February 2021 Revised April 2021

Southern Illinois Mitigation Co-op
Mitigation Bank Plan

For Nashville Mitigation Bank Site, Nashville , Illinois MVS-2021-140
Owners/Operators - John Ham and Doug Ehorn

Prepared by

Southern Illinois Mitigation Co-op (SIMC)
Via Ehorn Environmental
27w 105 Fleming Drive
Winfield, Illinois 60190-1048
847.420.7300

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Introduction and Background

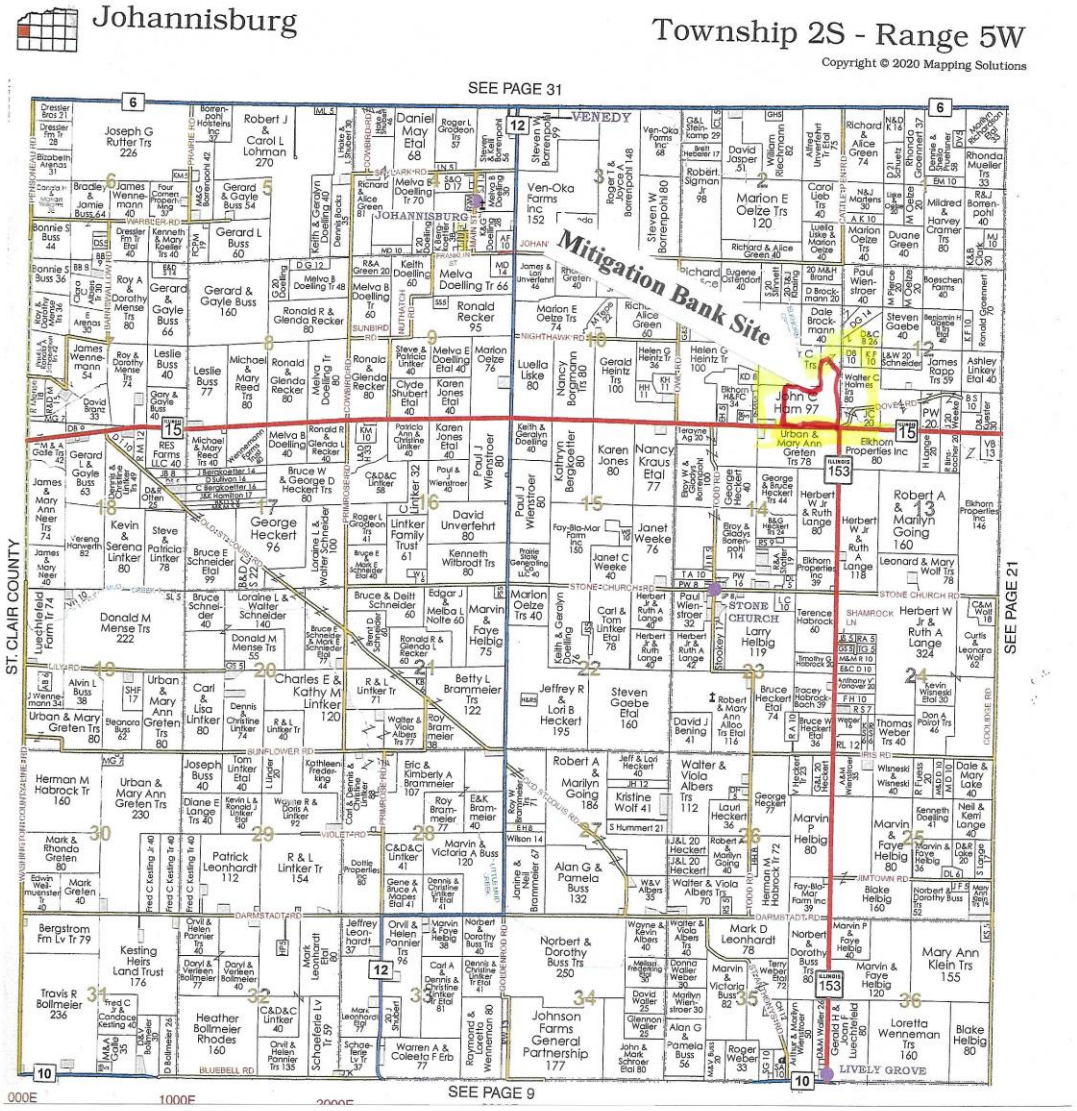
The Nashville Mitigation Bank is being offered to provide a compensatory mitigation option to Section 404 of the Clean Water Act applicants proposing aquatic resource impacts within the Lower Kaskaskia Watershed. The site has been given the standing of Prior Converted Wetland by the NRCS. While some credits established at the site may be used in other watersheds, this action would require a determination by the St. Louis District Corps of Engineers that there is a sound reason for providing mitigation outside of a watershed. The proposed Mitigation Bank is co-owned by John Ham of Carbondale and Doug Ehorn of Winfield. SIMC-Ehorn Environmental with assistance from Southern Illinois University staff will provide scientific information for the site and guide all efforts to develop the mitigation site and manage it.

Project Location

Wetland impacts may generally occur in the Lower Kaskaskia Watershed. The Nashville Mitigation site is located adjacent to Elkhorn Creek and will provide mitigation credits as described below for various projects as needed. The site is located on the west side of the intersection of Route 15 and Route 153 about 30 miles west of Nashville, Illinois , Nashville Township, Washington County, Illinois (38.3676, -89.6165). The site is further described as Washington County, SE ¼ Section 11, Township 2 South, Range 5 West of the Third Principal Meridian.

The purpose of this document is to present a mitigation bank plan to the St. Louis District, U.S. Army Corps of Engineers (USACE) to compensate for the loss of aquatic resources in the Lower Kaskaskia Watershed.

The site has been rated as 60+ acres of prior converted wetlands by NCRS.


Johannisburg
Township 2S - Range 5W
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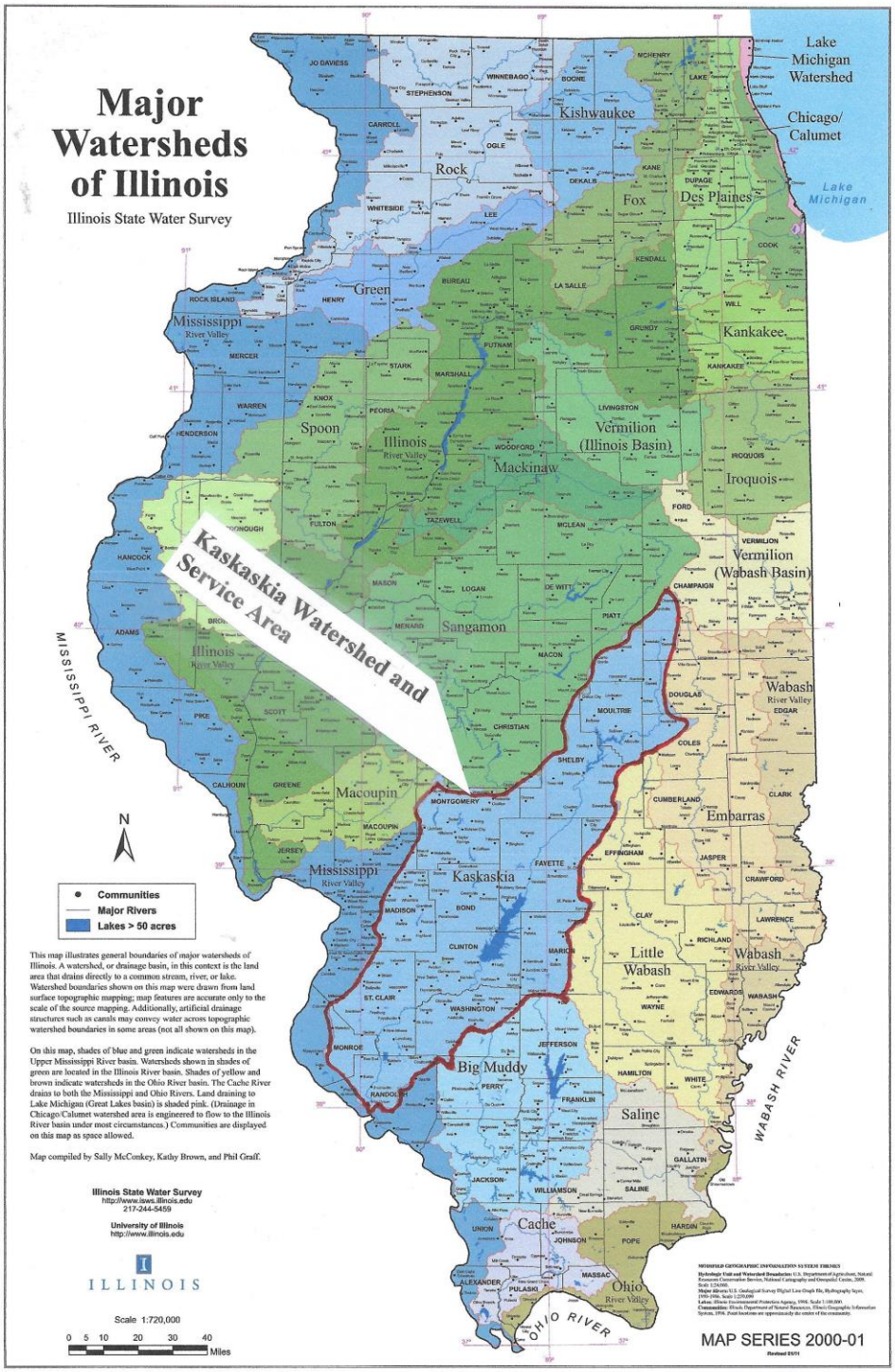
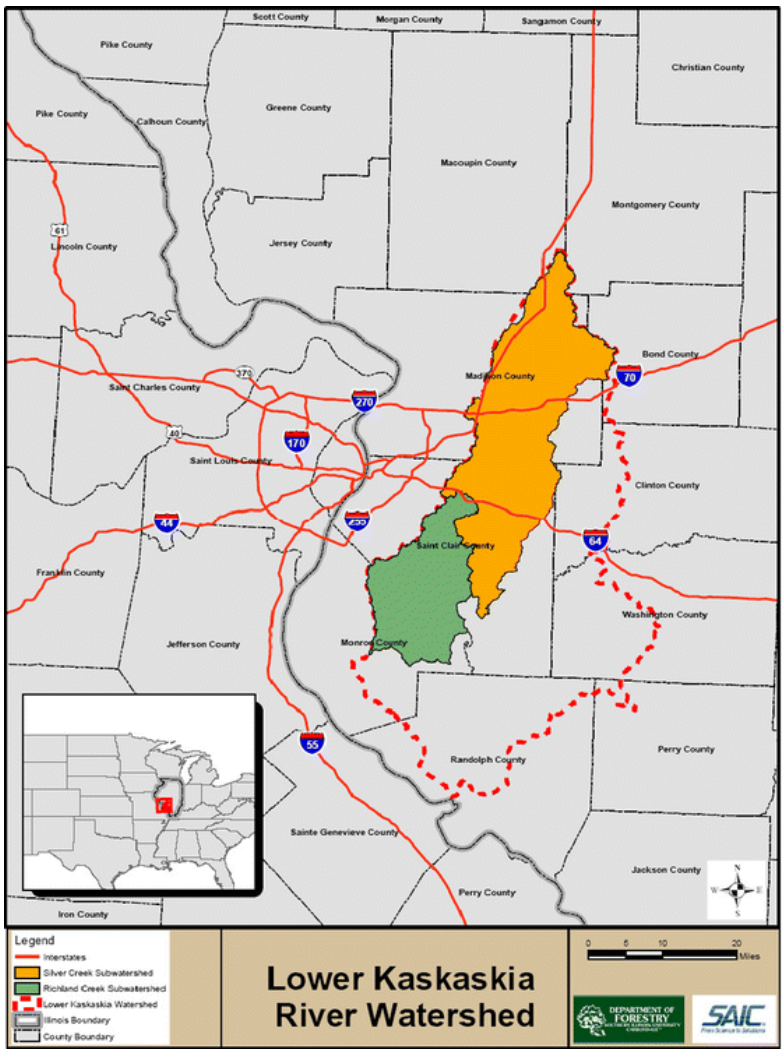
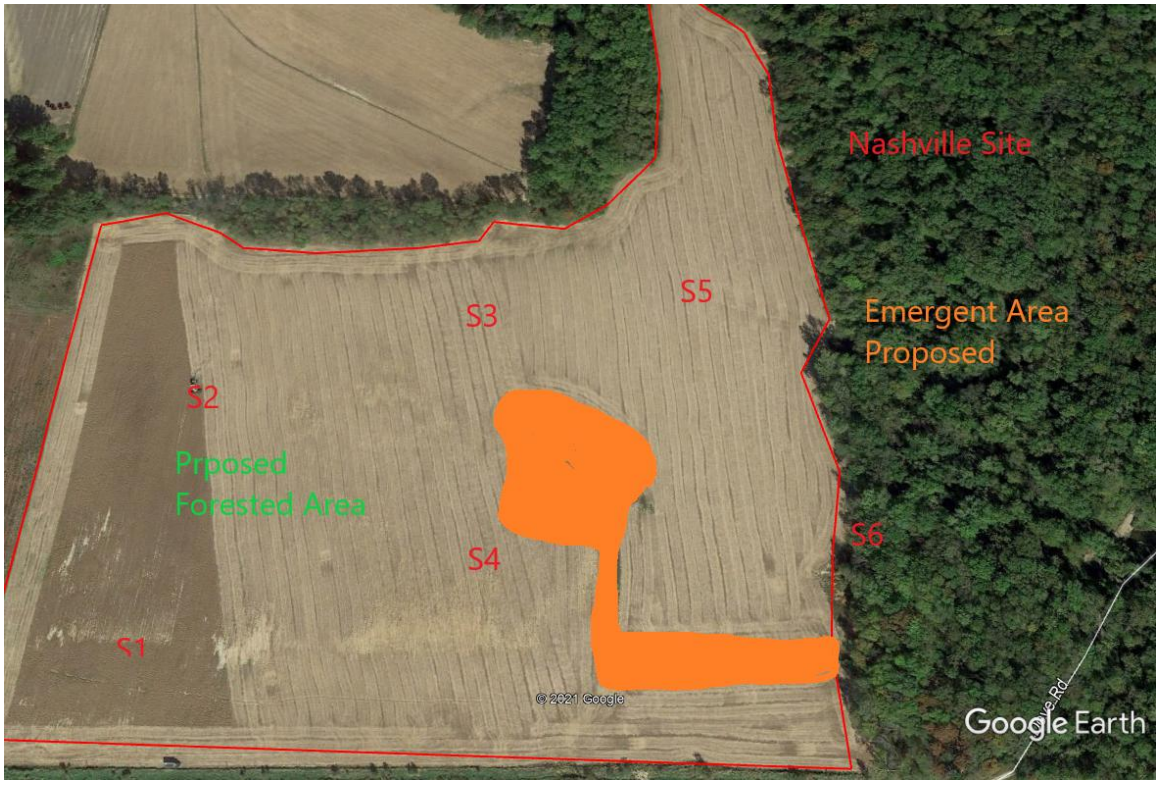
SEE PAGE 31
Mitigation Bank Site
ST. CLAIR COUNTY
SEE PAGE 21
SEE PAGE 9
JOHANNISBURG
VENEDY
STONE CHURCH
LIVELY GROVE



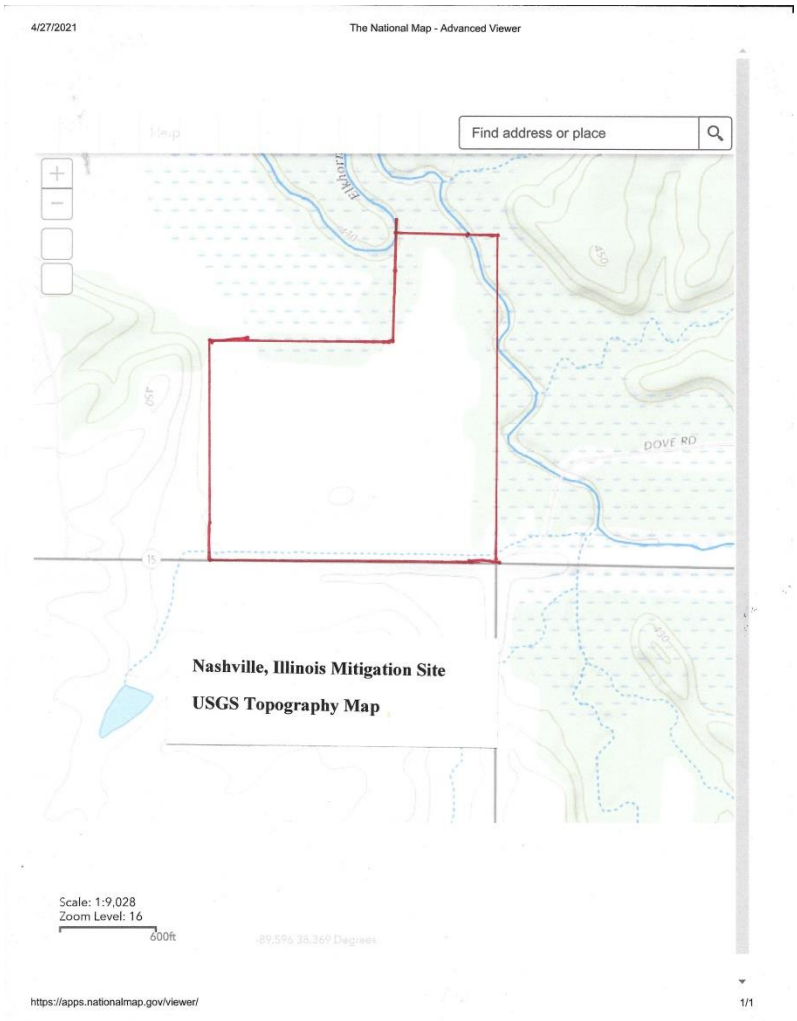
Kaskaskia Watershed HUC 07140204**.**



Mitigation site noted as red box in lower Kaskaskia Watershed along Elkhorn Creek



Project site 13 miles west of Nashville, Illinois along Elkhorn Creek



Nashville site topography - USGS

Kaskaskia History

There were major losses of wetlands in the Kaskaskia Watershed (including the Lower Watershed) as farming expanded in the 1880s and beyond. In the early years' loss of forest caused problems in destroyed creek banks, severe flooding and changes in creek channels. 70% of the watershed is agriculture with 60% being crop production. In the 1960s the area began to become popular for residential development due to its pastoral qualities and proximity to the city of Nashville. With both the farming and then residential development much of the forest cover was removed and major habitat loses occurred. Farming practices striped the land of ground cover leading to erosion across the land and silting of streams severally impacting aquatic habitat. In many cases when land was striped the soils became highly erodible, as is the case for the subject site (see documentation in exhibits). The Lower Kaskaskia River and Elkhorn Creek (HUC 071402040204) are both 303(d) waters.

In some cases streams in this area have been designated as 303(d) waters under the Clean Water Act, meaning that human degradation has severely polluted streams and affecting water quality and habitat in the area (Figure 5); much of this is related to the loss of riparian buffers along streams and erosion of highly erodible soils. Elkhorn Creek is noted as follows:

Impairments	Impacts
Mercury	Fish Consumption
PCBs	
Total Suspended Solids	
Dissolved Oxygen depletion	Aquatic life
Sedimentation	

Elkhorn Creek has a history of habitat losses and erosion problems due to land practices. Lengths of the creek have little sustainable riparian areas due to farming practices. In the upper watershed, the water runs clear after storm events. During drier periods the creek is stable with perennial flows.

Objectives

Given that much of the land near Elkhorn Creek in the vicinity of the proposed mitigation site is, or was once bottomland hardwood wetlands (PFOA1: palustrine, forested, broad-leaved deciduous, temporarily flooded) associated with the riparian corridor of Elkhorn Creek, the objective of this mitigation plan is to restored 54.13 acres of palustrine forested wetlands including an enhancement of the existing emergent area of 1.22 acres and creating an additional 1.25 acres of emergent wetland in the only piece of the parcel with upland soils (as suggested by Corps staff while on site).

The mitigation bank site is considered to be a prime candidate for wetland re-establishment, enhancement, and creation because of the site's immediate adjacency to Elkhorn Creek (a primary stream) and the fact it is now a Prior Converted Wetland. The hydro-period for the reestablished wetland will be linked with overbank flooding of Elkhorn Creek and to runoff from the northern and western agricultural land . The land to the north has a slight slope to the south and there is a noted flow channel on the subject site. On the west the parcel belonging to others has a 5-6% slope toward the subject site and is a source of ground water to the mitigation site. This land provides both surface runoff as seen in an erosion channel along the southern boundary of the site, but also produces a ground water component that seeps at the western edge of the subject site. No known flood maps from FEMA are available for Washington County or this site. However, the soils manuals state the area is frequently flooded and observations of the site bear this out. Secondary hydrology characteristics were noted in the sampling areas during the initial investigations and are noted on field forms. The proposed site will

provide many wetland and stream functions, which will support the overall health of Elkhorn Creek and the Lower Kaskaskia Watershed. A full list of forested wetland functions is listed in Table 3. Since there will be ***added aquatic improvements*** (expanded emergent areas behind log dams) on the subject site and protection and enhancement of existing aquatic features (emergent and drain), the site should be considered as a ***creation of emergents for 100% credit and reestablishment for 50% credit for the 54.13 acres*** of credits including wetland and emergent areas.

Major Goals of the Watershed

The long term needs of the Kaskaskia Watershed are identified generally by the Illinois Department of Natural Resources and its Critical Trends Assessment Program (CTAP). Elkhorn Creek, a 303(d) segment, in the overall watershed contributes a part of the overall goals that recommend increased Habitat Quality Assessment via the reduction of fragmentation and increased wooded riparian corridors. State watershed needs identified wetland quality has likely declined statewide over the course of several decades (Stafford et al. 2010). These declines are not consistent throughout the state and among natural divisions; they are exacerbated by many factors along large rivers (Mills et al. 1966, Bellrose et al. 1979, 1983), but may impact all wetland systems. Thus these reestablishment features support a more productive wetland community:

- Manage wetlands to promote native plant communities by removing, reducing or controlling invasive species, especially: Phragmites, purple loosestrife, reed canary-grass, Eurasian water milfoil, water hyacinth, narrow-leaf cattail, and others;
- Rehabilitate, create or enhance wetlands in areas lost to activities of human actions – reestablish full wetlands from **Prior Converted** status
- Timber stand improvement of bottomland forest through limited use of shade tolerant soft woods (i.e., cottonwood, green ash, silver maple, willow) (Note these species will be maintained as not to exceed more than 20% of the total species on the site)
- Increase mast producing hardwoods (i.e., oak, hickory, pecan) within floodplain sites that will support these tree species creating an improved matrix (see list of species to be planted in attachments)
- Manage for improved matrix and diversity of mixed stand density, age, and structure utilizing strategies that promote natural regeneration where appropriate noting major oak species vs minor species (Pecan, Red Maple, Green Ash, etc) (Knutson et al. 1996)
- Reduction of undesirable plant species (river bulrush, cattail, perennial smartweed, etc.) in managed wetlands, manage for desirable seed producing annual plants
- Use disturbance (e.g., water level manipulation, prescribed fire, mechanical manipulation, herbicide) to control encroaching undesirable woody vegetation in open wetland types, and undesirable herbaceous plants where appropriate

- Increase historically abundant habitats, and duplicate historic habitat complexity and juxtaposition within wetlands (Stafford et al. 2010)
- Reduce sediment inputs into streams, rivers and prior converted wetlands from row crop field through minimum tillage, vegetated waterways, buffers, and wetland reestablishment thus improving water quality on Elkhorn Creek which is a 303(d) stream.

Successful conservation and management of floodplain forests can contribute significantly to regional biodiversity because these systems possess an unusually high diversity of plant and animal species, vegetation types, and ecological processes. By providing necessary hibernacula, breeding sites, foraging areas, and travel corridors, floodplain forests often support a high diversity of birds, herptiles, and mammals. Wider and more contiguous riparian systems support high levels of native plant species diversity compared to narrow, fragmented riparian systems. Riparian corridors may harbor twice the number of species than that found in adjacent upland areas.

Conservation and management of floodplain forests require an ecosystem management perspective because of the complex longitudinal, lateral, and vertical dimensions of river systems. It is crucial to maintain the connectivity and longitudinal environmental gradients from headwater streams to the broad floodplains located downstream. The natural spatial and temporal patterns of stream flow rates, water levels, and run-off patterns must be maintained or reestablished, where feasible, because these hydrologic processes create the diverse structure that characterizes floodplain forests. Maintaining vegetated buffers in the uplands bordering floodplain forests will help improve stream water quality. Restoration of channel morphology may be important in areas where stream channelization, channel constriction, and dams have altered water delivery and geomorphology. Conservation and restoration of fragmented floodplain forests also requires active long-term management to maintain deer at low densities.

(Michigan Department of Natural Resources)

Given that much of the land in the Lower Kaskaskia Watershed including Elkhorn Creek is in the vicinity of the proposed mitigation site is, or was once bottomland hardwood wetlands (PFOA1: palustrine, forested, broad-leaved deciduous, temporarily flooded) associated with the riparian corridor of Elkhorn Creek, the objective of this *mitigation plan is rehabilitate, enhance or create 56.60 acres of wetlands as follows*:

1. ***rehabilitate* 54.13** acres of palustrine forested wetlands
2. **enhance or create emergent** areas (2**.47 acres**)
3. Protect an additional 15 + acres of forested wetlands riparian area to Elkhorn Creek – not for credit
4. Augmented habitat diversity and extent by the planting and management of the mitigation area.

5. Provide great matrix of plants using major oak species and minor tree and shrub species (see table below for planted species)
6. Provides additional habitat for birds, mammals, amphibians and reptiles in the area.
7. Create or extend riparian buffers to a minimum of a 100 foot wide along Elkhorn Creek

These objectives are reflected in the credit table below.

The functions of Forested Wetlands

Table 1: Functions of Forested Wetlands

Function	Relative Importance	Comments
Surface and groundwater storage and stream flow maintenance	Moderate to low	Trees will root deeply and transpire water during considerable water during the growing season. Fine textured and high organic soils are better. Water that seasonally overtops the banks of Elkhorn Creek will deposit fine sediments.
Nutrient cycling	High to moderate	De-nitrification is higher with more organic material in the substrate. Fine textured substrates are more effective than coarse substrates. A fluctuating water table is best. Lotic wetlands are important in preserving water quality.
Maintain Plant Community	Moderate to low	The understory is often dominated by nonnative vegetation and the shrub understory may be diminished or absent. Regeneration can be limited due to altered hydrology.
Retention of sediments, elements and compounds	High to moderate	Forested wetlands in floodplain locations are generally effective at this function.
Shoreline Stabilization	High	Trees with large woody root systems occur in settings with high erosion potential and are effective at stabilizing banks of streams.
Terrestrial habitat	High	Forested wetlands are important habitats flying animals that nest/roost in cavity trees (birds and bats). A variety of other mammals, amphibians, and occasionally a marsupial (opossum) utilize forested wetlands as either visitors or residents. Mature forested wetlands

		have a matrix of major species and minor species that provide habitat complexity.
Aquatic Habitat	Moderate	Forested wetlands can shade streams, contribute woody debris to streams, provide lifecycle support for aquatic and semi-aquatic insects at different life stages; keep water cooler and provide important buffer functions.
Conservation of wetland biodiversity	High	Non-wetland riparian forests are much more common (by areal extent) than forested wetlands. Forested wetlands and non-wetland riparian forests are both in decline nationwide due to alteration of hydrologic regimes (i.e. addition of impervious surface in upper watersheds), and from direct development pressure.
* adapted from: mtnhp.org		

Baseline Information

The site currently contains 56.6 acres of useable agland that once was forest and has been rated as 60+ acres of prior converted wetland by NCRS. The site includes a small impoundment area including drains from the impoundment south and then east to Elkhorn Creek. This emergent ***complex is approximately 1.22*** acres in size in mid-field of the proposed site. The drainage flows east through an excavated channel to the adjacent Elkhorn Creek, which is tributary to the Kaskaskia River, a navigable water of the United States. This impoundment appears to sustain surface water over the entire year and is fed by run off from the north. The impoundment has no artificial barriers that sustain the water, but is an actual depression in the field. While hydrology was addressed in the delineation report, a site report for spring 2021 has been prepared and is attached to this prospectus. The summary result is as follows:

Additional hydrology information

This site was inspected on February 26, March 26 and April 18 by Doug Ehorn in order to observe site hydrology for spring 2021. Photographs were taken on each inspection day. The results of the inspections are provided in the Appendix to this report. The final conclusion reached by the team is that this site meets the criteria for hydrology since there is water on or near the surface of the site for over 14 consecutive days (actual 23 days) during the growing season. Photographic evidence of plant growth of the site is noted as both hydrophytic and other plants on the site. See the report for further details.

U.S.D.A. Soil Conservation Service — SCS-CPA-026 (June 91)

Date of Request

HIGHLY ERODIBLE LAND AND WETLAND CONSERVATION DETERMINATION

County: Washington

4. Name of USDA Agency or Person Requesting Determination: ASCS

5. Farm No. and Tract No.: 1442 T3470

SECTION I - HIGHLY ERODIBLE LAND

	FIELD NO.(s)	TOTAL ACRES
6. Is soil survey now available for making a highly erodible land determination? Yes ☒ No ☐		
7. Are there highly erodible soil map units on this farm? Yes ☒ No ☐		
8. List highly erodible fields that, according to ASCS records, were used to produce an agricultural commodity in any crop year during 1981-1985.	3	11.0
9. List highly erodible fields that have been or will be converted for the production of agricultural commodities and, according to ASCS records, were not used for this purpose in any crop year during 1981-1985; and were not enrolled in a USDA set-aside or diversion program.		
10. This Highly Erodible Land determination was completed in the: Office ☒ Field ☐		

SECTION II - WETLAND

	FIELD NO.(s)	TOTAL ACRES
11. Are there hydric soils on this farm? Yes ☒ No ☐		
12. Wetlands (W), including abandoned wetlands, or Farmed Wetlands (FW) or Farmed Wetlands Pasture (FWP). Wetlands may be farmed under natural conditions. Farmed Wetlands and Farmed Wetlands Pasture may be farmed and maintained in the same manner as they were prior to December 23, 1985, as long as they are not abandoned.	UK none	UA
13. Prior Converted Cropland (PC). Wetlands that were converted prior to December 23, 1985. The use, management, drainage, and alteration of prior converted cropland (PC) are not subject to the wetland conservation provisions unless the area reverts to wetland as a result of abandonment.	1, 2	60.3
14. Artificial Wetlands (AW). Artificial wetlands includes irrigation-induced wetlands. These wetlands are not subject to the wetland conservation provisions.		
15. Minimal Effect Wetlands (MW). These wetlands are to be farmed according to the minimal-effect agreement signed at the time the minimal-effect determination was made.		
16. Mitigation Wetlands (MIW). Wetlands on which a person is actively mitigating a frequently cropped area or a wetland converted between December 23, 1985 and November 28, 1990.		
17. Restoration with Violation (RVW-year). A restored wetland that was in violation as a result of conversion after November 28, 1990, or the planting of an agricultural commodity or forage crop.		
18. Restoration without Violation (RSW). A restored wetland converted between December 23, 1985 and November 28, 1990, on which an agricultural commodity has not been planted.		
19. Replacement Wetlands (RPW). Wetlands which are converted for purposes other than to increase production, where the wetland values are being replaced at a second site.		
20. Good Faith Wetlands (GFW+year). Wetlands on which ASCS has determined a violation to be in good faith and the wetland has been restored.		
21. Converted Wetlands (CW). Wetlands converted after December 23, 1985 and prior to November 28, 1990. In any year that an agricultural commodity is planted on these Converted Wetlands, you will be ineligible for USDA benefits.		
22. Converted Wetland (CW+year). Wetlands converted after November 28, 1990. You will be ineligible for USDA program benefits until this wetland is restored.		
23. Converted Wetland Non-Agricultural use (CWNA). Wetlands that are converted for trees, fish production, shrubs, cranberries, vineyards or building and road construction.		
24. Converted Wetland Technical Error (CWTE). Wetlands that were converted as a result of incorrect determination by SCS.		

25. The planned alteration measures on wetlands in fields _____ are considered maintenance and are in compliance with FSA.

26. The planned alteration measures on wetlands in fields _____ are not considered to be maintenance and if installed will cause the area to become a Converted Wetland (CW). See item 22 for information on CW+year.

27. The wetland determination was completed in the office ☐ field ☐ and was delivered ☐ mailed ☐ to the person on _____.

28. Remarks.

29. *I certify that the above determination is correct and adequate for use in determining eligibility for USDA program benefits, and that wetland hydrology, hydric soils, and hydrophytic vegetation under normal circumstances exist on all areas outlined as Wetlands, Farmed Wetlands, and Farmed Wetlands Pasture.*	30. Signature of SCS District Conservationist	31. Date
	[signature] C.S.	1-2-92

Assistance and programs of the Soil Conservation Service available without regard to race, religion, color, sex, age, or handicap.

SCS Copy

Historically, the mitigation site was part of a large complex of bottomland hardwood wetlands (PFOA1: palustrine, forested, broad-leaved deciduous, temporarily flooded)

adjacent to the riparian corridor of Elkhorn Creek. As is the case with many wetlands in fertile river bottom locations, the site was cleared and row cropped for many years. The site currently is agricultural land use in 2019 for soybeans. With the disruption of the normal forest on the site, the analysis for vegetation is done using the Chapter 5 process.

All of the soils in the wetland reestablishment areas are mapped as 7337A Creal, 3334A Birds, 8109 Raccoon all of which are listed as silt loam, 0 to 2 percent slopes, frequently flooded, and, therefore, meet NRCS hydric soil criterion 4. The Creal soils, while note listed as a hydric soil, have hydric inclusions and in areas sampled the hydric properties were noted. Hydric properties may show up as weak indicators, but the indicators were noted. The 3336A Wilbur silt loam soils are not listed as hydric, however upon observation in the field there is sufficient signs that the soils are showing properties as hydric with hydrology, reduced iron in samples and soil colors. Delineation report was updated to show the soils in the field. Additional sampling was done to observe the sample sites in October 2020 with soil photographs provided to Corps. Map unit components that are frequently flooded for long duration or very long duration during the growing season. Hydric soils were verified by sampling various locations on the site and reported in the delineation. The St. Louis Corps staff inspected the site and concurred that hydric soils existed with the exception of one area on the west side of the mid-site impoundment. SIMC-Ehorn Environmental believes that the hydric determination for the mapped soils does reflect current site conditions, as the topography and drainage has been altered by farming practices to move water quickly off the site. *The upland soils to the west of the site are Winfield soils on 5-10% slopes and it is this area that is providing groundwater seepage.* The NRCS conducted a soil verification and stated the site had highly erodible soils across the site which are hydric soils over most of the site (Figure 6).

Watershed Considerations

There were major losses of wetlands in the Lower Kaskaskia Watershed as farming expanded along with urban development. In the 1960s the area began to become popular for residential development due to its pastoral qualities and proximity to the larger urbanizing areas. With both the farming and then residential development much of the forest cover was removed and major habitat loses occurred. Farming practices striped the land of ground cover leading to erosion across the land and silting of streams severally impacting aquatic habitat.

In some cases streams in this area have been designated as 303(d) waters under the Clean Water Act, meaning that human degradation has severely polluted streams and affecting water quality and habitat in the area.

Elkhorn Creek has a history of habitat losses and erosion problems due to land practices. Lengths of the creek have little sustainable riparian areas due to farming practices. In the upper watershed, the water runs clear after storm events. During drier periods the creek is stable with modest to little flow. It is a 303(d) stream as

noted below. See pages 36 to end of prospectus for further information on watershed considerations.

Site Selection

The mitigation site is a Prior Converted Wetland and is the 56.6 acre portion of the larger parcel of land that was historically a mix of soils of low land hydric soils being part of a large complex of previously cleared bottomland hardwood wetlands (PFOA1: palustrine, forested, broad-leaved deciduous, temporarily flooded) adjacent to the riparian corridor of Elkhorn Creek. As is the case with many wetlands in fertile river bottom locations, the site was cleared and row cropped for many years. The site was used to grow soybeans in 2019. A portion of site still lies in the area of that portion of land that floods along Elkhorn Creek, although drainage swales/patterns were installed by previous farmers to move floodwaters off the cropland. The ***drainage swales*** are noted as flowing from northwest to southeast in mid-site and ***erosion channel*** from west to east on the southern boundary then east to Elkhorn Creek and as well as ***flowage from parcels south of Route 15*** off-site to the south and onto the site and then east to the creek. Also drainage was redirected on the agricultural land to the south of the subject site under Route 15 and then onto the southern boundary of the site with a final flow to Elkhorn Creek.

Despite the efforts to drain the land so that crops could be grown every year, the site has never been able to produce every year due to early spring and summer floods.

The location of mitigation site has been carefully selected to ensure that natural hydrology and landscape position will support long-term sustainability and function as a self-sustaining system. All of the forested wetland reestablishment areas lie within the presumptive flood zone of Elkhorn Creek. Seasonally flooded forested wetlands have net primary productivity that is twice as high as similar stagnant forested systems[1] because of the nutrient exchange associated with seasonal floodwaters depositing silt and nutrients and the wetland and uplands contributing leaf litter. The fluctuating water levels and nutrient rich soils also make these wetlands highly diverse and excellent transitional habitat for aquatic and terrestrial wildlife, and serve as corridors for many animals.

Floodplain forested wetlands also provide ecological services that cannot easily be duplicated by replaced artificial facilities. During heavy rainfall, these wetlands divert, store, and the velocity of water to reduce flood damage downstream. These wetlands also protect surface water quality, aid in local water table recharge, act as buffers to their adjacent creeks, and can reduce the potential for erosion and sedimentation of

[1] Mitsch, W.J., Taylor, J.R. and Benson, K.B. (1991) Estimating primary productivity of forested wetland communities in different hydrologic landscapes. Landscape Ecology vol. 5 no. 2 pp 75-92

downstream areas. A complete list of expected wetland functions and ecological services is provided in Table 1.

The mitigation site is considered to be extremely compatible with existing adjacent land uses, which include farming to the north, limited residential, and larger riparian forests to the north and east.

Threatened or Endangered Species in Washington County

Common Name	Scientific name	Habitat	Comment	Other
Indiana Bat	Myotis sodalis	Woods	Area on site has no woods	Habitat may be in adjacent woods to east
Northern Long-eared Bat	Myotis septentrionalis	Woods	Area on site has no woods	Habitat may be in adjacent woods to east
Eastern Prairie Fringed Orchid	Platanthera leucophaea	Prairie	No prairie on site	Agland for 30 years

Section 7 Review: Given the requirements for habitat, none of the above listed species would likely be found on the agland portion of the site. There will be no adverse impact on any of the species listed. The woods to the east may have habitat. There is no planned action for the eastern wooded portion of this site. There is no impact on these species by the planned activity.

USFWS did not make comments on the federal and/or endangered species in their recent site comments on the prospectus. It is presumed that the Section 7 review done by sponsor is correct.- no impact on species.

State Threat or Endangered Species

Illinois Department of Natural Resources has terminated consultation on this site. There will be no impact on any state species.

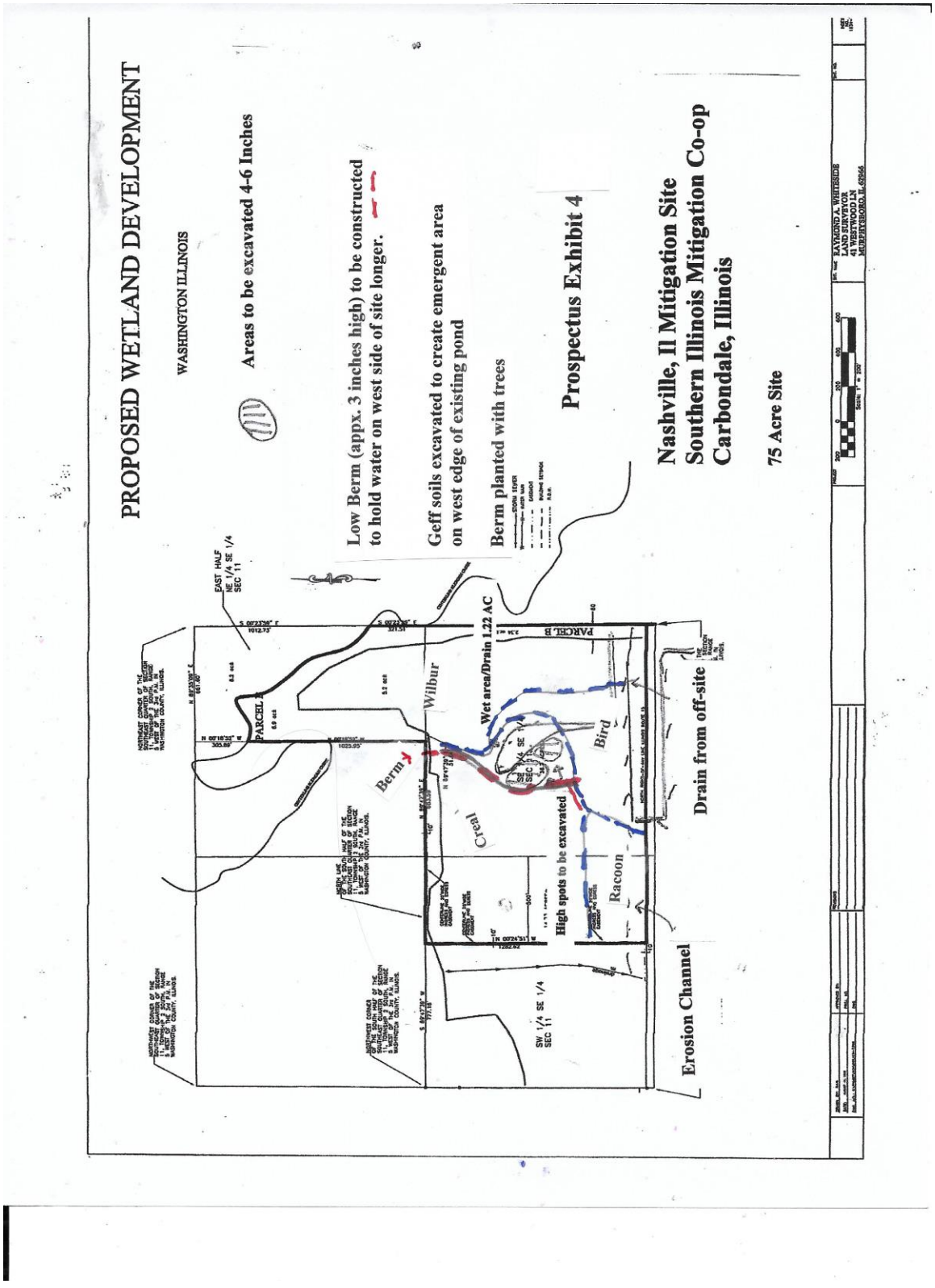
Definition of Restoration at the site

The Corps has commented on other projects that there are two definitions of restoration. One definition is that a site may be more of a rehabilitation of the former wetland and that the MBRT may consider the higher definition of Re-habilitation of wetland which means there is a gain in aquatic resource area. They have stated that this may include the pre and post-construction monitoring well

information for hydrology and soil testing that the strategy has embraced as earlier stated. In the situation for this site, the NRCS has rated the site as 60 + acres of prior converted wetlands. Thus the definition used for credits is that the reestablished forested area is set at 75% and the 1.22 acres of emergent wet area as an enhancement. The enlargement of the emergent area (1.25 acres) is creation of emergent area since the land is now upland area.

In fact there is a one existing shallow emergent area with drainage area on the site that was created at some time in the past and may relate more to the overall surface hydrology of the site. Also several small shallow areas are noted that hold water at times. The area has a definite hydrophytic vegetation community. The **1.22 acre *area is to be expanded*** by excavating the higher soil area (Geff soils) on the west side so that they will be added as open shallow water of 1.25 acres. **It had been suggested by Corps staff that this area be excavated to some extent with the idea that it could become hydric.** The intent here is to have the Geff soil area turned into an emergent area. Then log dams will be installed on the drainage to create slight pools to detain water for short periods of time on this drain corridor. Thus, there is a ***net gain in aquatic resources*** on the site.

The Geff soil material will be used to create a slight berm along the line noted between the Wilbur and Creal soils so that more water from runoff would be held on the west side of the parcel (see exhibit for details). The slight berm would be about three inches higher than adjacent areas and 400 feet long. It would be planted with trees.


PROPOSED WETLAND DEVELOPMENT
WASHINGTON ILLINOIS
Areas to be excavated 4-6 Inches
Low Berm (appx. 3 inches high) to be constructed to hold water on west side of site longer.
Geff soils excavated to create emergent area on west edge of existing pond
Berm planted with trees
Prospectus Exhibit 4
Nashville, Il Mitigation Site
Southern Illinois Mitigation Co-op
Carbondale, Illinois
75 Acre Site
Wet area/Drain 1.22 AC
Drain from off-site
Erosion Channel
High spots to be excavated
Berm
Wilbur
Creal
Bird
Racoon
PARCEL B
PARCEL
EAST HALF NE 1/4 SE 1/4 SEC 11
SW 1/4 SE 1/4 SEC 11
RAYMOND A. WHITESIDE
LAND SURVEYOR
41 WESTWOOD LN
MURPHYSBORO, IL 62966

The site has numerous areas showing shallow depressions with some emergent vegetation that provide habitat for frog and crayfish. The habitat is expanded with the construction of a larger shallow emergent areas. Thus the proposed banker is already committed to showing aquatic improvement and believes that the efforts underway will show improvement overall in habitat and aquatic resources. Sample plots for introduction of trees is already underway to assure that only the most successful vegetation is planted.

Determination of Credits

Table 2: Total Potential Mitigation at Nashville Road Mitigation Site

Area	Type	Acres	Credits
			50% Rehabilitation
Bottomland Hardwood Area*	Reestablish forested wetlands	54.13	40.60
Emergent area enhanced	enhancement	1.22	0.61
Expanded Emergent	creation	1.25	1.25 – 100% create
Total “Credits” Generated		56.6	42.50

The emergent area seems to be a natural occurring area that holds water most of the year. It has a ring of hydrophytic plants at the edge all year. While one land owner did some work to drain this area by cutting a drain from the south of the emergent area to Elkhorn Creek, the drain was not sufficient to entirely drain the emergent area.

The mitigation project will increase the size of the emergent area from 1.22 acres to 2.47 acres by excavating the upland soils that are on the west side of the emergents that the emergent area is doubled in size. Log dams that are only one layer (consisting of very old telephone posts that were treated to prevent rotting and no longer release any of the preservative used to protect them for the original purpose) will be used to block drainage so that water once entering the emergent area will stay longer to provide sufficient hydrology for an emergent wetland to emerge. The existing and new emergent areas are then planted with emergent plugs.

Corps staff had suggested that the Geff soils on the western edge of the emergent area be cut down to allow water to enter those areas so that hydric soils might develop. This proposal of increased the emergent area is directly related to that suggestion.

Service Area:

The primary service area is the Lower Kaskaskia Watershed HUC 07140204 which includes the following counties: Champaign, Douglas, Piatt, Maultrie, Shelby, Montgomery, Fayette, Bond, Madison, Clinton, Washington, Marion, St. Clair, Monroe and Randolph. The Corps may allow other areas to be serviced at a higher compensation ratio at their discretion.

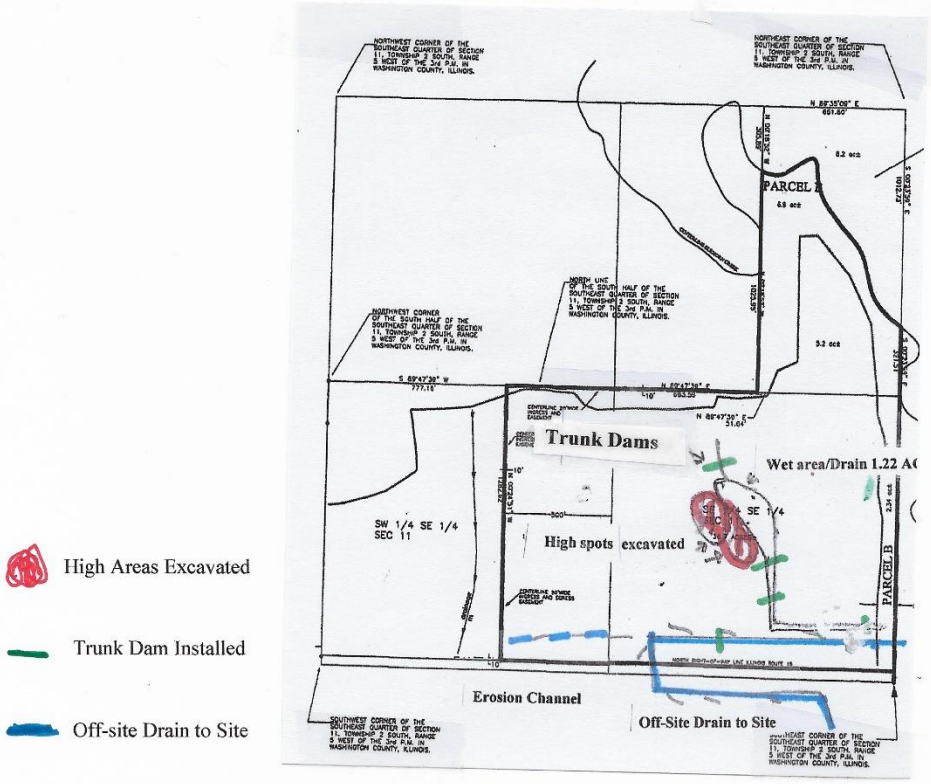
Mitigation Work Plan

The efforts are aimed at restoring the historic wetland type to the extent possible by reestablishment of hydrology and removal of undesirable species and the planting of species of trees and shrubs that are noted as Fac or better. The reestablished/created areas will be periodically herbicided to maintain the desirable plants. .

The first action is to excavate the upland soils next to the noted impoundment in mid-site to bring the area to elevations similar to surrounding hydric soils. This will require the movement of soils to lower the elevation of this high spot to be consistent with the soils surrounding the high spot. Soil will be removed from the site using a backhoe or bobcat excavating soil and carrying to some appropriate disposal site on the subject property. The elevation of excavations will be guided using relative elevation (setting up a known elevation and then excavating in the close by area to a desired depth) and deposited on the west side of the site in an approved manner. The emergent open water zones in the middle of the open area of the site will be enhanced with some herb plants (Facw to Obl) to expand diversity. The flow channel from the northwest will be modified by shallow excavation of a trench about four feet long and six inches deep to allow the placement of appropriate sized logs across the width of the channel to allow impoundment of water thus creating areas where water will be retain longer on site. The log dams, consisting of tree trunks cut to 4 - 7 foot lengths, will be settled into the ground using a slight force from the excavating equipment to seal the bottom areas. In some cases one or two logs may be required to obtain the desired result. After placement of the logs, the site flows should rapidly ‘seal’ the spaces in and around the logs to allow for the slight pools to be created.

Each of the five soil samples sites will have a monitoring well to provide groundwater data over the life of the project. The wells will be dug to a depth of 20 inches to measure ground water in the zone of 12 – 14 inches that is used determining hydrology. Also during inspections the secondary hydrology indicators will be reported.

Proposed Wetland Development



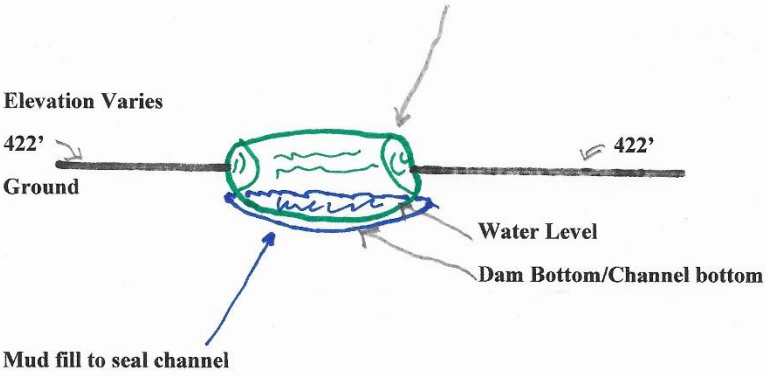
Nashville Mitigation Site
Southern Illinois Mitigation Co-op
Carbondale, Illinois

Appx 56 +/- acres

Tree Trunk Dam Installation

Typical and Varies across site

Top Elevation of Dam – 422' plus 2-4 inches above ground level

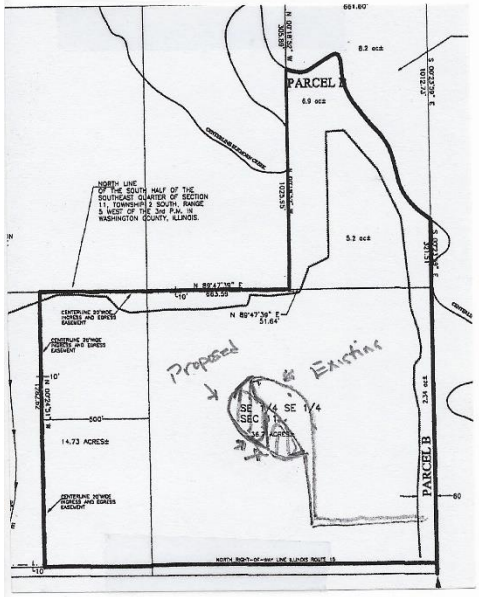


Dams Installed/Toed into side of channel to stabilize the dam

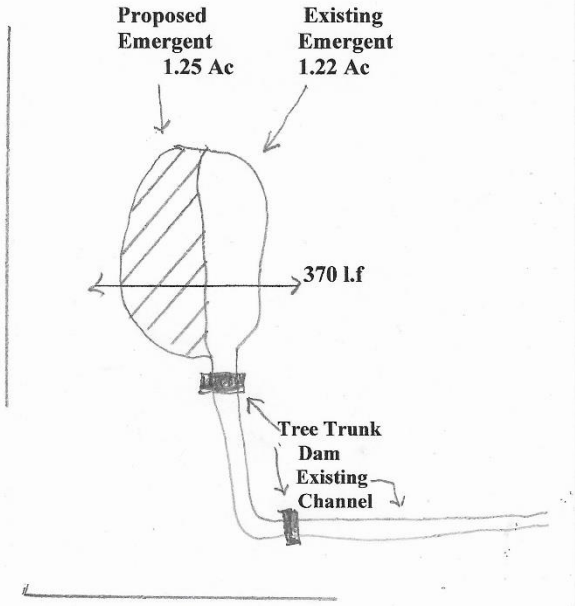
Nashville Mitigation Plan

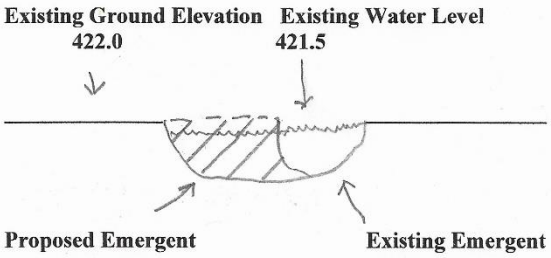
____ Not To Scale _____

Existing/Proposed Site Plan



Proposed Emergent Area





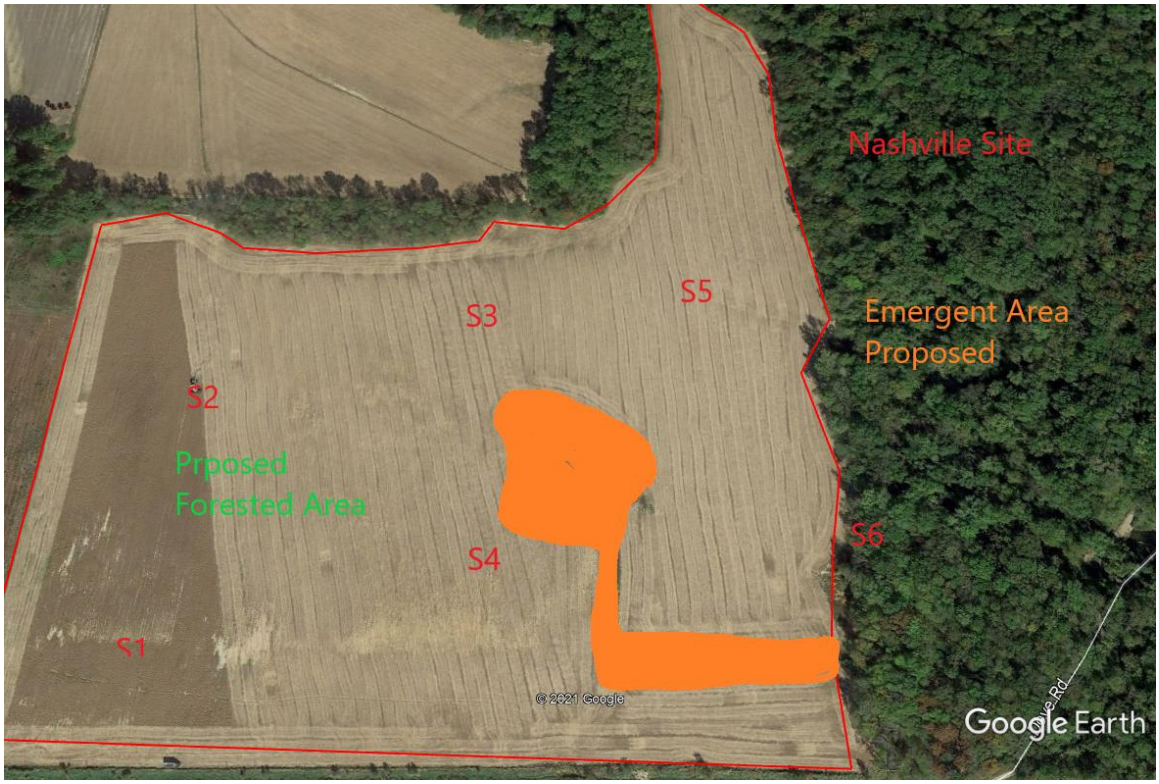
The site will be disked and a cover crop will be planted if needed in the area prior to planting trees and shrubs. The cover crop will be:

MATERIALS Seed: Seed Mixture Seed mixtures shall be proportioned by weight as follows:

Seed Pounds Per Acre (Minimum)
Red Top (Agrostis alba) 6
Virginia Wild Rye (Elymus virginicus) 6
Alsike Clover (Trifolium hybridum) 2

The seed quantities indicated per acre for seed shall be the minimum amounts of pure, live seed per acre for each species listed.

The figure below shows the two planting zones>



The new log dams will be installed along the excavated channel that are no higher in elevation than two inches above grade and will create natural emergent areas. This same construction will be used to place logs in three areas on the existing drainage channel that was excavated to drain the emergent area and south of the existing mid-site impoundment. The channel has a strong grassy cover at present. The area is being blocked in areas to slow down the release of water and not to create any emergent areas.

Large rain events will allow water to flow over or around the log dams into the natural emergent area and then southeast toward Elkhorn Creek, thus there should be no back up of water on the land owner to the north. The land owner on the south has upland soils that

are 4 -5 inches higher that the mitigation area and the upland has over 40 acres of area to hold water in a flood condition. Also note that there is no barrier now or to be constructed to impede storm flows to the north. Additional log dams will be placed below the emergent area to provide areas to store water longer on site to aid in percolation of water into the ground. These low log dams will be established that so that the structures are no more than two inches above the elevation of the surrounding areas. Thus the temporary emergent areas behind the dams will hold water on site longer allowing percolation to ground water and retention of hydrology on the site. This will be of great aid in allowing the upland area excavated to become hydric.

Old tree trunks will be used. Tree trunks would be places as single tree trunk across areas where water is to be retained longer. Tree trunks will be set and mud used to seal the lowest levels. The invert of the tree trunks will be no higher in top elevation than two to four inches above existing water level in emergent areas.

The existing emergent area and the created impoundments would be planted with emergent vegetation and the area surrounding the emergent area would be planted with wet meadow vegetation to develop full functioning wetlands after establishing that there issufficient hydrology on-site. The existing soils are Creal Silt loams and ground water is seasonally relatively close to the surface.

The reestablished wetlands would be planted to two different types of vegetation. The existing and created emergent areas would be planted with the Wet (emergent) mixture noted below. This list of plant species would be used to plant the open water components of the emergent areas and the emergent margin areas. Some of these seeds will be sown into the existing plant matrix in the bottomland hardwood reestablishment areas adjacent to the emergent areas to enhance the ground vegetation as the trees are growing. 500 plugs of the following will be purchased and hand planted in the emergent areas.

TABLE 2: Emergent Area Planting List – typical – Zone C

COMMON NAME	SCIENTIFIC NAME	INDICATOR STATUS
Arrow-head	Sagittaria latifolia	OBL
Blunt Spike Rush	Eleocharis obtuse	OBL
Bulrush	Scripus atrovirens	OBL
Common Fox Sedge	Carex volponoidea	FACW
Common Water Plantain	Carex stipata	OBL
Dense Flower Smartweed	Polygonum desiflorum	FACW
Lizard Tail	Saururus cernuus	OBL
Marshpepper Smartweed	Polygonum hydropipen	FACW
Missouri Ironweed	Vernonia missurica	FAC
Needle Spike Rush	Eleocharis acicularis	OBL
Pinkweed	Polygonum penslyvanicum	OBL
Rice Cut Grass	Leersia oryzoides	OBL
River Bulrush	Scripus fluviatilis	FAC+

Short-awn Foxtail	Alopecrus aqualis	OBL
Slender Rush	Juncus tenuis	FACW+

The proposed woody species to be used in the bottomland hardwood reestablishment area is provided in Table 3. The number of mast producing trees, native to the area, to be planted within the bottomland hardwood reestablishment area will be greater than 50% of the total number of trees planted. The trees and shrubs would be planted on 10 foot centers (436 trees/acre with a survival rate of 70%). No one species of tree or shrub would be more than 20% of the planted species. Plantings would be completed in March through May or October through December using bare root stock that has been cultivated in on-site tree nursery. Trees obtained for various sources and placed in on-site nursery being water and fertilized.

The existing vegetative cover in the bottomland hardwood reestablishment area will not be removed, as it provides soil stability. Since the Bottomland Hardwood Tree Species are well suited to low depressional areas, no planting beds or raised areas for tree planting would be completed. The success of these species in at the Elkhorn Creek Mitigation Bank supports the continued use of these species. The following may be planted based upon availability. When the site is planted with emergent and wooded features the site will have a ***Total FQI = 24.8***

TABLE 3: Bottomland Hardwood Planting List –

COMMON NAME	SCIENTIFIC NAME	INDICATOR STATUS
Slippery Elm	Ulmus rubra	FACW - Zone A
Cottonwood	Populus deltoides	FAC
Bur Oak	Quercus macrocarpa	FAC *
Bald Cypress	Taxodium distichum	OBL - Zone A
Pin Oak	Quescus palustris	FACW *
Swamp White Oak	Quercus bicolor	FACW *
Sweet Gum	Liquidambar styraciflua	FACW
Hackberry	Celtis occidentalis	FAC
Red Maple	Acer rubum	FAC
River Birch	Betula nigra	FACW
Water Hickory	Carya aquatica	OBL - Zone A
Sugarberry	Celtis laevigata	FACW
Swamp Privet	Forestiera acuminata	OBL - Zone A
Overcup Oak	Quercus lyrata	OBL - Zone A *
Nuttall's Oak	Quercus nuttallii	FACW *
Buttonbush	Cephlacanthus	Obl - Zone A
Red-Oiser Dogwood	Cornus stolonifera	FacW
Elderberry	Sambucus canadensis	FacU-
Ninebark	Physocapus opulifius	FACW
Alder (black or speckled)	Alnus sp	Obl - Zone A

Major oak species to be planted to improve matrix (*)

The site will have three zones: Zone A will be on the east and south side of the site where the area is wetter; Zone B is the mid-site and to the west; and Zone C is the aquatic areas. The Zone A will have a higher majority of the trees and shrubs indicated in the table above.

The planting will be conducted under the direction of a forest manager who will guide the planting so that the correct species are planted in area most conducive to their requirements. Trees and shrubs noted with higher water requirements (e.g., Overcup Oak, Alder, Buttonbush) will be planted closer to the river on the east side and south side of the site nearer to the highway and the drain that enters site from across the road.

Operation and Maintenance Plan

After the mitigation site have been constructed and planted, as described in the mitigation work plan section of this document, Southern Illinois Mitigation Coop will conduct the activities to operate and maintain the mitigation site:

- A **monitoring team** is being assembled to conduct the annual monitoring events and will include **Ehorn Environmental, a professor from Southern Illinois University, a student from SIU with knowledge of botany or soils**, and a local nursery owner who supplies plant materials for the site. The team will work together on various parts of the monitoring events with Ehorn Environmental writing the final annual report for submittal.
- **Jason Tabor, a landscaper and owner of Tabor Wholesale Nursery, will provide** on-site guidance and assistance in managing the growth and care of trees during the five year period. Mr. Tabor has over 20 years of experience in cultivating trees including gathering seeds, growing stock, advising clients, selling young trees in bare root, bundled and in a RPM-type potted manner.
- The **sponsor will initiate a student grant program** to encourage wither a botanist or soils scientist person to perform site work that may lead to a Master's Degree. Stipends for four semesters will be made available and negotiated with a chosen student.

  Sampling will occur four times in a growing season at each site at least five weeks apart. During each sampling period all three parameters will be examined, vegetation, soils, and hydrology and reported in the annual report. In the first year sample plots will be maintained to determine success of the vegetation planted and if needed the planting list of trees will be modified so that the best success of

the planted materials will be achieved. When the best fit is established, the Corps will be notified of the final plant list.

Vegetation sampling will be accomplished on a random walk through method established so that at each sampling period a five areas that are a quarter acre (100' by 100') will be reviewed. A grid is shown in the exhibits to indicate the method to be used. Grids will be chosen prior to sampling using a random number table. Soil and hydrology will be examined at each sample period at fixed stations where monitoring wells are installed. The wells are to be placed at the eight sample sites noted in the Nashville delineation report. The goal is to have 100 successful trees (or shrubs) in each quarter acre.

The reference sample location will be reviewed at each sample period and a report made on vegetation only to be sued as the measure of success in reestablishment.

The site will sampled four times during the year using a random walk over in the four quadrants of the site. Three 100 x 100 feet areas will be reviewed and data reported.

The following items will be addressed during the inspections and noted in reports:

- Mechanical removal of undesirable woody species: Spring and early summer.
- Herbicide treatments to control undesirable species: Spring and early summer; cut stump or foliar application; triclopyr or glyphosate.
- Monitor ground water (hydrology)
- Assess the success of establishment of trees on the site
- Assess the condition of the soils
- Control erosion on highly erosive soils by planting and management
- Invasive species identification and management

Performance Standards

The main objective of the proposed wetland reestablishment is to restore the natural hydrologic and vegetative regimes within the areas disturbed by past land uses at the mitigation site. Mitigation success or failure will be determined following the performance standards shown below from initiation to the last reporting in 7th year of annual monitoring. The wetlands reestablished will be considered successful when the following performance standards are met:

Ecological Performance Standards

The performance standards listed below will be used to measure or assess whether the mitigation project is developing into the desired resource type, and providing the expected functions. These performance standards will be applied

to determine the success of the planned wetland which provide the basis for credit availability at the bank site.

1) The wetland will meet jurisdictional wetland criteria as outlined in the Midwest Regional Supplement to the 1987 U.S. Army Corps of Engineers Wetland Delineation Manual (U.S. Army Corps of Engineers 2008, Environmental Laboratory 1987).

a) Predominance of hydrophytic vegetation. More than 50% of the dominant plant species must be hydrophytic at each sampling location.

b) Presence of hydric soils. Hydric soil characteristics should be present, or conditions favorable for hydric soil formation should persist. Favorable conditions include inundation or saturation to within 12 inches of the surface.

c) Presence of wetland hydrology. The planned wetlands must be inundated at average depths less than 2.5 feet or have soils that are saturated to the surface for at least 14 consecutive days of the growing season in at least 5 of 10 years on average.

2) All planned resource areas (wetland) should meet standards for vegetative cover and floristic composition, while the wetland will also be required to meet hydrology standards outlined in the Table below.

1. **Hydrology:** Wetland reestablishment areas are inundated or saturated within 12 inches of the ground surface for at least 10 days (5% of the growing season during years exhibiting normal weather conditions). (Growing season in Southern Illinois may be the entire year since soils may not fall below 40 degrees even in traditional winter months.) However, in southern Illinois the growing season is 190 days.[2] This performance measure shall also establish that hydric soils are present in the wetland reestablishment areas.

2. **Native Plant Species in the Wetland**:
    a. **Wet Open Areas including emergent and flowage**
        i. Monitoring years 1-2: Areal cover of native, wetland (facultative and wetter) herbaceous plant species will be at least 35% percent in the emergent (non-open water area) wetland.
        ii. Monitoring years 3-4: Areal cover of native, wetland (facultative and wetter) herbaceous plant species will be at least 40% percent in the emergent (non-open water area) wetland.
        iii. Monitoring year 5: Areal cover of native, wetland (facultative and wetter) herbaceous plant species will be at least 50% percent in the emergent (non-open water area) wetland.

[2] http://www.sws.uiuc.edu/atmos/statecli/Frost/growing_season.htm

iv. Monitoring in 7th year: Areal cover of native, wetland (facultative and wetter) herbaceous plant species will be at least 50% percent in the emergent (non-open water area) wetland.

b. Forested Wetland Areas

i. Monitoring Years 1-2
   1. The forested area shall be planted at 436 trees per acre (one tree every 10 feet. Planted woody species in the forested wetland at the mitigation site will achieve at least 80% percent survival for years one and two after the site is planted. Any dead woody plantings can be replanted to meet this performance measure.
   2. Areal cover of native, wetland (facultative and wetter) herbaceous plant species will be at least 20% percent in the forested wetland.

ii. Monitoring Years 3-4
   1. Native woody species (planted and volunteer) will achieve an average density of at least 350 of planted species per acre in the forested wetland at the mitigation site.
   2. Voluntary species will not surpass 30% of total tree count.
   3. Areal cover of native, wetland (facultative and wetter) herbaceous plant species will not be monitored since the final standard is based upon trees and shrubs and not herbaceous vegetation.

iii. Monitoring Year 5 and Year 7
   1. Native woody species (planted and volunteer) will maintain an average density of at least 400 plants per acre in the forested wetland at the mitigation site.
   2. Native woody species (planted and volunteer) have shown measured increases in height and typical diameters of the planted species over the 5/7 year monitoring period.

3. Invasive Species – This standard applies to both the forested and emergent areas.

a. Monitoring Years 1-2: Any coverage by non-native vegetation is noted and appropriately controlled with chemicals or hand and mechanical removal. Invasive species shall be removed by chemical or manual methods. Chemicals suited to wetland areas shall be used so that the ground water and surface water are protected.

b. Monitoring Years 3-5: Coverage by non-native vegetation does not exceed 10% at the mitigation site. Volunteer trees and shrubs shall not exceed 20% of any acre sampled. Chemicals suited to wetland areas shall be used so that the ground water and surface water are protected.

c. Monitoring Year 7: Coverage by non-native vegetation does not exceed 10% at the mitigation site. Volunteer trees and shrubs shall not exceed

20% of any acre sampled. Chemicals suited to wetland areas shall be used so that the ground water and surface water are protected.

Monitoring Requirements

After completion of the mitigation site construction activities, a site inspection will be conducted by SIMC-Ehorn Environmental with assistance from faculty and students from Southern Illinois University and a local (Carbondale) nursery man to document as built conditions. This site inspection will be completed within three months of planting of vegetation. After this inspection, a report will be sent to the USACE describing the site activities with photographic documentation of the completed work. This report will also document the initial success of the planted vegetation and describe any evidence of noxious or invasive vegetation at the mitigation site. Routine site visits will be conducted thereafter as needed to supplement the planted vegetation and to control noxious or invasive vegetation. Annual mitigation inspections will be conducted each summer for a period of seven years following construction. The monitoring reports will be prepared in accordance with USACE Regulatory Guidance Letter 08-03: Minimum Monitoring Requirements for Compensatory Mitigation Projects Involving the Reestablishment, Establishment, and/or Enhancement of Aquatic Resources.

Long-term Management Plan

After the wetland mitigation site has documented the achievement of the performance standards described in this report, the sponsor will be responsible for the long-term management of the site through their consultant, SIMC-Ehorn Environmental until the site is transferred to **Green Earth of Carbondale**, an Illinois not-for-profit, having an address of PO Box 441, Carbondale, Illinois 62903-0441 ("Grantee") for continued conservation. The mitigation site will be managed to maintain an ecological condition consistent with the final performance standards in this document.

The sponsor will be responsible for protecting and maintaining the site in perpetuity, unless other arrangements have been made, such as turning the site over to a local, state, or federal agency, academic institution, or conservation organization. The USACE shall be notified and approve the transfer of the long-term management responsibilities. The proposed mitigation site has been designed to be self-maintaining, however some long-term measures may be required to periodically manage the site. These long-term maintenance activities are described in the adaptive management plan section of this document. Funding of any long-term maintenance activities will be accomplished via the establishment of a long-term maintenance fund or letter of credit in the amount of $25,000 by the sponsor or their agent after monitoring year 5. This amount was based on Ehorn Environmental's site maintenance experience at the Indian Creek Wetland Mitigation Bank. The long-term maintenance funding mechanism will not be established, or will be terminated should the site be turned over to another entity.

Also, an additional $2,500.00 will be placed in the long-term fund for any physical replacement of log dams on the site. This cost would cover obtaining materials and work to place the logs and stabilize the areas of replacement.

Adaptive Management Plan

Monitoring and responsive management are a critical component of this mitigation plan. This adaptive management plant shall guide the decision for revising the mitigation work plan and implementing measures to address unforeseen circumstances that adversely affect the success of the mitigation site.

If the monitoring results show that the site is not on trajectory to meet performance standards and/or permit requirements, the sponsor or their agent, in consultation with USACE, will decide if new management activities should be employed. Implementing these management actions

Any delay or failure in the mitigation performance by the sponsor shall be excused if and to the extent caused by the occurrence of a force majeure. For purposes of this mitigation plan, force majeure shall mean a cause or event that is not: (1) reasonably foreseeable or, (2) otherwise caused by or under the control of the Party claiming Force Majeure, including acts of God and other like events that are beyond the reasonable anticipation and control of the sponsor, and are not attributable to a sponsor's failure to perform its obligations under this plan.

Credit Release Schedule

Consistent with the national guidance established in 2019 the sale of credits at this site would be as follows:

A. Proposed Credit Release for Nashville Site – 75% credits for 41.53 acres reestablished and 100% credit for 1.25 acres created = 42.79 acres

B. Action	Total Credits at 75%	Percent Release	Released Credits
Approval of document Conservation easement Secure Financial arrangements	41.53 acres reestablished and 1.22 acres created	20%	8.56 credits
Construction complete Finish All Planting	41.53 acres reestablished and 1.22 acres created	20%	8.56 credits

3rd year Stds met	41.53 acres reestablished and 1.22 acres created	25%	10.70 credits
5th year Stds met	41.53 acres reestablished and 1.22 acres created	20%	8.56 credits
7th Year - Meet Final Performance Standards	41.53 acres reestablished and 1.22 acres created	15%	6.42 credits

Logic: Assumes 56.6 acres in mitigation with value of 42.79 credits
Ag field 55.38 acres of rehabilitation of wetlands with 1.22 ac emergent and drain – 56.6 ac (note: with 1.22 ac of existing emergent and a planned 1.25 of enlargement, the total fields are then the 55.38 ac – see below for the 1.25 aces)
NRCS rated the site as highly erodible and is PC Wetlands
Rehabilitation – have aquatic improvements = 75% on Ag field
Includes wet area enhancements 50% credit for 1.22 acres
Creation of an additional 1.25 acres of emergent area for 100% credit
Enhancement of drains from emergent area to improve water quality of control
Fixing erosion areas with riprap at the edge of field where erosion is now occurring and to provide control of water release on site using log dams and with some additional emergent ing in fields to prolong water on site for a few extra days at a few inches of water depth.

Accounting Procedures for the Mitigation Bank Site

A. Use of Credits

1. At the discretion of the Corps, all activities authorized by Department of the Army permits are eligible, to use the mitigation bank to fulfill compensatory mitigation requirements for DA permits, including compensatory mitigation associated with unauthorized activities or non-compliance actions.
2. The Corps will determine the number and type(s) of credits required to compensate for the authorized impacts.

Ledger Accounting Reports

The instrument must contain a provision requiring the sponsor to establish and maintain a ledger to account for all credit transactions. The sponsor must notify the Corps each time a credit transaction occurs and the sponsor must provide an updated ledger.

1. The sponsor will compile an annual ledger report showing the beginning and ending balance of available credits and permitted impacts for each resource type, including types of credits debited, all additions and subtractions of credits, and any other changes in credit availability (e.g., additional credits released, credit sales suspended).

2. The ledger report will be submitted to the Corps and MBRT on an annual basis. The ledger report will serve as part of the administrative record for the mitigation bank.

Reporting for the Mitigation Bank Site

A. Monitoring Reports

Monitoring reports will be submitted (a minimum of one annually) to the Mitigation Bank Review Team (MBRT) for a period not less than five years after final construction and planting.

The monitoring report will be provided in the format cited in Regulatory Guidance Letter 08-03 and be of sufficient content for the district engineer, in consultation with the MBRT, to determine that the bank site is progressing towards meeting the performance standards as outlined in the instrument.

The monitoring report will include as-built drawings, maps, and ground photography illustrating the site conditions and interpretation of the current site conditions. If available, approved wetland and/or stream assessment methods that provide qualitative measures of the functions of the resource can be submitted.

Example Report for Nashville Mitigation Site

Name of Examiner:
Date of Report: GPS Location of Sample Area
Performance Standard for date of sampling: (Pick the PS related to the year of sampling from Prospectus) Eg: Year 2 (give brief statement of PS)
Size of Sample Area: choose - 100 sf 200sf
Type of Vegetation Sampled: Choose – Forest or Emergent
Soil Sample Taken - Yes or No
Observation of hydrology on date of sample

Narrative: Provide details of inspection such as: Forest required 436 trees per acre – to count in this location was 452 trees with five species of volunteers. Of the twelve tree species planted on site seven are noted in this sample area.

Trees show grow of 14 inches from time of planting. Volunteer trees range in height from 10 inches to 14 inches. Typical diameters of planted tree species shall be noted in the year 5 and 7 report.

Ground cover between rows of trees is at least 80%. No erosion noted.

Summary: The 2 Year Performance Standard for this sample area is met.

Financial Assurances

The sponsor or agent will provide a letter of credit (financial assurance) in the amount noted below to be used as contingency funds by the sponsor or a third party in the event the sponsor fails to comply with the terms of the mitigation plan to rectify any unforeseen events as determined by the USACE. The financial assurance shall cover the construction and operation of the bank including planting, monitoring and reporting, and remedial work, if required, for up to five years. A copy of the financial assurance will be provide to the Corps prior to any impacts being conducted at the impact site.

Table 5: Financial Assurance Calculation

The proposed financial assurance costs for the mitigation site are as follows:	
Excavation and establishment of the mitigation area (excavation to be completed by John Ham who owns necessary equipment)	$20,500
Planting forested wetland areas (22,000 trees or shrubs @ $1/tree)	$22,000
Planting other wetland areas (2 acres @ $900/acre)	$1,800
Contingency for planting (15%)	$7,000
Monitoring Costs for 5 years using SIU assistance	$30,000
The potential bond level is calculated to be	$81,300

If any of the above actions are completed at the time the financial assurance is established, those actions will be removed from the instrument and documentation will be

provided that the tasks are completed. When area is planted the cost of trees and shrubs will be removed from the financial assurances. Monitoring will be conducted by SIMC-Ehorn Environmental and SIU as noted above.

Compliance with standards is required as noted above and must be approved before release of parts of the financial assurance. Fifty percent of the tree and other wetland plantings fees shall be released from the financial assurance upon proof of planting of the areas. Twenty-five percent of the planting costs shall be released from the instrument after two years if the plant communities are meeting performance standards. The full planting costs shall be released after four years if the areas are meeting the performance standards. The financial assurance shall be released after five years, or upon inspection by the USACE noting the site is meeting performance standards and no major erosion or water quality issues have occurred on the site. However, if additional maintenance is anticipated, a second financial assurance, in an amount commensurate with the required management activities, will be provided by the sponsor or agent.

In order to comply with the Miscellaneous Receipts Statute (31 U.S.C. 3302(b)), the instrument shall designate Southern Illinois Faculty and staff as beneficiary. In the event of the sponsor's failure during the monitoring period to meet the performance standards, as outlined in this mitigation plan at the mitigation site, the instrument will allow SIU personnel to undertake and complete or secure through payment, whether directly or through a third party, the compensatory mitigation for which the sponsor is legally responsible under this mitigation plan, provided the USACE orders in writing during the monitoring period that the financial assurance be exercised to meet the performance standards of this mitigation plan. Prior to ordering that the financial assurance be exercised, the USACE may appropriately extending the monitoring period in accordance with the procedures at 33 CFR 332.6(b), and/or apply the permit non-compliance procedures outlined at 33 CFR 326.4(d)

CONSERVATION EASEMENT

Site Protection Instrument

The site will be protected using a ***Conservation Easement and Deed Restrictions*** meeting the requirements of the USACE (see covenant below –to be determined entity to take final control). A copy of the Easement will be sent to the USACE for review prior to recording with Washington County and will be put into effect as one of the first steps in obtaining wetland credits.

Draft Deed Restriction:

THIS DEED OF CONSERVATION EASEMENT is given this ___th day of _____, by Southern Illinois Mitigation Coop located in Carbondale, Illinois to **Green Earth of Carbondale**, an Illinois not-for-profit, having an address of PO Box 441, Carbondale, Illinois 62903-0441 ("Grantee"), an Illinois not-for-profit. As used herein, the term "Grantor", John Ham, PO Box 2828, Carbondale, Illinois 62902, shall include any and all heirs, successors, or assigns of the Grantor, and all subsequent owners of the Property (as hereinafter defined), and the term "Grantee" shall include any successor or assignee of Grantee.

WITNESSETH:

WHEREAS, Grantor is the sole owner in fee simple title of certain lands situated in Jackson County, ILLINOIS, more particularly described in Exhibit(s), LEGAL DESCRIPTION OF PROPERTY AND EXHIBIT identified as NEW PARCEL "A through D" attached hereto and incorporated herein ("Property"), and

WHEREAS, Department of the Army Permit No. MVS-2021-140 of the U.S. Army Corps of Engineers ("Corps") (hereinafter referred to as the "Permit") authorizes certain activities which affect waters of the United States; and

WHEREAS, the permit requires that Grantor preserve, enhance, restore, or mitigate wetlands or uplands located on the Property and under the jurisdiction of the Corps; and

WHEREAS, Grantor, in consideration of the issuance of the permit to construct and operate the permitted activity, and as an inducement to Grantee and the Corps to issue the Permits, is willing to grant a perpetual Conservation Easement over the Property; and

WHEREAS, Grantee represents that it is a publicly supported, tax-exempt, not-for-profit corporation and a qualified organization under sections 501(c)(3) and 170(h), respectively, of the IRC (26 U.S.C. 501(c)(3), 170(h)) and the regulations promulgated thereunder, and is a qualified conservation organization, as defined by the IRC, whose primary purpose is preservation, protection, or enhancement of land in its natural agricultural, forested, and/or open space condition, and, as certified by resolution of its board of directors, accepts the responsibility of enforcing the terms of this deed and upholding its conservation purposes forever.

NOW THEREFORE, in consideration of the above and mutual covenants, terms conditions, and restrictions contained herein, together with other good and valuable consideration, the adequacy and receipt of which is hereby acknowledged, Grantor hereby voluntarily grants and conveys a perpetual Conservation Easement for and in favor of Grantee upon the property, which shall run with the land and be binding upon the Grantor, and shall remain in full force and effect forever. The scope, nature, and character of this Conservation Easement shall be as follows:

1. **Purpose**: The purpose of this Conservation Easement is to retain and maintain land or water areas on the Property in their natural, vegetative, hydrologic, scenic, open, agricultural, or wooded condition and to retain such areas as suitable habitat for fish, plants, or wildlife. Those wetland or upland areas that are to be reestablished, enhanced, or created pursuant to the Permit shall be retained and maintained in the reestablished, enhanced, or created condition required by the Permit.

2. **Rights of Grantee**: The following rights are conveyed to Grantee and the Corps by this easement:
a. The right to take action to preserve and protect the environmental value of the Property; and
b. The right to prevent any activity on or use of the Property that is inconsistent with the purpose of this Conservation Easement, and to require the reestablishment of areas or features of the Property that may be damaged by any inconsistent activity or use;
c. The right to enter upon and inspect the Property in a reasonable manner and at reasonable times to determine if Grantor is complying with the covenants and prohibitions contained in this Conservation Easement; and d. The right to proceed at law or in equity to enforce the provisions of this Conservation Easement, and to prevent the occurrence of any of the prohibited activities hereinafter set forth.

3. **Prohibited Uses**: Except for reestablishment, creation, enhancement, maintenance, and monitoring activities, or surface water management improvements, which are permitted or required by the Permit, the following activities are prohibited on the Property:
a. Construction or placing of buildings, roads, signs, billboards or other advertising, utilities, or other structures on or above the ground, or the construction or placing of structures below the ground that may impact the surface of the Property; 88
b. Dumping or placing of soil or other substance or material as landfill, or dumping or placing of trash, waste, or unsightly or offensive materials;
c. Removal or destruction of trees, shrubs, or other vegetation, except as may be permitted by the Permit, and except for the removal of nuisance, exotic, or non-native vegetation in accordance with a maintenance plan approved by Grantee;
d. Planting of undesirable plant species identified on the attached list;
e. Exploration for, or extraction of, oil or gas in such a manner as to affect the surface, or excavation, dredging, or removal of coal, loam, peat, gravel, soil, rock, or other material substance, except as may be permitted or required by the Permit;
f. Use of motorized and non-motorized vehicles, the keeping or riding of horses, grazing, livestock confinement, or other surface use that may affect the natural condition of the Property, except for vehicle use for purposes of maintenance and upkeep, or as otherwise may be permitted or required by the Permit;
g. Tilling, plowing, planting of crops, digging, mining, or other activities that are or may be detrimental to drainage, flood control, water conservation, water quality, erosion control, soil conservation, or fish and wildlife habitat preservation,

including but not limited to ditching, diking, and fencing, except as permitted or required by the Permit;
h. The extraction of water from the Property or adjacent properties owned by Grantor, or the impoundment of water on the Property or on adjacent properties owned by Grantor, so as to affect the hydrology of the Property.
i. Acts or uses detrimental to the aforementioned retention and maintenance of land or water areas;
j. Acts or uses detrimental to the preservation of the structural integrity or physical appearance of sites or properties of historical, architectural, archaeological, or cultural significance.
k. The subdivision of the Property.

4. **Reserved Rights**: Grantor reserves all rights as owner of the Property, including the right to engage in uses of the Property that are not prohibited herein and that are not inconsistent with any Corps rule, criteria, permit, or the intent and purposes of this Conservation Easement.

5. **Taxes**: Grantor shall pay any and all applicable real property taxes and assessments levied by competent taxing authority on the Property. 89

6. **Maintenance**: Grantor shall, at Grantor's sole expense, operate, maintain and keep up the Property consistent with the purpose of this Conservation Easement. The Grantor shall maintain the hydrology of the Property as required by the Permit. Grantee shall remove from the Property any undesirable plant species identified on the attached list.

7. **Hazardous Waste**: Grantor covenants that if any hazardous substances or toxic waste exist or has been generated, treated, stored, used, disposed of, or deposited in or on the Property, or there are or have been any underground storage tanks on the Property, Grantor shall be responsible for any and all necessary costs of remediation.

8. **Public Ac**cess: No right of access by the general public to any portion of the Property is conveyed by this Conservation Easement. Grantor further covenants not to hold any portion of the Property open to general use by the public except with the written permission of the Corps and Grantee.

9. **Liability**: Grantor shall continue to retain all liability for any injury or damage to the person or property of third parties that may occur on the Property arising from ownership of the Property. Neither Grantor, nor any person claiming by or through Grantor, shall hold Grantee or the Corps liable for any damage or injury that may occur on the Property.

10. **Recording Requirements**: Grantor shall record this Conservation Easement in the official records of Jackson County, ILLINOIS, and shall re-record it at any time Grantee or the Corps may require to preserve their rights. Grantor shall pay all

recording costs, fees and taxes necessary at any time to record this Conservation Easement in the public records. Grantor shall thereafter insert the terms and restrictions of this Conservation Easement in any subsequent deed or other legal instrument by which Grantor divests himself/herself/itself of any interest in the Property, and shall provide a photocopy of the recorded Conservation Easement to the new owner(s).

11. **Enforcement**: The terms and conditions of this Conservation Easement may be enforced in an action at law or equity by the Grantee or the Corps against the Grantor or any other party violating or attempting to violate these Restrictions as follows: 90

a. Enforcement of this Conservation Easement shall be at the reasonable discretion of the Grantee unless the Grantee decides not to enforce a violation of this Easement or prevent a threat to the Easement, then the Corps reserves the right to enforce or prevent a threat to the Easement;

b. If Grantee determines that a violation of the terms of this Easement has occurred or is threatened, Grantee shall give written notice to the Grantor of such violation and demand corrective action sufficient to cure the violation and where the violation involves injury to the Property resulting from any use or activity inconsistent with the purpose of this Easement, to restore the portion of the Property so injured to its condition prior to the violation complained of in accordance with a plan approved by Grantee;

c. If Grantor fails to cure the violation within thirty (30) days after receipt of notice thereof from Grantee or, under circumstances where the violation cannot reasonably be cured within a thirty (30) day period, fails to begin curing such violation within the thirty (30) day period, or fails to continue diligently to cure such violation until finally cured, Grantee may bring an action in law or in equity in a court of competent jurisdiction to enforce the terms of this Easement, to enjoin the violation, ex parte as necessary, by temporary or permanent injunction, and to require the reestablishment of the Property to the condition that existed prior to any such injury;

d. Any forbearance on behalf of Grantee to exercise its rights under this Easement in the event of any breach of any term of this Easement by Grantor shall not be deemed or construed to be a waiver of rights by Grantee. e. Any costs incurred in enforcing, judicially or otherwise, the terms, provisions, and restrictions of this Conservation Easement, including without limitation, the costs of suit, and attorney's fees, shall be borne by and recoverable against the non-prevailing party in such proceedings, except that such costs shall not be recoverable against the Corps. In addition, if the Grantee or the Corps shall prevail in an enforcement action, such party shall also be entitled to recover that party's cost of restoring the land to the natural vegetative and hydrologic condition existing at the time of execution of these Restrictions or to the vegetative and hydrologic condition required by the Permits.

12. **Assignment of Rights**: Grantee shall hold this Conservation Easement exclusively for conservation purposes. Grantee will not assign its rights and obligations under this Conservation Easement, except to another legal entity qualified to hold such interests under applicable state and federal laws and committed to holding this Conservation Easement exclusively for the purposes stated herein. Grantee shall notify the Corps (at the address specified in Section 14 below) in writing of any intention to reassign this Conservation Easement to a new grantee at least sixty (60) days in advance thereof, and the Corps must acknowledge the assignment in writing. The new grantee shall then deliver a written acceptance to the Corps office specified in Section 14. The assignment instrument must then be recorded and indexed in the same manner as any other instrument affecting title to real property and a copy of the assignment instrument shall be furnished to the Corps office specified in Section 14. Failure to comply with the assignment procedure herein stated shall result in invalidity of the assignment. In the event of dissolution of the Grantee or any successor, or failure for sixty (60) days or more to perform the obligations of this Conservation Easement, the Grantee shall transfer this Conservation Easement to a qualified and willing grantee. Upon failure of the Grantee or any successor to so transfer the Conservation Easement, the Corps shall have the right to sue to force such an assignment to a grantee to be identified by the Court.

13. **Successors:** The covenants, terms, conditions, and restrictions of this Conservation Easement shall be binding upon, and inure to the benefit of the parties hereto and their respective personal representatives, heirs, successors, and assigns, and shall continue as a servitude running in perpetuity with the Property.

14. **Notices**: All notices, consents, approvals, or other communications hereunder shall be in writing and shall be deemed properly given if sent by United States certified mail, return receipt requested, addressed to the appropriate party or successor-in-interest. To be determined and U.S. Army Corps of Engineers, Regulatory Branch 1222 Spruce Street St. Louis, Missouri 63103 15.

15 **Severability**: If any provision of this Conservation Easement or the application thereof to any person or circumstances is found to be invalid, the remainder of the provisions of this Conservation Easement shall not be affected thereby, as long as the purpose of the Conservation Easement is preserved.

16 **Alteration or Revocation**: This Conservation Easement may be amended, altered, released, canceled, or revoked only by written agreement between the parties hereto or their heirs, assigns, or successors in interest, which shall be filed in the public records of Fayette County, ILLINOIS. No action shall be taken, however, without advance written approval thereof by the Corps office specified in Section 14 above. Corps approval shall be by letter attached as an exhibit to the document amending, altering, canceling, or revoking the Conservation Easement, and said letter shall be informal and shall not require notarization. It is understood and

agreed that Corps approval requires a minimum of sixty (60) days written notice, and that the Corps may require substitute or additional mitigation, a separate conservation easement or alternate deed restrictions, or other requirements as a condition of approval. Any amendment, alteration, release, cancellation, or revocation together with written Corps approval thereof shall then be filed in the public records of Jackson County, ILLINOIS, within 30 days thereafter.

17 **Controlling Law**: The interpretation and performance of this Conservation Easement shall be governed by the laws of the State of ILLINOIS. TO HAVE AND TO HOLD unto Grantee forever. The covenants, terms, conditions, restrictions, and purpose imposed with this Conservation Easement shall be binding upon Grantor, and shall continue as a servitude running in perpetuity with the property. GRANTOR FURTHER COVENANTS that Grantor is lawfully seized of said Property in fee simple; that the Property is free and clear of all encumbrances that are inconsistent with the terms of this Conservation Easement and that no mortgages or other liens exist; that Grantor has good, right and lawful authority to convey this Conservation Easement, and that it hereby fully warrants and defends the title to the Conservation Easement hereby conveyed against the lawful claims of all persons whomsoever.

TO HAVE AND TO HOLD unto Grantee, its successors, and assigns forever.
GRANTOR:

John Ham, PO Box 2828, Carbondale, Illinois 62902,

Subscribed and sworn to before me this _____day of _____2021.

_____ Notary Public

GRANTEE: **Green Earth of Carbondale**, an Illinois not-for-profit, having an address of PO Box 441, Carbondale, Illinois 62903-0441 ("Grantee").

By _____ (Person) , Chair

Subscribed
and sworn to before me this _____day of _____2021.

_____ Notary Public

CONSERVATION EASEMENT APPENDIX FOR PARCEL Re: This tract of land is in Washington County, SE ¼ Section 11, Township 2 South, Range 5 West of the Third Principal Meridian. Nashville Township, Washington County, Illinois (38.3676, -89.6165).

LONG-TERM MANAGEMENT GOALS AND OBJECTIVES

The Mitigation Bank possesses wetland habitat and wildlife values important to the Steward, the people of the State of Illinois, and the people of the United States. The Mitigation Bank provides high quality reestablished, enhanced and preserved wetlands and contains jurisdictional waters of the United States and the State of Illinois. Individually and collectively, these habitat and wildlife values comprise the "Conservation Values" of the Mitigation Bank. The goal of long-term management is to ensure that the Conservation Values of the Mitigation Site are managed, monitored and maintained over the long term by transferring management responsibilities to a qualified long-term Steward upon Mitigation Bank closure. Long-term management is intended to be adaptive, as defined in the federal mitigation rule (U.S. Army Corps of Engineers 2008) cited below:

Adaptive management means the development of a management strategy that anticipates likely challenges associated with compensatory mitigation projects and provides for the implementation of actions to address those challenges, as well as unforeseen changes to those projects. It requires consideration of the risk, uncertainty, and dynamic nature of compensatory mitigation projects and guides modification of those projects to optimize performance. It includes the selection of appropriate measures that will ensure that the aquatic resource functions are provided and involves analysis of monitoring results to identify potential problems of a compensatory mitigation project and the identification and implementation of measures to rectify those problems. The wetlands at the Mitigation Bank will not be altered without obtaining all appropriate permits and clearances from regulatory agencies. Long-term management is intended to promote the long-term functionality of forested wetlands.

LONG-TERM MANAGEMENT AND MAINTENANCE

The Plan describes long-term management needs, roles and responsibilities of the Steward. The Steward, ***Green Earth***, will retain qualified staff and/or contractors with adequate ecological and biological qualifications to manage the Mitigation Bank. Prior to taking over management of the Mitigation Bank, the Steward will have ample time to work with Southern Illinois Mitigation Coop, while the Mitigation Bank remains under Southern Illinois Mitigation Coop, management responsibility in order for the Steward to become comfortable with the tasks associated with long term Mitigation Bank management. Permits necessary to implement management actions on the Mitigation Bank will be held by the Steward in the form of Permanent and Perpetual Conservation Easement.

The Steward will be compensated by Southern Illinois Mitigation Coop through an Endowment for management, maintenance and monitoring period associated with the conservation easement. The management and maintenance endowment will provide financial support of long-term operations and maintenance associated with a forested wetland, riparian corridor and upland oak habitat.

However, the Steward, at their discretion, may provide a higher level of monitoring and operation and maintenance than is described in this plan. The reestablishment sites long-term management should reflect activities that are associated with long term forest and wetland management.

The end result for both the sponsor and the long term manager is to establish a climax bottomland hardwood forest. The management techniques utilized in the five years of the mitigation bank, under intense management, is ultimate for Close-out and initial Long Term Stewardship for the site.

The bank sponsor and long term managers will employ pre-commercial thinning techniques designed to reduce competition and increase growth. Since the site is not being managed for yield requirements, the addition of fertilizers and herbicides may not be deemed necessary. However fertilization early in the process may be advisable.

Therefore, the long term managers may address additional timber stand improvement techniques (pre-thinning or release) and minor herbicide requirements working to obtain a climax forest. Jason Tabor of Tabor Wholesale Nursery will act as site consultant for timber management. A climax forest should be relatively stable and not require intervention by man to maintain their structure and productivity. Management for climax forests is suitable where ecosystem and wildlife values are prominent management objectives. Climax is the last stage of succession (Oak-Hickory forest). It differs from earlier successional stages, as it exhibits the following characteristics:

1). More stable;
2) More vertical structure;
3) Inhabited by long lived species;
4) The last stage of succession;
5) High diversity; and
6) Biological population regulation.

Long-term management objectives for the Mitigation Bank are as follows:

Maintain diverse forested wetland communities dominated by native species;
- Establishment of a Climax Bottomland Hardwood Forest of high diversity

- Maintain and/or expand the riparian corridor to provides linkages along Elkhorn Creek;
- Maintain and enhance buffer habitat on the west side of site to support overall site functionality for forested and emergent wetland habitats;
    - Create improved emergent wetland areas
- Maintain improved habitat conditions for wildlife.
- Prevent or reduce erosion from the site thus improving water quality in Elkhorn Creek

Climax is sustainable without management intervention and performs many ecological services in nutrient cycling, air and water purification, and regulating hydrology. Species richness and diversity increase as succession approaches climax (Hamilton, et al 1999). As described here, the evolution and climax of a Bottomland Hardwood Reestablishment site has few long term maintenance requirements. The mitigation bank planting regime includes climax forest tree species for the Nashville mitigation site.

LONG-TERM MANAGEMENT AND MAINTENANCE PLAN AGREEMENT NASHVILLE MITIGATION BANK – ADDENDUM ONE

Green Earth of Carbondale, an Illinois not-for-profit, having an address of PO Box 441, Carbondale, Illinois 62903-0441 ("Grantee").
By:_____

PROJECT MANAGER, REGULATORY BRANCH, U.S. ARMY CORPS OF ENGINEERS
By:_____

Southern Illinois Mitigation Coop, MITIGATION BANK SPONSOR
By: John Ham

Limits of Responsibility

The Steward will not be responsible for Mitigation Bank failure attributed to natural catastrophes such as flood, drought, disease, regional pest infestation, and others that are beyond their reasonable control. Active management is not expected for ecological change that comes about as a result of processes such as climate change, fluctuating river levels, and sedimentation due to overbank flood deposits that may affect the wetlands. Over time, natural successional processes will occur that may reduce wetland functioning or reduce wetland area

THIRD-PARTY RESPONSIBILITY AGREEMENT THIRD-

PARTY RESPONSIBILITY AGREEMENT

WHEREAS, **Green Earth of Carbondale**, an Illinois not-for-profit, having an address of PO Box 441, Carbondale, Illinois 62903-0441 ("Grantee") is a not-for-profit corporation organized under the laws of the State of Illinois and,

WHEREAS, To be Determined of Carbondale Conservancy has obtained approval of their Board of Directors for their participation and execution of this Agreement, and WHEREAS, Southern Illinois Mitigation Coop., hereinafter referred to as the "Sponsor" has drafted and executed a Mitigation Bank Instrument/Plan for the purpose of establishing a Wetland and Stream Mitigation Bank on real estate located in Jackson County, Illinois, and

WHEREAS, the said Nashville Mitigation Banks, hereinafter referred to as the Mitigation Bank, requires the sponsor to undertake certain activities and sets certain performance standards relative to the real estate upon which the mitigation site project is located and further authorized the U. S. Army Corps of Engineers (USACE) to monitor the activity and performance of the sponsor concerning those requirements, and

WHEREAS, the USACE and the Mitigation Bank Instrument/Plan required financial assurances from the sponsor for the performance of their obligations there under. THEREFORE IT IS STIPULATED AND AGREED TO BY AND BETWEEN THE PARTIES AS FOLLOWS:

1. The Sponsor shall obtain a bond from _____ Bank of _____ County in the sum of $20,000.00 payable to **Green Earth of Carbondale**, an Illinois not-for-profit, having an address of PO Box 441, Carbondale, Illinois 62903-0441 ("Grantee") in the form and content agreeable to the sponsor and the USACE.

2. The bond shall be conditioned on the sponsor performing its obligations under the Mitigation Site Plan.

3. If payment of all or any portion of the proceeds of the bond is received by To be Determined of _____ then **Green Earth of Carbondale**, an Illinois not-for-profit, having an address of PO Box 441, Carbondale, Illinois 62903-0441 ("Grantee") servancy shall either (A) Apply said funds toward the completion of the obligations of the Mitigation Site Plan.

To be Determined
By:_____

PROJECT MANAGER, REGULATORY BRANCH, U.S. ARMY CORPS OF ENGINEERS
By:_

SOUTHERN ILLINOIS MITIGATION COOP, MITIGATION BANK SPONSOR MANAGER
By John Ham

Financial Assurances Reports / Letter of Credit/Bond

1. The sponsor will provide an annual report, one for each site, showing beginning and ending balances, including deposits into and any withdrawals from, the accounts providing funds for financial assurances.
2. The reports shall include information on the amount of required financial assurances and the status of those assurances, including their potential expiration.

LETTER OF CREDIT OR DEVELOPER'S BOND – N UMBER XXX (date in 2021)

TO: (Name of group) Conservancy (Address)

RE: Nashville MITIGATION BANK, by Southern Illinois Mitigation Coop

We hereby issue in your favor our Irrevocable Standby Letter of Credit Or Bond Number XXX in the amount of $81,300 (Eighty-one Thousand Three Hundred and 00/100ths). This Letter of Credit or Bond expires (_____) at our counters. Available against drafts drawn at sight on (Name of Bank), (Address) bearing the clause: "Drawn under Irrevocable Standby Letter of Credit or Bond XXX dated (fill in date) "

Each draft must be accompanied by the following documents:

1. A certificate purportedly signed by (name group) Conservancy stating: "The US Army Corps of Engineers (USACE) has full and final authority to determine whether Southern Illinois Mitigation Coop has specifically performed and fulfilled some and/or all obligations, covenants, terms and conditions of the Nashville Mitigation Bank (SRWSMB). Southern Illinois Mitigation Coop has defaulted on some or all of the obligations, covenants, terms and conditions of the (Name of group) Conservancy has been directed by the USACE to drawn against this Letter of Credit."

1. The original Bond or Letter of Credit. It is a condition of this Bond or Letter of Credit that it will automatically reduce upon receipt by (Name of) Bank from (Name of group) Conservancy the attached Reduction Certificate , "Exhibit A", properly completed and purportedly signed by (Name of group) Conservancy. All banking charges except those of the issuing bank are for the account of the beneficiary.

2. Partial draws are permitted. This Bond or Letter of Credit is deemed to be automatically extended without amendment for additional one year periods from the current expiration date or any future expiration date, unless at least

60 calendar days prior to the then current expiration date, (Name of) Bank notifies you in writing of non-renewal and delivers by registered or certified mail, or overnight courier, at the address stated above. In any event, this Bond or Letter of Credit will not renew beyond (set date), which is the full and final expiry date. This Bond or Letter of Credit may be cancelled prior to the expiration date upon our receipt of a written consent to cancel from the Beneficiary when accompanied by the original Bond or Letter of Credit. This Bond or Letter of Credit sets forth in full the terms of our undertaking, and such undertaking shall not in any way be modified, amended or amplified by reference to any document, instrument or agreement referred to herein or in which this Bond or Letter of Credit is referred to or to which the Bond or Letter of Credit relates and any such reference shall not be deemed to incorporated herein by reference any document, instrument or agreement.

3. Special Condition(s) 1. (Name of) Bank has no obligation or right to inquire into the correctness of any herein described statement. Payment will be made at the counters of (Name of) Bank, Washington County, Illinois. Unless otherwise stated, all documents are to be forwarded to us by mail or hand delivered to our counters. Documents are to be directed to: (Name of) Bank, Attn: (Name person) (address of bank.

4. We hereby engage with drawers and/or bona fide holders of drafts shown and negotiated in conformity with the terms of this credit will be duly honored upon presentation. This credit is subject to the Uniform Customs and practice for documentary credits (1995 revision) International Chamber of Commerce Publication No 500. Sincerely, (Name of person signing) Vice President

EXHIBITS

Default and Closure Provisions

Default Provisions: If the Corps determines that the mitigation bank is not meeting performance standards or complying with the terms of the instrument, appropriate action will be taken. Such actions may include, but are not limited to, suspending credit sales, adaptive management, decreasing available credits, utilizing financial assurances, and/or terminating the instrument.

Bank Closure Plans: A Bank Closure Report (Close-out Report) will be provided upon completion or termination of operation of the Bank. The report will include aquatic resource delineation and Cowardin Classification of each identified resource, pre-construction and current aerial photography, expected land use and management of the site, a finalized ledger, long-term management steward identification and ownership records. It is anticipated that the bank will be a self-sustaining system with no operation or maintenance required.

In the event of a complete or partial mitigation area failure attributed to natural catastrophes, such as flood, fire, wind, drought, disease, regional pest infestation, etc., the permittee, Project Sponsor or an approved third party, will contact the Corps to evaluate the physical and functional changes to the mitigation site. If such events occur before performance standards are met, Project Sponsor or the permittee, with consultation from the USACE and the IRT, will determine the extent of site changes and follow the adaptive management plan outlined to either take corrective action or modify performance standards. The permittee, Project Sponsor or an approved third party, will not be held responsible for natural catastrophes that may occur after the mitigation site has successfully met performance standards.

APPENDIX

Watershed Approach to Compensatory Mitigation

This section was prepared in accordance Guidance for Mitigation Bank Projects prepared by the St. Louis District, U.S. Army Corps of Engineers, dated May 2010.

No known watershed plan exists for the Kaskaskia Watershed.

1: Historic and Current Aquatic Resource Losses in the Watershed

The subject site on Elkhorn Creek (HUC 0709000507) is in the Lower Kaskaskia Watershed (07140204); both water bodies are 303(d) waters. The proposed mitigation site is located in the Lower Kaskaskia. It is located west of the city of Nashville, Washington County, Illinois. The area along Route 15 has been used for agricultural practices for decades. Some areas that were forested wetland areas were drained for use a row cropping field and low pastures. The proposed mitigation bank site is an area that was clear cut and used for these practices.

There were major losses of wetlands in this area as farms expanded. In the 1960s the area began to become popular for residential development due to its picturesque qualities. With both the farming and then residential development much of the forest cover was removed and major habitat loses occurred. Farming practices striped the land of ground

cover leading to erosion across the land and silting of streams severally impacting aquatic habitat.

2. Water quality issues in the present in the mitigation watershed

Some streams and other waters in the area have been designated as 303(d) waters under the Clean Water Act, meaning that human degradation has severely polluted streams and affecting water quality and habitat in the area.

Table 6: Kaskaskia Watershed: Causes of Impairment for Reporting Year 2018 (EPA) Starred (*) impairments are noted for Elkhorn Creek as well:

Cause of Impairment	Number of Causes Reported
Dissolved Oxygen *	30
Manganese	26
Phosphorus, Total	22
Total Suspended Solids (TSS) *	20
Sedimentation/Siltation *	16
pH	12
Fecal Coliform	10
Sulfates	7
Cause Unknown	6
Iron	6
Polychlorinated Biphenyls (PCBs) *	6
Total Dissolved Solids (TDS) *	6
Mercury *	5
Atrazine	4
Cadmium	4
Methoxychlor	3
Lindane	1
Nickel	1
Nitrogen, Total	1
Zinc	1

Manganese, sulfate and pH impairments are primarily due to surface and underground coal mining producing acid mine drainage and increasing conductivity. In 2004, there were 47 actively operating coal mines with 169 authorized discharges in the Kaskaskia River watershed. Additionally, 1,177 abandoned or non-active mines are known from the

watershed[3]. A number of historic surface and underground coal mines are known to exist in the Sycamore Creek, which lies just to the east of Elkhorn Creek and the mitigation site. See Figure 8. There is no mining occurring in the Elkhorn Creek watershed and the above numbers are only listed to show overall watershed issues.

Additionally impairment from agriculture activities include: erosion from fields contributing sediment to water columns, suspended solids, and nutrients which can affect dissolved oxygen. Other major impairment sources are municipal waste water discharges. These impairments are limited to small waste water treatment systems and use of on-site septic fields.

Elkhorn Creek (HUC 0709000507) is a 303(d) water with the following impairments listed:

PCB – Fish Impairment
Mercury – Fish impairment
Total Suspended Solids – Aquatic Life Impairment

3. Historic and Current State of the Mitigation Site

Historically, the mitigation site was part of a large complex of bottomland hardwood wetlands (PFOA1: palustrine, forested, broad-leaved deciduous, temporarily flooded) adjacent to the riparian corridor of Elkhorn Creek. As is the case with many wetlands in fertile river bottom locations, the site was cleared and row cropped for many years. The site is used for row crop production with soybean grown in 2019.

There is no FEMA floodplain map for Washington County. However, this site regularly floods and over many years no crops could be grown on these fields due to flooding and wetness. Drainage swales/patterns were installed by previous farmers to move floodwaters off the cropland (per prior land owner's communication).

On the west bank of the creek the fields are used for row crops. Most recently the crop was soybeans. There is a buffer area along the west side of Elkhorn Creek that varies for ten feet wide to almost 50 feet. Thus most of the creek has some riparian value. Erosion, as is typical for an active farming site, does occur on the farmed lands near the site. NRCS rated the site as highly erodible.

[3] Illinois Environmental Protection Agency (2018). Kaskaskia River TMDL Report; Springfield, Illinois.

4. Short and Long-term off-site threats

Concerning water quality support in the subject watershed, the development of the subject mitigation site will support the overall chemical, physical and biological functions of the watershed by extending the naturalized corridor of Elkhorn Creek. The large area that is forested on the north and east side of the creek will be placed in conservation easement and will support the long-term viability of the mitigation site by providing a consistent natural (i.e. non-urbanized) stream flooding regime, and protecting the stream from urbanizing.

Streams with urbanized watersheds or where forest have been removed that would have slowed down flows and held sediments have been shown to have a high frequency of flooding and erosion causing flows[4], larger magnitude peak flows[5], and "flashier" storm hydrographs[6] because of the increase in coverage of impervious surfaces. Streams in urban watershed then to be more incised and channelized than their cohorts in natural watersheds. Urban streams also have less habitat types/diversity, which in turn negatively impacts biological communities. Macro-invertebrate, fish, and amphibian communities that occupy urbanized streams are often more disturbance tolerant, while disturbance sensitive animals are expatriated from stream reaches that urbanize[7]. Urbanized streams also tend to receive higher levels of inorganic nitrogen and phosphorous, toxic chemicals, have higher conductivity, and pharmaceuticals[8].

Concerning water rights issues, the sponsor SIMC- Ehorn Environmental do not anticipate any negative impacts to the mitigation site. Interpretation of water rights in Illinois is governed by Illinois Supreme Court case Evans v. Merriweather, 4 Ill. 492 (1842). In that case, Evans, the upstream riparian owner, diverted the entirety of a streams flow during a drought year, leaving no flow for Merriweather to operate his mill. In deciding the case, the court stated "Each riparian proprietor is bound to make such use of the running water as to do as little injury to those below him as is consistent with a valuable benefit to himself. The use must be reasonable use … Where all have a right to a common benefit, and none can have an exclusive enjoyment, no rule, from the very nature of the case can be laid down as to how much each may use without infringing upon the rights of others. In such cases, the question must be let to the jury, whether the party complained of has used, under all the circumstances, more than his just proportion." In the case, the Illinois Supreme Court found that Evans' dam was illegal under both English and American law, as the dam diverted the entirety of the stream flow into his well, depriving others of use.

Other information to consider:

[4] Walsh et al., The urban stream syndrome: current knowledge and the search for a cure. Journal of the North American Benthological Society 24, 706 – 723 (2005)
[5] Paul, M.J. and J.L. Meyer. Streams in the urban landscape. Annual Review of Ecology and Systematics 32, 333 – 365 (2001)
[6] Booth, D.E. Challenges and prospects for restoring urban streams: a perspective from the pacific northwest of North America. Journal of the North American Benthological Society 24, 724 – 737 (2005)
[7] Walsh et al., The urban stream syndrome: current knowledge and the search for a cure. Journal of the North American Benthological Society 24, 706 – 723 (2005)
[8] Martinet, M.C. Urban Stream Syndrome: The Future of Stream Ecosystems in Urban Watersheds. University of New Mexico

There is a Corps of Engineer Feasibility Study of the Kaskaskia River that is looking at establishment of river health. Reestablishment of forested areas along the tributary creeks would provide great benefits to the overall health of the Kaskaskia River system.

It is noted that the Kaskaskia River system has a great diversity of aquatic species. There are ten important fish species in the river and its impoundments that warrant protection. At this time the fish health is rated a fair to very good. The species in fair condition are pan fish such as Blue Gill and Crappie and the one excellent species is Sauger.

This project would certainly dovetail into the goals of the river reestablishment that is being considered watershed wide. One group that will be contacted as part of this project is the National Great Rivers Reestablishment group. Their telephone number is 618-979-7013.