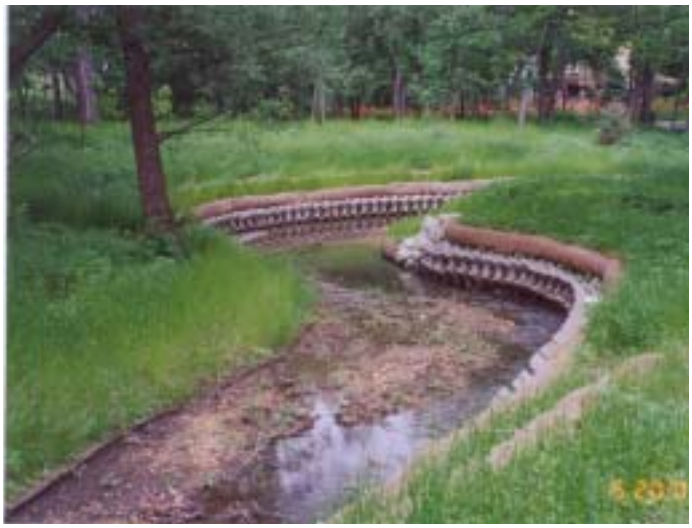
HOBSON CREEK CORRIDOR RESTORATION PROJECT, PHASE 1
TRIBUTARY 6 TO THE EAST BRANCH DUPAGE RIVER
Section 319 Project Report

Illinois EPA Agreement No. 3190213



Illinois Environmental Protection Agency
Bureau of Water
Watershed Management Section

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HOBSON CREEK CORRIDOR RESTORATION PROJECT, PHASE 1
TRIBUTARY 6 TO THE EAST BRANCH DUPAGE RIVER
SECTION 319 FINAL REPORT

ILLINIOS EPA FAA # 3190213
DECEMBER 2004

Prepared For:

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
BUREAU OF WATER – WATERSHED MANAGEMENT SECTION
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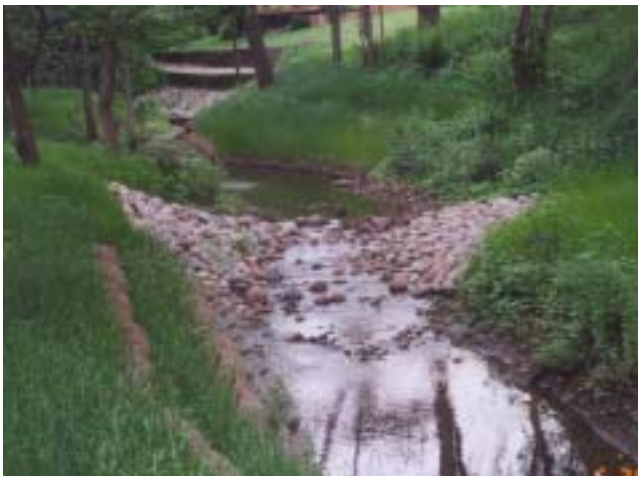

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HOBSON CREEK CORRIDOR RESTORATION PROJECT

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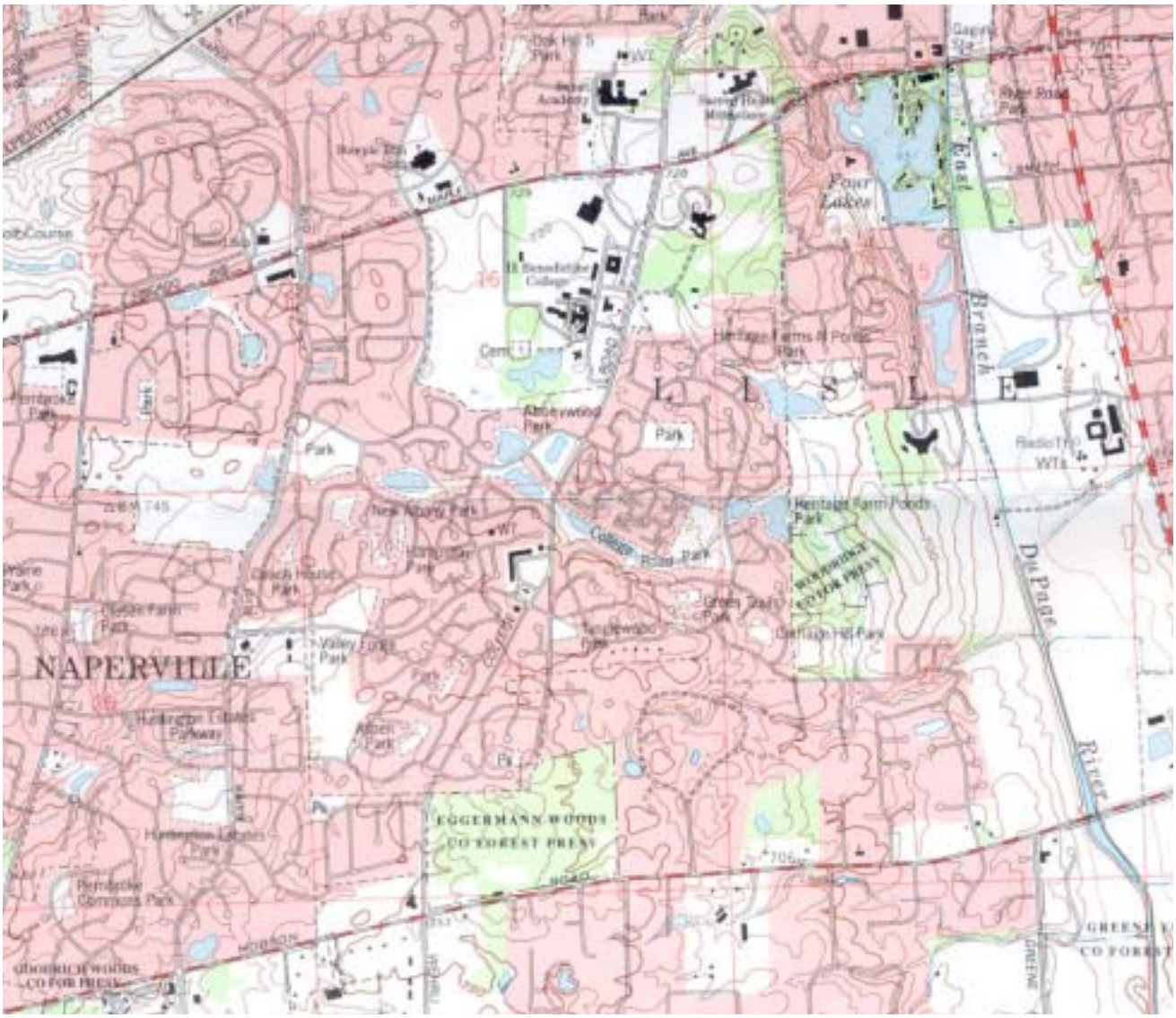
Summary:
The Hobson Creek Community Council completed the Hobson Creek Corridor Restoration Project, Phase 1 in order to protect against severe streambank erosion, to provide nonpoint source pollution control along Hobson Creek and to improve water quality of the downstream East Branch DuPage River. Installed stream stabilization techniques have provided effective and environmentally sound bank protection and channel stability for the Phase 1 reach. The Hobson Creek Community Council will provide long-term maintenance for the project site. Public involvement to date includes awareness of adjacent homeowners, numerous trail and parkway visitors near existing signage, and publication of three newspaper articles, one environmental newsletter article, and three professional trade magazine publications.

Introduction:
The Hobson Creek Corridor Restoration Project is located on common space owned by the Hobson Creek Community Council in unincorporated Naperville, DuPage County, Illinois. A small portion of the project area is located on private property within the Hobson Creek Community subdivision where the stream has migrated out of the subdivision common space. Hobson Creek has a 1.71 square mile watershed. The watershed is primarily comprised of single family and multi-family residential areas. Hobson Creek has also been identified as Tributary #6 to the East Branch DuPage River. The East Branch DuPage River is located approximately 1,100 linear feet downstream of the project site. The entire Hobson Creek Corridor has been divided into 3 reaches for construction implementation purposes:

Phase 1 – Upstream project boundary downstream to stream station 10+00 (Sta. 17+50 to 10+00)
Phase 2 – Stream station 10+00 downstream to Green Trails Drive (Sta. 10+00 to 3+50)
Phase 3 – Green Trails Drive downstream to Woodridge Park District (Sta. 3+50 to 0+00) and also the Hobson Creek Inlet Channel (additional 250 linear feet)

The Phase 1 project area is the subject of this Final Report. Phase 1 included a 750 linear-foot length of stream which had severely eroded streambanks and 1.61 acres of degraded riparian corridor. Severe streambank erosion was due several factors. Most of the watershed was developed prior to the enforcement of stormwater detention ordinances, resulting in the rapid discharge of large volumes of urban runoff. The streambank riparian corridor was impacted by a dense canopy of invasive shrubs including Buckthorn (Rhamnus cathartica) and Honeysuckle (Lonicera tatarica). The highly eroded streambanks contain little to no ground-stabilizing vegetation. This provided little functional benefit and contributed to site degradation. The stream channel had also incised approximately one to two feet into the landscape. Moreover, significant channel widening has occurred. There are several locations where bank erosion had forced channel migration out of the common space area into rear yards of individual townhome units. In some areas the streambanks were within 12 feet of undermining structural home foundations and within 5 feet of buried utilities. The Illinois EPA Load Reduction Spreadsheet was utilized to quantify the significant sediment delivery to the East Branch of the DuPage River as described below under Project Benefits.

A primary objective of the Hobson Creek Corridor Restoration Project was to improve the water quality in the project area and to reduce the sediment loading caused by streambank erosion into Hobson Creek and the East Branch DuPage River. This objective was accomplished by extensive streambank stabilization, installation of channel grade control structures, removal of invasive shrub species in the riparian area, and installation of native plantings along the stabilized streambanks and within the riparian area.



Location Map

Project Schedule

Table 1 below indicates the project schedule and completion requirements. Permits were received on September 24, 2003. Construction began September 30, 2003 and native planting installations (native shrub live stakes (and previously herbaceous plant plugs) were completed on December 9, 2004 according to approved Plans and Specifications.

Table 1: Project Schedule.
Hobson Creek Corridor Restoration Project, Phase 1.
IEPA FAA 3190213.

Action Item	Start Date	Completion Date *
FAA 3190213 Award	Feb. 18, 2003	Feb. 30, 2005
Design Engineering	March 1, 2003	May 26, 2003
Permitting	May 27, 2003	Sept. 24, 2003
Bidding	August 1, 2003	August 20, 2003
Construction Contract Award	N/A	August 25, 2003
Riparian Invasive Species Removal	Sept. 30, 2003	Oct. 15, 2003
Streambank Stabilization Construction	Oct. 10, 2003	June 30, 2004
Native Plantings	Oct. 15, 2003	Dec. 9, 2004
Project Final Report		**Jan. 7, 2005**

* Items in **Bold** are expected completion dates.

Project Description and Stabilization Techniques

The Hobson Creek Corridor Restoration Project, Phase 1 included lead engineering, surveying and drafting by Patrick Engineering, Inc. Stream stabilization design, native planting selection, construction observation, and maintenance assistance was provided by Ted Gray & Associates, Inc. Landscape Resources, Inc. provided construction services and will provide a minimum of 3-years of site maintenance. The best management practices described below were utilized to restore the riparian corridor and to stabilize the streambanks of the mainstem of Hobson Creek and the south tributary stream channel (which discharges to mainstem at stream station 16+25).

Restoration of Riparian Corridor

Hobson Creek Corridor Restoration included vegetation management with replacement of 1.61 acres of dense stands on non-native and invasive shrubs and trees (such as Buckthorn) with 45 native tree-shrub clusters, along with native herbaceous species. The replacement of undesirable vegetation with native species prevents loss of bank soils and promotes bank stability. This will reduce non-point source pollutant loadings to the downstream East Branch DuPage River. Replacement of invasive species with native tree and shrub clusters, grasses, and forbs will also promote filtration and assimilation of nutrients as well as contaminated runoff that can be discharged from surrounding upland areas. Aquatic habitat along the Hobson Creek riparian corridor will be enhanced and diversified.

Table 2: Streambank Stabilization Practices.

Stabilization Practice	Left Bank (LF)	Right Bank (LF)	Total (LF)
1-Row A-Jacks / Vegetated Geogrid	0	86	86
3-Row A-Jacks / Vegetated Geogrid	93	355	448
3-Row A-Jacks / Re-Shape Slope	40	0	40
Fiber Roll / Re-Shaped Slope	145	40	185
Rock Riffles (3 @ 25 LF per bank)	75	75	150
Toe-of-Slope Native Plantings Only	80	70	150
Widen Channel / Re-Shape Slope	120	130	250
Rock Placement At Storm Pipe Outfalls	50	20	70
Total (LF)	**603**	**776**	**1379**

Rock Riffle Structures and Stable Channel Construction

Severe channel downcutting has been controlled with installation of rock riffle grade control structures. Riffles not only control channel downcutting but also dissipate excess stream energy and reduce extremely high erosive forces against the streambanks. Three (3) rock riffles were installed in the Phase 1 project area. Materials utilized ranged from 0.5-inch subsurface gravel to 18-inch surface boulders. The rock riffle structures also diversify and improve in-stream habitat, diversify stream substrate materials, and enhance aesthetics. Channel widening was performed in selected areas to re-construct a stable stream channel configuration in areas which had become severely downcut. Approximately 250 cubic yards of excavation was performed to re-construct a stable baseflow channel along approximately 250 linear feet of the stream reach.

A-Jacks and Vegetated Geogrid

Streambank stabilization was the most important feature to prevent additional soil pollutant transport throughout Hobson Creek and the downstream East Branch DuPage River. In the more severely eroded areas, the streambanks were graded to a flatter slope (excess cut removed), seeded and planted using native vegetation (described below), stabilized with vegetated geogrid (Bio-D Block), with toe of slope protection using 1 row or 3 rows of A-jacks. The permanent A-Jacks structures have a high energy-dissipation capability. The vegetated geogrid provided biodegradable erosion control along tall slopes as steep as 2.5:1 (H:V). These techniques were suited for areas that could be stabilized with vegetation alone, such as areas with high flow velocities along erodible soils, and where high bank shear stresses and sharp meander bends occur. A-Jacks biotechnical measures were also utilized where the stream channel migrated out of the common area into private lands and where the erosion threatened building structures or private properties. Approximately 488 linear feet of 3-rows a-jacks were installed, as well as 86 linear feet of 1-row a-jacks. All of the a-jacks were installed with bio-d block vegetated geogrid above the a-jacks with the exception of 40 linear feet of 3-row a-jacks which were installed with a re-shaped slope.

Fiber Roll and Re-Shaped Slopes

Streambanks with moderate erosion were lightly graded back, on a cut-and-fill balance, seeded and planted with native plant vegetation, covered with an erosion control blanket, with toe (base) stabilization using coconut (coir) fiber roll. Areas exhibiting only minor erosion were stabilized by re-shaping bank slopes, seeding and planting with native vegetation, and installing erosion control blanket. Plant communities were improved by removing the non-native / invasive vegetation, as well as introducing rooted plant materials. Approximately 185 linear feet of fiber roll were installed with re-shaped slopes above the fiber roll.

Rock Placement At Storm Pipe Outfalls

Existing storm pipe outfalls were stabilized by re-placing rock that had previously been removed by the erosive force of the flowing stream. There were two storm pipe outfalls which were stabilized using rock. The left bank contained a storm pipe outlet near stream station 14+75. This pipe contained a 25-foot long outlet ditch leading to Hobson Creek. The pipe outfall and ditch were stabilized by installing a rock toe, re-shaped slopes, and shrub live stakes along 50 linear feet which includes both banks of the outfall ditch. The right bank at stream station 11+90 contained a storm pipe outfall which previously contained little to no rock protection. This outfall was stabilized using a rock wall over 20 linear feet in length that was built up to the height of the top of the outfall pipe. The total length of streambank protected by rock placement near storm pipe outfalls was 70 linear feet.

Native Plantings

Proper selection and installation of native plantings and seed is instrumental to project success. Native seed and plantings were installed along all stabilized streambank areas. Effective native plant installations improve long-term streambank stabilization, pollutant filtration, wildlife habitat, dissipation flow energy, and improvement of site aesthetic values. Toe-of-slope (Type 1) native seed and plug lists, and mid-slope to upper slope native seed (Type 2) plug lists are provided in Tables 3 and 4 below. Native shrub live stakes (cut live stems) were utilized in shaded areas with high erosive forces (Table 5). Approximately 150 linear feet of stream channel was stabilized using native plantings alone without other streambank stabilization treatments. Also, as described above under Restoration of Riparian Corridor, forty-five (45) native tree-shrub clusters were installed throughout the riparian area. The ball-and-burlap tree and shrub species used for the tree-shrub clusters are described in Table 6.

Table 3. Native Herbaceous Plant Plugs Species List.

Scientific Name	Common Name	Percent of Total
Type 1 Native Plant Plugs		
Acorus calamus	Sweet Flag	5%
Andropogon gerardii	Big Bluestem	10%
Andropogon scoparius	Little Bluestem	5%
Asclepias incarnata	Swamp Milkweed	5%
Carex stipata	Common Fox Sedge	5%
Elymus virginicus	Virginia Wild Rye	3%
Hystrix patula	Bottlebrush Grass	3%
Iris virginica	Blue Flag Iris	10%
Juncus tenuis	Path Rush	5%
Panicum virgatum	Switch Grass	14%
Scirpus acutus	Hardstem Bulrush	5%
Scirpus cyperinus	Wool Grass	5%
Sorghastrum nutans	Indian Grass	10%
Spartina pectinata	Prairie Cord Grass	10%
Verbena hastata	Blue Vervain	5%
		100%
Type 2 Native Plant Plugs		
Allium cernuum	Nodding Wild Onion	3%
Andropogon scoparius	Little Bluestem	3%
Aster novae-anglia	New England Aster	6%
Ceanothus americanus	New Jersey Tea	3%
Echinacea purpurea	Purple Coneflower	9%
Elymus canadensis	Wild Canada Rye	6%
Elymus virginica	Virginia Canada Rye	4%
Eurythronium americanum	Trout Lily	3%
Eupatorium maculatum	Joe-Pye Weed	5%
Helianthus grosseseratus	Sawtooth Sunflower	3%
Juncus tenuis	Path Rush	3%
Lobelia cardinalis	Cardinal Flower	3%
Lobelia siphilitica	Great Blue Lobelia	3%
Monarda fistulosa	Bergamont	5%
Panicum virgatum	Switch Grass	9%
Parthenium integrifolium	Quinine	3%
Pycnanthemum virginianum	Mountain Mint	3%c
Ratibida pinnata	Yellow coneflower	3%
Solidago speciosa	Showy Goldenrod	3%
Solidago patula	Swamp Goldenrod	3%
Sporobolous heterolepsis	Prairie Dropseed	6%
Tradescantia ohiensis	Spiderwort	3%
Trillium erectum	Trillium	3%
Zizea aurea	Golden Alexander	5%
		100%

Table 4. Native Plant Seed List.

Scientific Name	Common Name	Percent of Total
Type 1 Native Plant Seed		
Aster laevis	Smooth Aster	3%
Aster novae-anglia	New England Aster	3%
Andropogon gerardii	Big Bluestem	3%
Andropogon scoparius	Little Bluestem	5%
Avena sativa	Seed Oats	10%
Carex stipata	Common Fox Sedge	5%
Elymus canadensis	Wild Canada Rye	5%
Elymus virginica	Virginia Canada Rye	3%
Gentiana andrewsii	Bottle Gentian	3%
Gilardia pulchella	Indian Blanket	5%
Iris virginica	Blue Flag Iris	5%
Lolium multiflorum	Annual Rye	12%
Panicum virgatum	Switch Grass	6%
Phlox divartica	Blue Phlox	2%
Rudbeckia hirta	Black-Eyed Susan	10%
Scirpus acutus	Hardstem Bulrush	5%
Sorghastrum nutans	Indian Grass	3%
Spartina pectinata	Prairie Cord Grass	6%
Tradescantia ohiensis	Spiderwort	3%
Verbena hastata	Blue Vervain	3%
		100%
Type 2 Native Plant Seed		
Allium cernuum	Nodding Wild Onion	3%
Andropogon scoparius	Little Bluestem	6%
Aquilegia canadensis	Columbine	3%
Avena sativa	Seed Oats	10%
Cassia fasciculata	Partridge Pea	3%
Echinacea purpurea	Purple Coneflower	5%
Elymus canadensis	Wild Canada Rye	5%
Eupatorium perfoliatum	Boneset	5%
Lolium multiflorum	Annual Rye	10%
Panicum virgatum	Switch Grass	9%
Parthenium integrifolium	Quinine	5%
Ratibida pinnata	Yellow coneflower	5%
Rudbeckia hirta	Black-Eyed Susan	8%
Solidago speciosa	Showy Goldenrod	5%
Solidago patula	Swamp Goldenrod	5%
Sporobolous heterolepsis	Prairie Dropseed	5%
Veronica fasciculata	Ironweed	3%
		100%

Table 5. Native Shrub Live Stakes.

Scientific Name	Common Name	Percent of Total
Cornus stolonifera	Red-Osier Dogwood	40%
Cornus racemosa	Gray Dogwood	10%
Salix Interior	Sandbar Willow	20%
Viburnum dentatum	Arrowwood Viburnum	15%
Viburnum lentago	Nannyberry Viburnum	15%
		100%

Table 6. Native Tree-Shrub Clusters.

Scientific Name	Common Name	Percent of Total
Trees		
Juglans nigra	Black Walnut	25%
Platanus occidentalis	American Sycamore	25%
Tilia americana	Basswood	25%
Quercus bicolor	Swamp White Oak	25%
		100%
Shrubs		
Cephalanthus occidentalis	Button Bush	25%
Cornus stolonifera	Red-Osier Dogwood	15%
Salix Interior	Sandbar Willow	15%
Sambucus canadensis	Elderberry	15%
Viburnum dentatum	Arrowwood Viburnum	15%
Viburnum lentago	Nannyberry Viburnum	15%
		100%

Project Costs and Quantities

A summary of quantities and costs are listed below.

Table 7: Summary of Quantities.

BASE BID SCHEDULE OF QUANTITIES AND PRICES

Item No.	Stream Restoration Practice	Quantity	Units	Unit Cost	Extended Cost
1	**Selective Removal of Invasive Species**	**1.61**	ACRES	$7,000.00	$11,270.00
2	**Tree Removal, 6" to 12" Diameter**	**8**	EA	$121.00	$968.00
3	**Tree Removal, Over 12" Diameter**	**3**	EA	$240.00	$720.00
4	**Rock Riffle Structures**	**3**	EA	$2,888.00	$8,664.00
5	**Fiber Roll**	**185**	LF	$34.00	$6,290.00
6	**1-Row A-Jacks**	**81**	LF	$46.00	$3,726.00
7	**3-Row A-Jacks**	**488**	LF	$86.00	$41,968.00
8	**Vegetated Geogrid (Bio-D Block)**	**1064**	LF	$30.00	$31,92.00
9	**Re-Shaped Slope / Erosion Control Blanket**	**311**	LF	$26.00	$8,086.00
10	**Excavation of Stable Baseflow Channel**	**250**	CY	$38.00	$9,500.00
11	**Rip-rap Installation**	**9**	CY	$185.00	$1,665.00
12	**Native Tree / Shrub Clusters in Riparian Corridor**	**45**	EA	$217.00	$9,765.00
13	**Native Shrub Live Stakes (3 per 1 LF)**	**140**	LF	$23.00	$3,220.00
14	**Native Shrub Live Stakes (1 per 6 LF)**	**70**	LF	$2.00	$140.00
15	**Native Plant Plugs (2-in. potted plants) at 2 per 1 LF**	**70**	LF	$6.00	$420.00
16	**Post-Project Construction Fence**	**500**	LF	$2.00	$1,000.00
17	**Erosion Control & Maintenance**	**1**	LS	$4,263.00	$4,263.00
18	**Rooftop Downspout Management**	**1**	LS	$3,600.00	$3,600.00
19	**Project Signs**	**2**	EA	$1,572.00	$3,144.00
20	**Construction Access & Restoration**	**1**	LS	$1,592.00	$1,592.00
21	**3-Year Vegetative Perf. Standards and Guarantee**	**1**	LS	$12,198.00	$2,439.60
CO001	Outfall Structure Rip-rap & re-shaping	1	LS	$1,271.49	$1,271.49
CO002	Decale for Signs	2	LS	$50.00	$100.00
CO003	Wildflower Seeding	1	LS	$957.00	$957.00
			Total		**$156,689.09**

ITEMS AS ORDERED BY ENGINEER

IAOE #	Stream Restoration Practice	Quantity	Units	Unit Cost	Extended Cost
3a	**1-Row A-Jacks**	**5**	LF	$46.00	$230.00
3d	**Re-Shaped Slope / Erosion Control Blanket**	**14**	LF	$26.00	$364.00
				Total	**$594.00**

Total Contractor Costs to Date: $157,283.09

Table 8: Project Cost Summary.
Hobson Creek Corridor Restoration Project, Phase 1.
IEPA FAA 3190213.

Project Cost Summary	Total Cost to Date	Local Match Share	Grant Assistance Amount
Clerical	$0.00	$0.00	$0.00
Supervisor	$0.00	$0.00	$0.00
DIRECT LABOR	$0.00	$0.00	$0.00
Fringe Benefits	$0.00	$0.00	$0.00
Overhead Costs	$0.00	$0.00	$0.00
INDIRECT COSTS	$0.00	$0.00	$0.00
EQUIPMENT, MATERIALS, SUPPLIES	$0.00	$0.00	$0.00
Engineering	$48,629.47	$19,451.79	$29,177.68
Permit Fees & Legal Fees	$10,786.34	$4,314.54	$6,471.80
Streambank Stabilization	$157,283.09	$95,759.58	$61,523.51
SUBCONTRACTS	$216,698.90	$119,525.90	$97,173.00
Totals	$216,698.90	$119,525.90	$97,173.00

IEPA Grant Award:	$107,970.00
Balance of Award:	**$10,797.00**

Operation and Maintenance Plan

Maintenance of native plantings along the stabilized streambanks and within the riparian corridor is critical to project success. The Hobson Creek Community Council will take responsibility for the EPA Section 319 grant 10-year Operations & Maintenance agreement for streambank bioengineering protection measures and plant maintenance. The following are provisions for this Agreement.

Bioengineering Materials Inspections

Bioengineering materials inspections for the constructed streambank stabilization area will occur at least two times per year according to the attached schedule in Table 9. Repairs will be made as necessary, as determined by the Owner and their designated Representative.

1. A-Jacks: Inspections will occur for dislodgement or relocation of A-Jacks components if any, broken pieces, or other indications of potential stabilization concerns.
2. Fiber Roll: Inspections will occur for the staking, undercutting, cord fasteners, and integrity of the Fiber Roll.
3. Rock Riffles: Some rock displacement at the riffles is expected, but significant relocation of larger rock materials is not desirable. Major relocation of rock will be inspected and noted.
4. Re-Shaped Slopes and Vegetated Geogrid: The performance of the re-shaped slopes and vegetated geogrid to stabilize the site slopes will be inspected. Growth of vegetation and locations requiring additional planting will be inspected. Eventually, the vegetated geogrid will biodegrade presumably within a few years. The capability of plantings to stabilize the resulting angle of repose will be noted.

Native Plant Maintenance

Conditions will be monitored and maintenance will be performed as described in the attached schedule. Native plant maintenance will occur using spot herbicide applications, hand removal of nuisance weeds, and related activities performed at least three times per year per the attached schedule. Non-native species will be removed from the streambank stabilization area.

Maintenance Costs

We estimate that the annual site maintenance budget will be approximately $5,000 annually, primarily to control re-introduced invasive species such as Buckthorn (Rhamnus cathartica), and Tartarian Honeysuckle (Lonicera tatarica) from taking over the newly establishing native plants. Expenditures may be higher expenditures during the first three years for native plant maintenance and nuisance weed control as the native plantings become established. Costs for Operations and Maintenance shall be paid by the Owner, the Hobson Creek Community Council.

Table 9. Site Maintenance Schedule.

Post-Construction through 2012

Activity	late March	mid-May	mid-June	mid-July	mid-August
Mow and/or Cut Natives	X				
Spot Herbicide / Remove Weeds		X	X		X
Bioengineering Materials Inspection	X		X		

Responsibilities

The Hobson Creek Community Council Board and their designated Representative shall be responsible for project site maintenance. Participating parties will include the Owner's Representative, professional Contractor services support, or possibly volunteers of the Hobson Creek Community.

Project Benefits

Water Quality

Most of the Phase 1 streambank stabilization construction was completed by December 15, 2003. Final planting installations were completed by December 9, 2004. We observed rapid establishment of temporary cover crop following slope stabilization. Despite significant rainfall events in June 2004, the banks remained protected and erosion was greatly reduced. Selected replacement of invasive trees and shrubs with native species in the 1.61-acre riparian area will also substantially reduce the loss of bank soils and promote bank soils stability. Native riparian plantings will substantially not only reduce sheet erosion but also mass wasting within the region. This will significantly reduce non-point source pollutant loadings to the downstream East Branch DuPage River. Based on site observations, there is minimal sediment delivered to the stream from the restoration site.

The Illinois EPA Load Reduction Spreadsheet was used to calculate pollutant loading rates from the project site. Input data included a combined streambank (left and right bank) length of 1,379 linear feet (see Table 2). We included 794 linear feet of severe erosion with a bank height of 5 feet and an erosion rate of 0.55 ft/yr. We also included 585 linear feet of moderate streambank erosion with a bank height of 3 feet and an erosion rate of 0.40 ft/yr. Based on these assumptions, the project site had previously contributed approximately 115 tons of sediment, 115 pounds of phosphorus, and 231 pounds of nitrogen annually to Tributary # 6. These estimates do not include historic sediment loss due to severe channel downcutting which has also occurred at this site. Due to stream stabilization, these pollutant loading rates to Hobson Creek have been dramatically reduced at the project site.

Habitat and Riparian Function

- Selected replacement of invasive species with native tree and shrub clusters, grasses, and forbs will protect and diversify wildlife habitat corridor along Hobson Creek, as well as diversity the native plant understory which is an indicator of a healthy ecosystem. The proposed plant species will also increase the diversity of foraging opportunities for wildlife. Significant amounts of dead woody debris in the riparian corridor were not removed, as this provides habitat for invertebrates, amphibians, birds, and mammals.

- Selected removal of invasive species will allow more desirable and beneficial species to flourish. There were numerous impacts to ecological integrity caused by the previously existing invasive plant species in the riparian zone. Dense stands of invasive shrubs such as common buckthorn and Tartarian honeysuckle previously shaded and out-competed growth of seedlings of black walnut (Juglans nigra) and bur oak (Quercus macrocarpa) which occur in limited number in the riparian area. Indeed, few seedlings of these desirable tree species were previously observed in the existing riparian area. Riparian restoration will increase sunlight penetration and increase the density of desirable tree and shrub species.

- The proposed riparian planting restoration will enhance the function of interception of rainfall. Deep-rooted trees and plants have increased absorption properties over the existing riparian species.

- The proposed density of trees, shrubs, forbs and grasses will enhance pollutant filtration and assimilation of nutrients as well as contaminated runoff discharged from surrounding upland areas, or through the project site. Native groundcover such as grasses and forbs are particularly efficient at trapping sediment in the uptake of phosphorus and nitrogen nutrients which otherwise cause pollution within the waterway. The proposed planting plan will significantly increase the abundance of groundcover species. Deep-rooted trees will increase the uptake of nitrogen from shallow groundwater, improving water quality of the stream.

- The proposed planting plan will help restore in-stream vegetative cover by encouraging partial sunlight penetration into the water column to enhance growth of shoreline forbs and grasses, as well as potentially allowing in-stream aquatic macrophytes. This will enhance the function of in-stream habitat conditions.

Public Outreach / Education

Project Signage (per project plans) placed at strategic locations at Green Trails Drive and at Green Briar Drive are being utilized to notify motorists, pedestrians, and visitors regarding the project, funding sources, and proposed improvements and activities. The project site adjoins a walking trail and outdoor athletic facilities at Seven Bridges Park owned by the Woodridge Park District that receives thousands of visitors annually. This park is located immediately downstream of Green Trails Drive. In addition, Caddy Corner Park is located adjacent to the upstream end of the project site, along the Hobson Creek corridor. Many of these park visitors use trails and sidewalks along the Hobson Creek stream corridor which will further enhance community educational outreach from the project site.

The Hobson Creek Community Council (HCCC) Board and members have been active over the last several years in acquiring Phase 1 Section 319 Clean Water Act grant funding through the Illinois EPA and U.S. EPA, acquiring DuPage County Water Quality Improvement Program funding, completing final engineering design, obtaining regulatory permit approvals for the Phase1 and Phase 2 project areas, educating homeowners, acquiring landowner signoffs for the proposed work in the common area, setting aside matching funds to complete portions of this project, contracting with stream consultants, and other activities. Over 20 landowners along the project site have been contacted by HCCC regarding the project for easement agreements associated with the proposed work. Additional HCCC education includes Board meetings, quarterly newsletter updates, and announcements in meetings of the Conservation Foundation. According to Mr. Bob Longacre of HCCC, in part as a result of these efforts and a successful project, the residents of HCCC have been pleased with the project results to date.

Various newsletter, newspaper and periodical articles have been published regarding the Hobson Creek Corridor Restoration Project. The Conservation Foundation newsletter Watershed Currents published a project article in 2003, Vol. 2, Issue 2. Three newspaper articles have been published regarding the project. Meg Dedolph published "Homeowners Work to Restore Creek" in The Naperville Sun in mid-November, 2003. A letter to the editor of the Naperville Sun was published in response to the newspaper article was submitted by the Commissioner of the Forest Preserve District of DuPage County, entitled "Hobson Creek Restoration Lifts Quality of Life." One pre-construction newspaper article was published in the Daily Herald, Section 1. This newspaper article was entitled "Your Actions May Be Key to Water Quality, County Says." One professional publicist published three professional journal articles featuring the Hobson Creek Corridor Restoration Project. An article entitled "Hobson Creek Restoration Project" was published in the November / December 2004 Land & Water Magazine by Greg Northcutt including interviews with Ted Gray. An article entitled "Stable Streams" was published by Mr. Northcutt in December 2004 Civil Engineering News Magazine. November 2004. An article titled "Stabilizing an Urban Streambank" was published by Mr. Northcutt in the November, 2004 Landscape Architect and Specifier News.

ATTACHMENT 1: PROJECT PHOTOS

ATTACHMENT 2: PROJECT ARTICLES

A) LAND & WATER MAGAZINE SEPT./ OCT. 2004

B) WATERSHED CURRENTS (CONSERVATION FOUNDATION)