

$_____ x _____ % = $
Actual Cost Landowner Share Match

PRE-CONSTRUCTION APPROVALS

_____
Recipient Date

_____
Illinois Environmental Protection Agency Date

POST-CONSTRUCTION CERTIFICATION

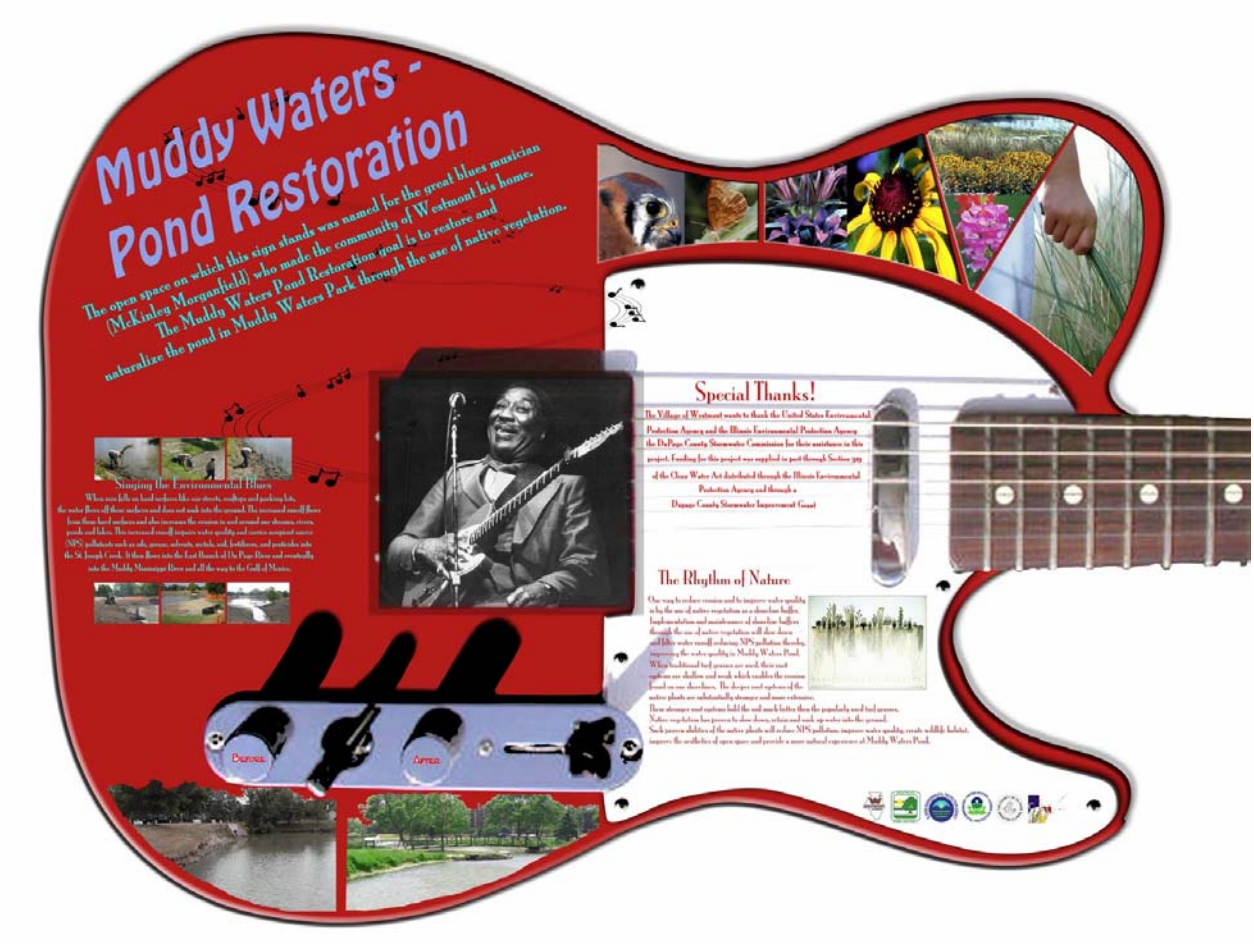
Actual Start Date:_____ Completion Date

_____
Recipient Date

Appendix V

Interpretive Signage

This interpretive sign was a collaborative effort with the Westmont High School Art Department. It creatively ties together the restoration of the pond with the Park's name sake, Muddy Waters, and his blues background.


Muddy Waters -
Pond Restoration
The open space on which this sign stands was named for the great blues musician (McKinley Morganfield) who made the community of Westmont his home. The Muddy Waters Pond Restoration goal is to restore and naturalize the pond in Muddy Waters Park through the use of native vegetation.
Singing the Environmental Blues
Special Thanks!
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The Rhythm of Nature
Bypass
Dam


PARK