US Army Corps
of Engineers
Great Lakes And Ohio River Division
LOUISVILLE DISTRICT / HUNTINGTON DISTRICT / PITTSBURGH DISTRICT

Ohio River Main Stem Systems Study (ORMSS)

Interim Feasibility Report:

Ohio River Ecosystem Restoration Program

Document RE: FINAL

Real Estate - Appendix G

Restore
and
Protect
Ohio River
Corridor

FINAL October

2000

DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT, LOUISVILLE
CORPS OF ENGINEERS
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Interim Feasibility Report:

Ohio River Ecosystem Restoration Program

ILLINOIS, INDIANA, KENTUCKY, OHIO, WEST VIRGINIA, PENNSYLVANIA

Document RE:

Real Estate Appendix

October 2000

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Document RE:

REAL ESTATE APPENDIX

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SECTION 1

PURPOSE OF REPORT

The purpose of the study is to determine the need for and potential benefits of establishing a program to improve degraded ecological resources of the Ohio River and its associated floodplain corridor. The Ohio River is a national treasure with a rich history of culture, commerce, and natural resources, many of which are declining, and irreplaceable. The Ohio River Ecosystem Restoration Project Partnership will restore, enhance, and protect fish and wildlife abundance, diversity, and habitats negatively impacted by human activities within the Ohio River watershed.

This Draft Real Estate Appendix is being developed for inclusion in the Interim Feasibility Report for the Ohio River Ecosystem Restoration Program. The report will present details of five specific restoration projects that are representative of the larger group of proposed projects. Those five projects are:

1. Lewis County Kentucky Bottomland Restoration (KY-31)
2. Upper Twin Creek T-Dikes (OH-06)
3. Hannibal Dam Tail Waters Revetments (WV-40)
4. Barren Creek and Big Bay Creek Embayments (IL-09/10)
5. Hovey Lake Restoration (IN-10/11)

In addition to these five projects, Baseline Cost Estimates for Real Estate have also been completed for the 20 remaining Level 1 sites. These baseline estimates as well as some site specific investigations will be used to develop a concept level estimate for the approximately 220 Level 2 and Level 3 sites. Because this report is seeking a programmatic approval of these projects, additional planning reports will be submitted for approval prior to implementation of any specific project. This includes the five selected representative projects presented in this report.

This Real Estate Appendix is being submitted as Document RE of the Interim Report for the Ohio River Ecosystem Restoration Program. In so much as is possible it has been prepared in accordance with Chapter 12 of ER 405-1-12 and follows the general outline for feasibility reports even though this report is not seeking individual project implementation authority.

This Real Estate Appendix is to be considered tentative in nature and for planning purposes only. Both the final real property acquisition lines and the estimates of cost are subject to change, even after this report is approved.

SECTION 2

REFERENCES

REPORT	DATE
A. Interim Report Number 1: J.T. Myers and Greenup Locks Improvements - Document RE	April 2000
B. Interim Report Number 2: Ohio River Ecosystem Restoration Program - Document RE	**This Report**

SECTION 3

AUTHORITY

The basic authority for the Ohio River Main Stem Study, is contained in the resolution adopted by the Committee on Public Works of the United States Senate dated 16 May 1955:

> Resolved by the Committee on Public Works of the United States Senate, that the Board of Engineers for Rivers and Harbors created under Section 3 of the River and Harbor Act, approved June 13, 1902, be, and is hereby requested to review the reports on the Ohio River published in House Document No. 306, Seventy-fourth Congress, First Session, House Committee on Flood Control Document No. 1, Seventy-fifth Congress, First Session, and related reports, with a view to determining whether any modifications in the present comprehensive plan for flood control and other purposes in the Ohio River basin is advisable at this time.

Further authority was provided through a resolution adopted by the U.S. House of Representatives Committee on Public Works and Transportation adopted 11 March 1982. This resolution reads as follows:

> Resolved by the Committee on Public Works and Transportation of the House of Representatives, United States, that the Board of Engineers for Rivers and Harbors established by the Section 3 of the River and Harbor Act approved June 13, 1902, is hereby requested to review the reports on the Ohio River published as House Document No. 492, 60th Congress, First Session, and House Document No. 306, Seventy-fourth Congress, First Session, and other pertinent reports with a view to determine whether any modification in the authorized plan for modern barge navigation and other purposes on the Ohio River is advisable at this time with particular emphasis on need for improvement or replacement of Emsworth Locks and Dam, Ohio River Mile 6.1; Dashields Locks and Dam, Ohio River Mile 13.3; Montgomery Island Locks and Dam, Ohio River Mile 31.7; and other locations where obsolete or inadequate facilities impede the orderly flow of commerce.

SECTION 4

REAL ESTATE PLAN

4.1 Project Location And Description

The objectives of these projects are to restore, enhance, and protect important terrestrial, wetland, and aquatic habitats in the Ohio River corridor.

The Ohio River ecosystem was historically a free-flowing river through primarily forested habitat, with scattered prairies, canebrakes, and wetlands in the floodplains of the mainstem and its tributaries. Most of this area has been settled, cleared, drained, farmed, and developed, resulting in the outright loss of habitat, and the fragmentation of that which remains. Impoundment of the Ohio River has also altered the plant species composition of the riparian corridor. These changes have affected both the abundance and diversity of wildlife, selecting for more generalist species and exacerbating the decline of rare species. The loss of riparian habitat in particular affects not only wildlife but also water quality and quantity in the adjacent waterways. The islands contain some of the more intact riparian and bottomland forest habitats. Impoundment of the river has destroyed the natural process of island creation and accretion, and many islands have been dredged away. There are few lands in the corridor managed with a conservation purpose, and there is a general lack of land use planning and zoning river-wide.

The overall main stem Ohio River extends from the junction of the Allegheny and Monongahela Rivers at Pittsburgh, Pennsylvania, flowing by the states of Ohio, West Virginia, Kentucky, Indiana, and Illinois to near Cairo where the Ohio joins the Mississippi River. This area includes 981 miles of commercially navigable channel and a total drainage area of 204,000 square miles. The Ohio River is a vital transportation artery for the basin, as well as a large number of other states through its interconnections with the Mississippi River, the Great Lakes and U. S. coastal ports.

In addition to its valuable role in supporting economic development, the Ohio River navigation system also offers a wide range of recreation opportunities, including fishing, camping, boating, skiing, sightseeing and a host of other activities. The system also provides important habitat for a variety of fish, mollusks, waterfowl, migratory birds and furbearers.

The topography of the overall study area lies in a transition area from rugged mountains to flat plains. The Appalachian Mountains dominate to the east. The Ohio River landscape contains considerable local relief, which gradually modifies to rolling plains through most of Kentucky and Tennessee. North of the Ohio River, broad valleys with only minor relief extend from southwestern and central Ohio through central Indiana into southern Illinois.

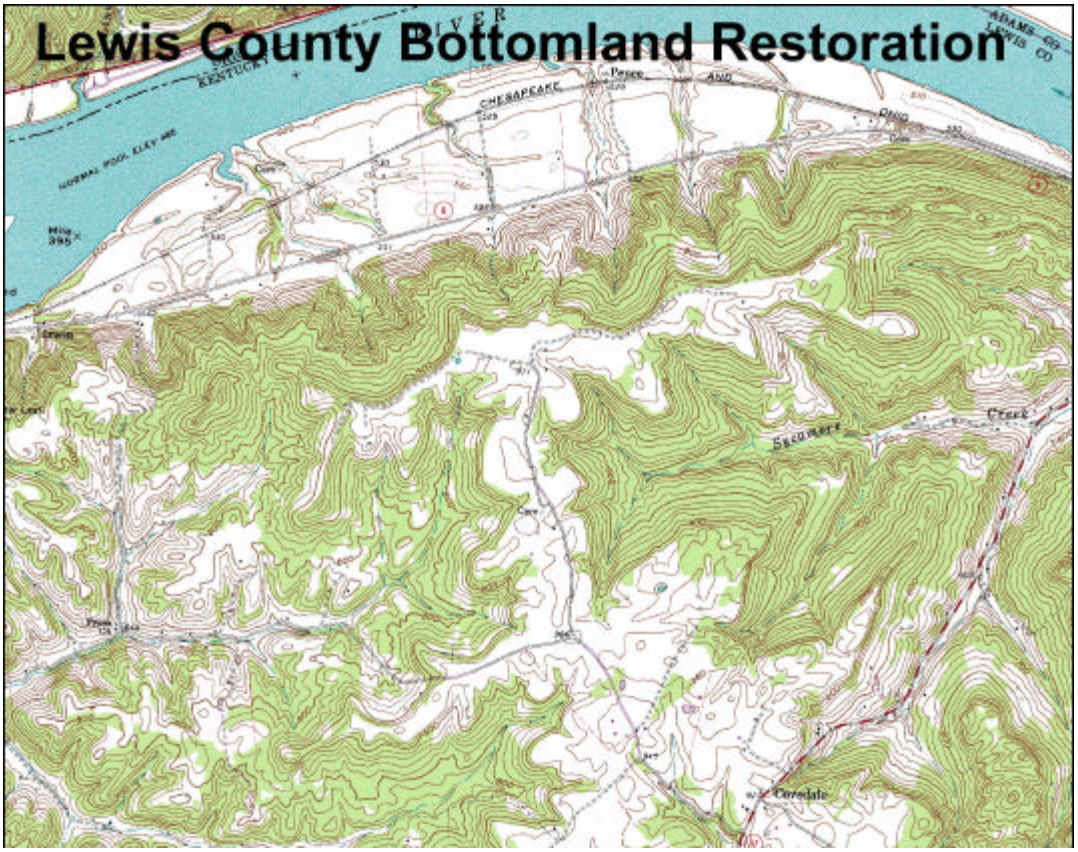
As discussed earlier, this report will discuss five projects which are representative of the larger group of projects. Details on each of these projects are presented below in an effort to give an overview of types of projects anticipated and how real estate issues associated with these

projects might be addressed. In all cases, including the five projects presented here, additional approval will be required before implementation of any specific project. This will require that for each project proposed, a more detailed Real Estate Plan will be presented in the documentation seeking implementation approval. A discussion of the five example projects follows:

4.1.a LEWIS COUNTY BOTTOMLAND RESTORATION PRIORITY AREA 1 (KY-31)

Location

The proposed Lewis County Bottomland Restoration project area is located in Lewis County, Kentucky. The project area is located along State Route 8 just downstream of the town of Concord, Kentucky, between Ohio River miles 391-396 in the Meldahl pool. The project site is within the jurisdiction of the Huntington District, U.S. Army Corps of Engineers (USACE).



Project Goal

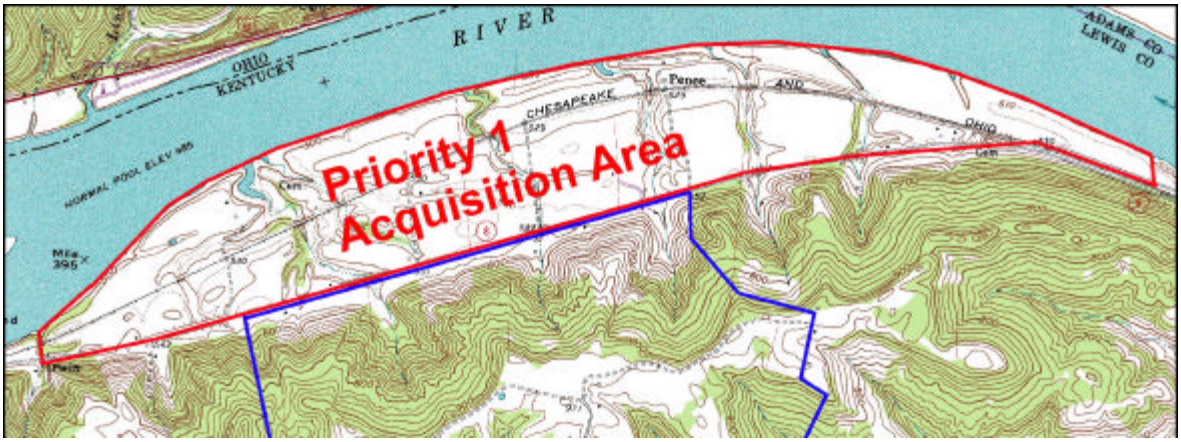
The primary goal of the Lewis County project is the acquisition, restoration, and reforestation of approximately 785 acres of bottomland hardwoods and the restoration of a riparian corridor along the Ohio River. Long-term restoration efforts will include reforestation of bottomland hardwoods, development of seasonally flooded impoundments, and the restoration of natural systems throughout the floodplain.

Project Description and Rationale

The Lewis County Bottomland Restoration project area consists of approximately 785 acres of Ohio River bottomland habitat in Lewis County, Kentucky.

A portion of the floodplain area will be reforested with a mixture of mast producing bottomland hardwood trees, and the entire area will be managed to provide habitat diversity for game and non-game wildlife. A portion of the project area will be maintained as open habitat such as warm season grasslands, food plots, or other wildlife openings. Future development would include the construction/development of moist soil units and/or other wetlands.

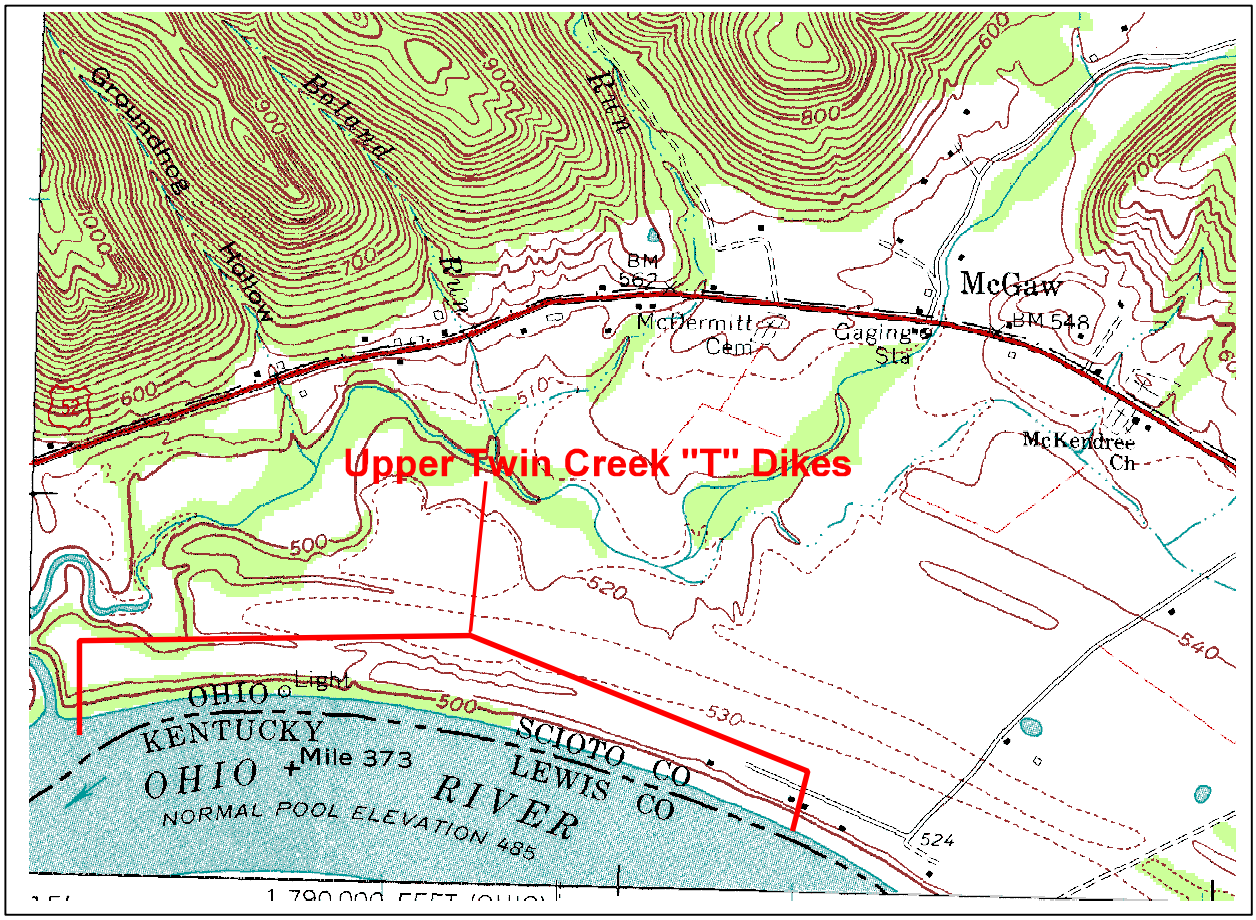
Project Diagram



4.1.b UPPER TWIN CREEK "T" DIKES (OH-06)

Location

The proposed Upper Twin Creek "T" Dikes project area is located in Scioto County, Ohio just upstream of Buena Vista, Ohio at Ohio River Mile 372 and 373 in the Meldahl pool. The project site is within the jurisdiction of the Huntington District, U.S. Army Corps of Engineers (USACE).



Project Goal

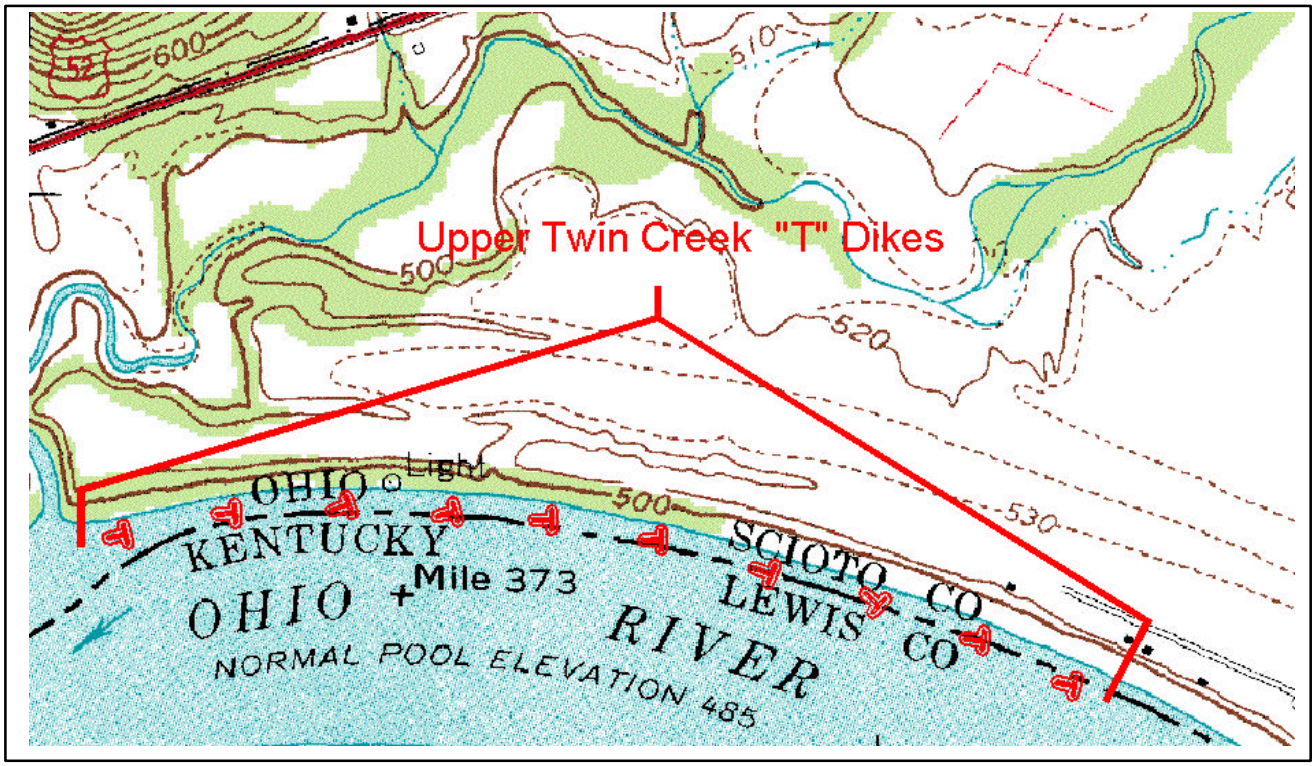
The primary goals of the Upper Twin Creek "T" Dikes project are to provide aquatic habitat diversity upstream from Upper Twin Creek and to provide velocity shelters for fishes in the Ohio River during winter and times of high flows. Increased habitat diversity would correlate with a sustained fishery resource and an improved recreational fishery.

Project Description and Rationale

A group of ten "T" shaped boulder (riprap) structures will be created upstream from Upper Twin Creek along the main channel border of the Ohio River. The boulder piles will be constructed at various depths and at various distances from the shoreline outside of the

navigation channel to maximize habitat heterogeneity. The “T” dikes structures will also provide velocity shelters for fishes during all seasons.

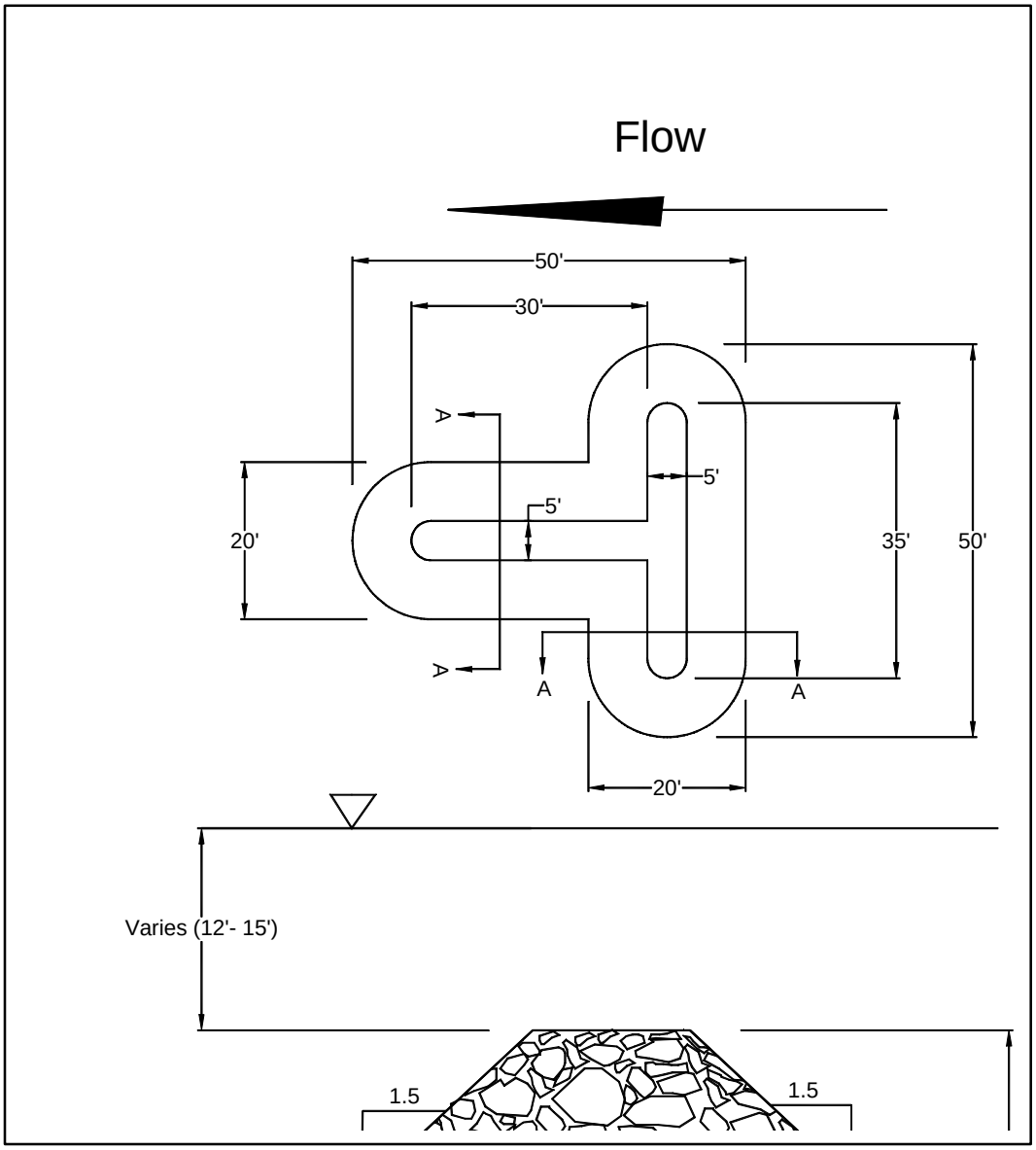
Project Diagram



“T” Dike Structure

A “T” Dike is a large rock revetment designed to provide submerged aquatic habitat. These structures would be placed in a field of ten. Each structure would be randomly positioned, 25 to 50 yards from the riverbank, between ORM 372 and 373. An individual structure would be 35 feet in width and 30 feet in length at the top (Figure 1). The structure would have 1.5 to 1 side slopes, and the overall dimension would be 50 feet by 50 feet. The dike shall be toed into the sub-grade a minimum of 2 feet and stand above the channel bottom approximately 5 feet. The size of the rock used shall be uniformly graded limestone with each rock weighing between 50 and 150 pounds. Normally a well-graded rock would be used, however, a uniform gradation would provide better aquatic habitat.

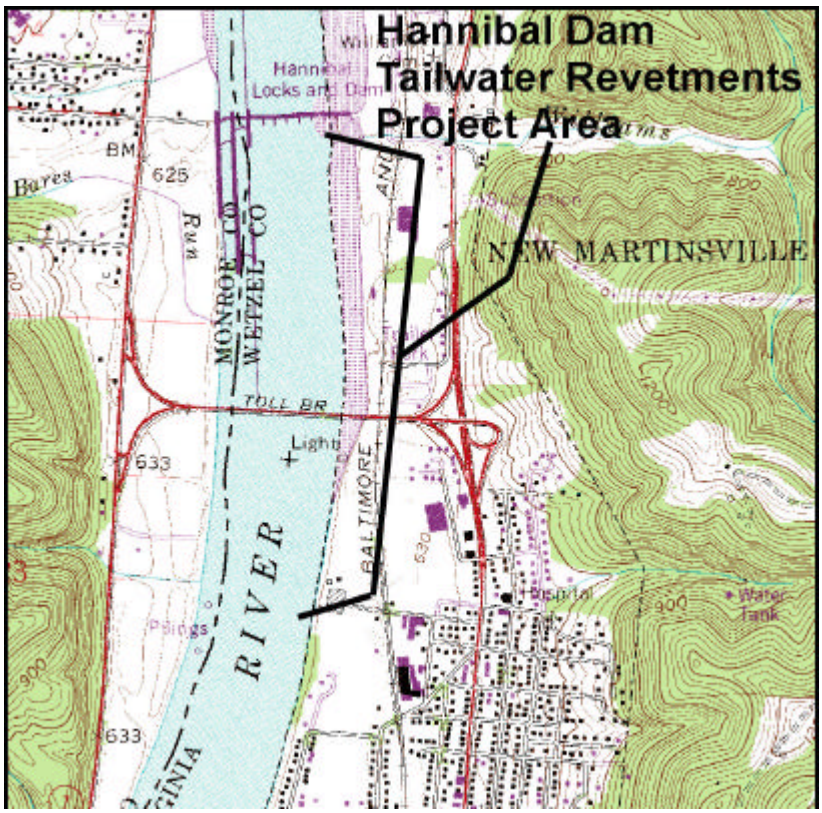
Figure 1. "T" Dike detail.



4.1.c Hannibal Dam Tailwater Revetments (WV-40)

Location

The proposed Hannibal Dam Tailwater Revetments project area is located in Wetzel County, West Virginia within the city limits of New Martinsville, West Virginia immediately downstream of the Hannibal Locks and Dam in the Willow Island Pool between Ohio River Mile 126.9 and 128.5. The project site is within the jurisdiction of the Pittsburgh District, U.S. Army Corps of Engineers (USACE).



Project Goal

The primary goals of the Hannibal Dam Tailwater Revetments project are to provide aquatic habitat diversity downstream from Hannibal Dam, to provide winter velocity shelters for fishes in the Ohio River, and to provide offshore structure for recreational fishing. Altering the heterogeneous habitat downstream from the dam would improve species diversity, facilitate a sustained fishery resource, and improve the recreational fishery in the area.

Project Description and Rationale

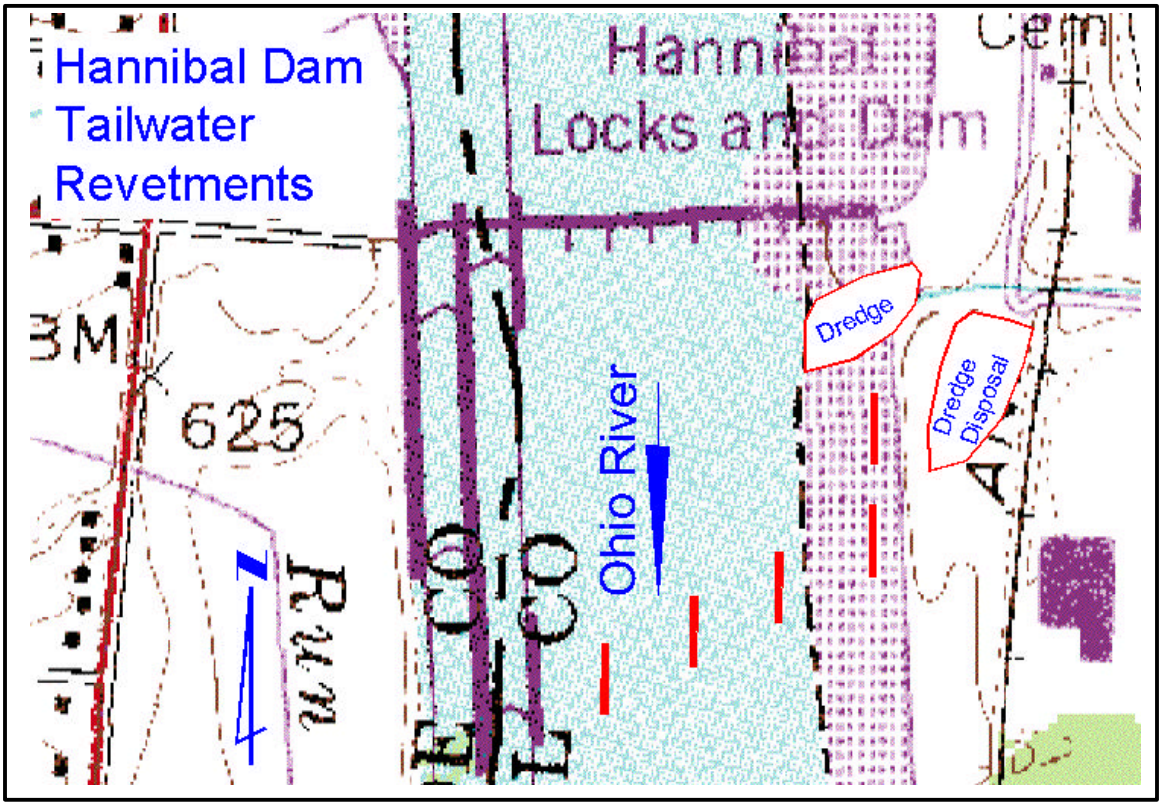
The Hannibal Dam Tailwater Revetments project will consist of three primary elements including:

Constructing two boulder (rip-rap) revetments that runs parallel/adjacent to the east bank of the Ohio River from the handicap fishing pier downstream approximately 600 feet;

Constructing three offshore revetment (riprap) structures near the restricted access buoy line;

And Dredge the mouth of Williams Run to provide a deep-water outlet and enhance bank-fishing opportunities.

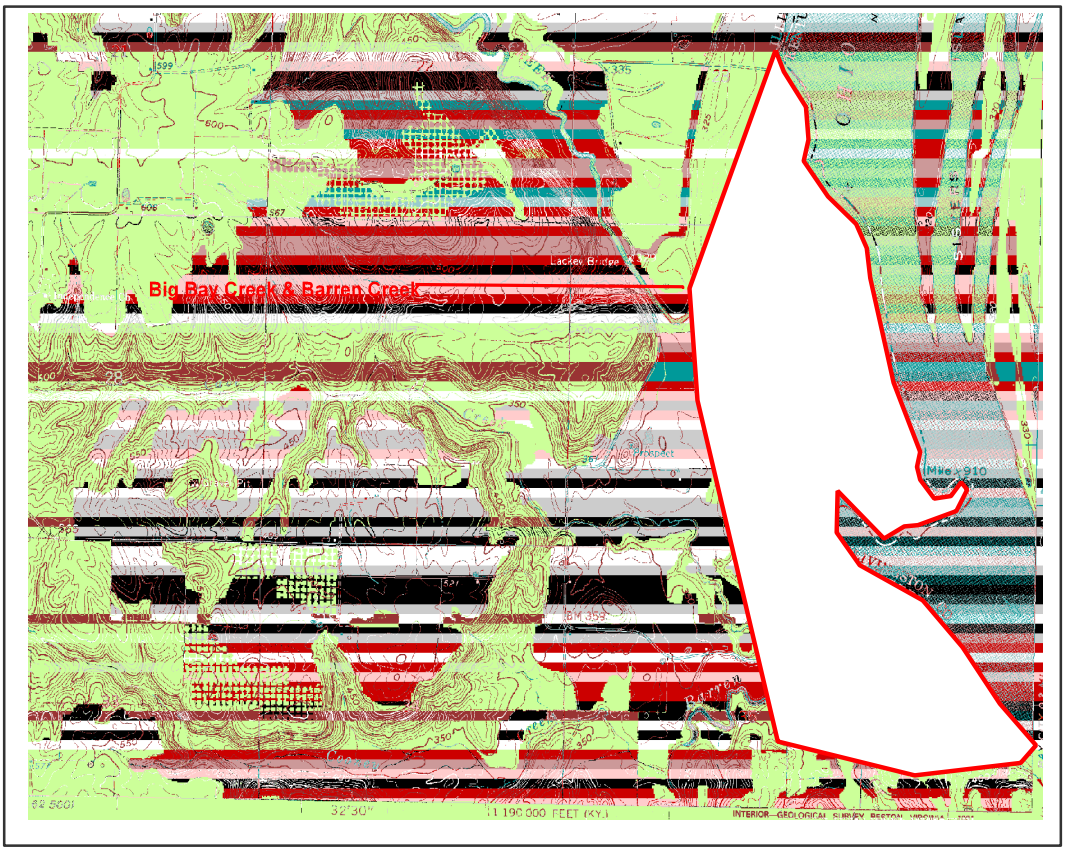
Project Diagram



4.1.d BARREN CREEK AND BIG BAY CREEK EMBAYMENTS (IL-10)

Location

The proposed Barren Creek and Big Bay Creek embayment project area is located in Pope County, Illinois near Bay City, Illinois. The project site is in the Smithland Pool between Ohio River Mile 909.4 and 910.9. The project site is within the jurisdiction of the Louisville District, U.S. Army Corps of Engineers (USACE).



Project Goal

The primary goal of the Barren Creek and Big Bay Creek embayment project is to provide shallow water and rock spawning habitat for fish and to restore and maintain the openings to the Barren Creek and Big Bay Creek embayments. The opening for Barren Creek would require maintenance dredging prior to the installation/construction of a rock revetment and Big Bay Creek would require the installation/construction of a rock revetment. Installation of the hard point structures would create habitat diversity for aquatic species such as fish and benthic invertebrates, especially the federally-listed endangered fat pocketbook pearly mussel.

Project Description and Rationale

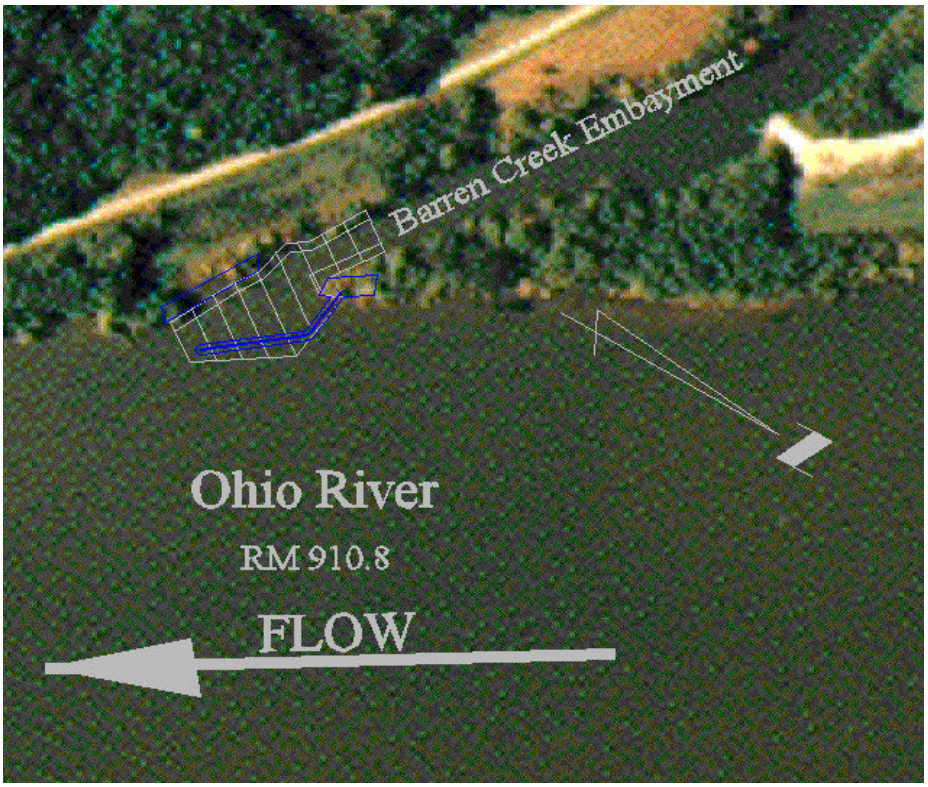
The Barren Creek and Big Bay Creek embayment project is designed to provide shallow water and rock spawning habitat for fish and to restore and maintain the openings to the Barren Creek and Big Bay Creek embayments.

Dredging: The opening for Barren Creek would require maintenance dredging prior to the construction of a rock revetment. The opening to the embayment has been filled with silt/sediment.

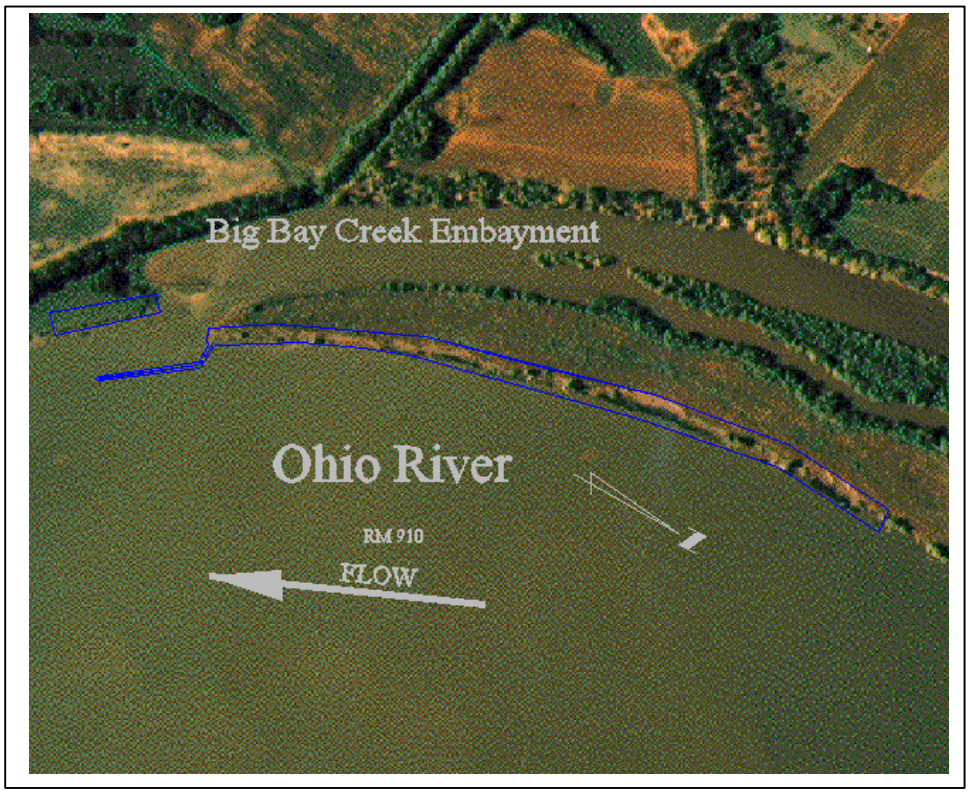
Rock Structures (Hard Point Structures): Installation of the hard point structures would: 1) Reduce the need for future embayment dredging by reducing sedimentation within the embayment mouths; and 2) create habitat diversity for aquatic species such as fish and benthic invertebrates, including the federally listed endangered fat pocketbook pearly mussel.

Revetment: Big Bay Creek would require the construction of a rock revetment to protect the eroding riverbank and provide rock habitat within the project area.

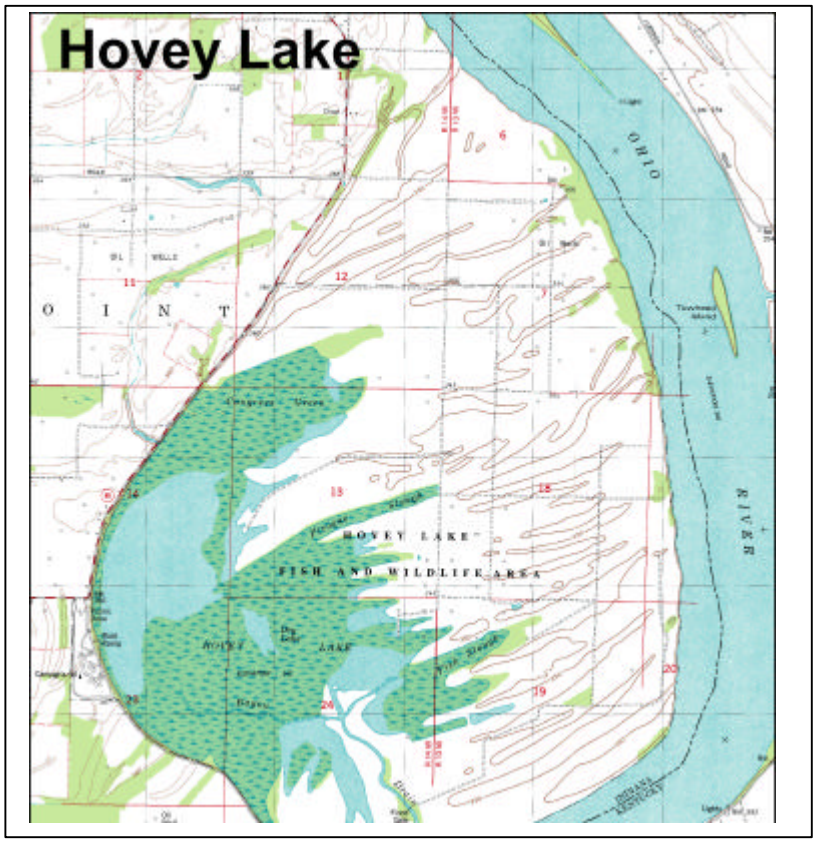
Project Diagrams



Big Bay Creek Embayment



4.1.e HOVEY LAKE RESTORATION & HOVEY LAKE HABITAT RESTORATION (IN-10/11)



Location

The proposed Hovey Lake Restoration Project area is located at the State of Indiana's Hovey Lake Fish and Wildlife Management Area (FWA). The Indiana Department of Natural Resources (IDNR) manages Hovey Lake FWA. The Hovey Lake FWA

encompasses an area that includes lands owned by the U.S. Federal Government as well as the State of Indiana. The proposed Hovey Lake Restoration Project includes restoration efforts on the FWA proper as well as on adjoining private lands.

The Hovey Lake project area is located in rural Posey County, Indiana approximately 10 miles south along State Route 69 from the town of Mt. Vernon, Indiana. The project site is located in the J. T. Myers Pool near Ohio River Miles 835-841. Hovey Lake is within the jurisdiction of the Louisville District, U.S. Army Corps of Engineers (USACE).

Project Goal

Hovey Lake is one of a few large Ohio River oxbow lakes remaining in the State of Indiana. Oxbow lakes, which are cut-off from the river except during periods of high river stage, are important spawning, nursery and feeding areas for riverine fishes. Oxbow lakes also provide important habitat for migratory waterfowl, wading birds and other wildlife.

Oxbow lakes, due to their cut-off nature and location within river floodplains, historically slowly fill in with sediments. Prior to establishment of commercial navigation and the construction of dams, the creation and loss of oxbow lakes was a natural event. New oxbows were formed whereas older oxbows gradually filled in with sediment and became terrestrial habitat, consequently oxbow habitats were typically always present within the river system. With the establishment of the navigation system on the Ohio River the natural process of oxbow lake formation has ceased. New Ohio River oxbow lakes are no longer being formed. Consequently, the remaining oxbow lakes have become unique habitats that the State of Indiana wishes to protect and restore as functioning aquatic ecosystems.

Project Description and Rationale

The specific goals of the Hovey Lake restoration project include two distinct elements designed to prolong the functional life of the aquatic ecosystem at Hovey Lake and to improve the fish and wildlife habitat within the project area. The principal elements of the Hovey Lake Restoration Project are:

Restoration of Oxbow Habitat

The backwater habitat within the Hovey Lake oxbow serves as reproductive, feeding, nursery, high water refuge, seasonal migration and over wintering habitat for may fish species including paddlefish. Maximum depth of the lake has decreased by at least 3 feet since 1976 when the J. T. Myers Locks and Dam were completed. The aquatic habitat at Hovey Lake will

be restored by dredging 50% of the 300-acre open basin to an average depth of 20 feet at normal pool.

Erosion/Sediment Control and Ohio River Bank Stabilization.

Hovey Lake receives sediment deposition during Ohio River flood events. When the Ohio River leaves its banks, it floods across the private agricultural land north of Hovey Lake and into Hovey Lake. The flood waters carry sediments from: a) floodplain scour in the farmed areas north of the lake, b) river borne sediments and c) heavy bank erosion along the Ohio River banks north of the lake. The flood induced sedimentation appears to have increased since 1995 after erosion control structures were installed on Slim Island and the logging of trees occurred on the land north of the lake. These events appear to have changed the direction of the flood current and increased sediment loading in Hovey Lake. Restoration activities to address this problem will include:

Shoreline Stabilization.

The Ohio River shoreline north of the lake is unstable and exhibits heavy bank erosion. This shoreline will be stabilized and bank erosion minimized by installing "A-jacks" structures. These structures will stabilize the banks and allow for natural re-vegetation and subsequent erosion control to occur.

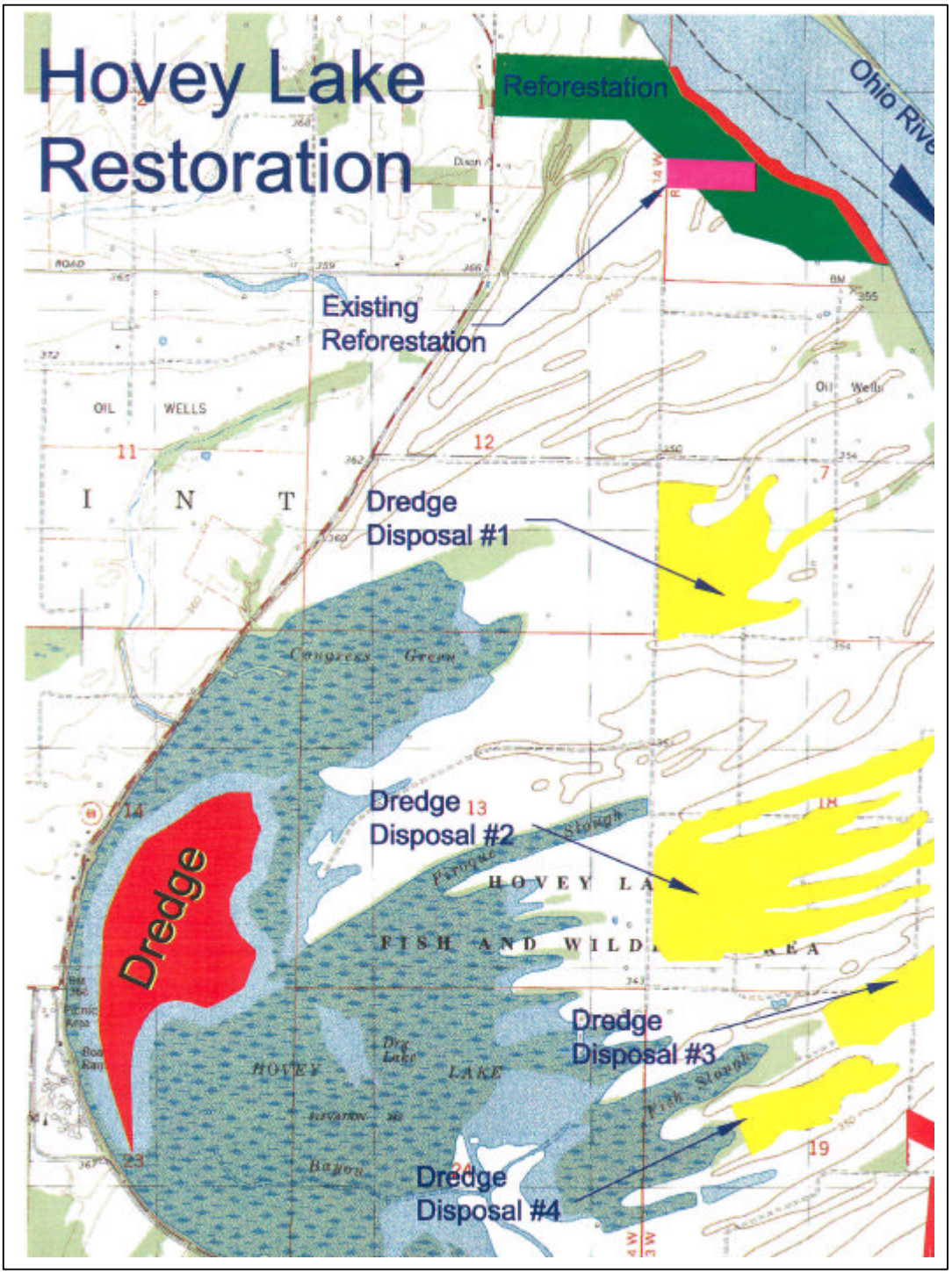
Reforestation.

Sedimentation reduction in Hovey Lake will be augmented via flood desynchronization. Reforestation of a large parcel near the Ohio River north of the lake will reduce erosion and slow floodwaters allowing the sediment load to be dropped north of Hovey Lake rather than in Hovey Lake.

The completion of these elements will reduce the loss of oxbow habitat and restore the aquatic ecosystem of Hovey Lake. Habitat restoration will also be augmented via Indiana Department of Natural Resources management efforts, which may include:

Working with adjacent landowners to implement a series of Best Management Practices to reduce erosion of farmland. Planting a series of forested/vegetated buffers between cropped fields to reduce lake sedimentation and reduce floodwater velocity. Use of some dredge material to create swamp rabbit refuge at Hovey Lake FWA. And capping of oil wells as necessary to reduce risk of contamination.

Project Diagram



4.2 Government or Sponsor Owned Land

As discussed earlier, this report is not seeking implementation authority for any specific projects at this time. As the result, no sponsors have been identified for any particular project. It is anticipated that potential sponsors will most likely be states or state agencies. The total array of potential sponsors are proposed to be similar to those for Section 1135 and 206 projects. As individual projects are submitted for approval, an assessment of sponsor land ownership will be made.

Land ownership at proposed projects might include lands owned by the Federal Government. An example within the five example projects is Hovey Lake where part of two spoil sites and all of a third site are located on Government land.

4.3 Facilities to be Relocated

At this time no public facilities requiring relocation have been identified. It is unlikely that projects of these types will require any significant relocations. However, each project submitted for implementation approval will undergo an evaluation of this issue. If applicable Attorneys' Opinions will be prepared in accordance with ER405-1-12 Chapter 12 and included in the Real Estate Plan in the planning document.

In some projects such as the Lewis County Bottomland Restoration example project, cemeteries may be encountered. It is anticipated that these cemeteries, and access to them, will be maintained and they will not require relocation.

The issue of relocation of towns is not applicable to any of the example projects nor is it anticipated that it will be an issue with any project proposed in the future.

4.4 Acquisition Criteria

4.4.a Summary Tables

The five example projects range from projects that are constructed/operated/maintained entirely in the river as the Upper Twin Creek T-Dikes Project to the acquisition and restoration of floodplain lands adjacent to the river such as the Lewis County Bottomland Restoration Project. The following Tables summarize the number of tracts, proposed estates, and the acreage involved for the five example projects:

Lewis County Kentucky Bottomland Restoration (KY-31)		
TRACTS	ESTATE	ACRES
14	Fee Simple	785

Upper Twin Creek T-Dikes (OH-06)		
TRACTS	ESTATE	ACRES
6	Perpetual Easement	42

Hannibal Dam Tail Waters Revetments (WV-40)		
TRACTS	ESTATE	ACRES
2	Permanent Easements	45
1	Temporary Work Area Easement	55
3	**Totals**	**100**

Barren Creek and Big Bay Creek Embayments (IL-09/10)		
TRACTS	ESTATE	ACRES
4	Fee Simple	3.06
1	Permanent Easement	0.52
5	**Totals**	**3.58**

Hovey Lake Restoration (IN-10/11)		
TRACTS	ESTATE	ACRES
3	Fee Simple	265
1	Temporary Work Area Easement	320
4	**Totals**	**585**

4.4.b. Issues and Criteria

The non-federal sponsor shall provide 35 percent of the cost of construction of any project carried out, including provision of all lands, easements, rights-of-ways and necessary relocations (LERRD) to accommodate construction, operation, and maintenance of the project. If the value of LERRD's exceeds 35 percent of total project cost the sponsor may be reimbursed for that portion in excess of 35 percent or the Government may assume financial responsibility for payment of the portion that exceeds 35 percent.

The Sponsor and the Government will enter into a Project Cooperation Agreement (PCA) prior to initiation of land acquisition by the sponsor. Generally, the sponsor is responsible for 100 percent of all operation and maintenance costs of the project.

For projects such as the Upper Twin Creek T-Dikes Project most of the real estate required for the T-dike features is located below the Ordinary High Water line within the Navigational Servitude. In so much as these projects restore certain habitats lost as the result of many reasons which include the static pools created by navigation structures, no further rights beyond the powers provided by the navigational servitude are proposed to be acquired. The cost estimates contained in this document still include some minimal costs for the acquisition of real estate. The bulk of these costs are administrative costs. Some minimal land value costs have been included to cover any potential acquisitions outside of the servitude area. The number of tracts expressed for this project reflects the number of riparian owners adjacent to this project and the potential that portions of the T-Dikes may be placed above the Ordinary High Water Line. This estimate and the number of tracts affected (if any) will be revisited on a project by project basis during each project's implementation study and after a more detailed design has been completed. An Attorney's opinion addressing the use of the servitude for these types of projects is being finalized and will be transmitted to CERE under separate cover. Should tracts need to be acquired for T-Dike or other similar structures, the non-standard estate shown as Exhibit E-6 of this REP would be proposed. Authority is being sought to use this estate for projects proposed in the future under this program.

For bottomland restoration projects such as the Lewis County Bottomland Restoration Project, fee simple would be the proposed estate. Again as each project is proposed for implementation the issue of the proper estate to be acquired will be revisited.

For projects that include dredging, each situation will be reviewed to determine whether the dredging is within the Navigational Servitude. If so, no additional rights are proposed to be obtained. If the dredging is outside of the servitude the standard channel improvement easement would be acquired. It is proposed to acquire temporary work area easements for the dredge disposal areas identified in the sample projects. These disposal areas in the example projects are proposed to be de-watered, re-seeded and are not required for future O&M.

Mineral, oil, and gas rights will not be acquired except in areas outside the Navigational Servitude where development would interfere with project purposes. Mineral rights not within the servitude will either be acquired where necessary (for project purposes) or will be reserved and subordinated to the Government’s right to regulate their development in a manner that will not interfere with the primary purposes of the project, including public access. Each proposed

project will be evaluated to determine where minerals should be acquired, reserved and subordinated, or in some cases left entirely outstanding. The multiplicity of ownerships in mineral interests, the variety of minerals and the different methods of mineral exploration, recovery and production make it impracticable to define in advance specific guidelines concerning the reservation of mineral interests and their subordination to primary project purposes in any given project. Implementation planning document real estate plans will fully discuss and consider the need for or extent of acquisition and/or reservation of mineral interests.

4.5 P.L. 91-646 Relocation Data

Public Law 91-646, Title II, authorizes payment of relocation benefits to persons displaced from their homes, businesses, or farms by federal and or federally assisted programs. Those benefits comprise moving expenses and replacement housing benefits that are separate from and in addition to the acquisition payments for real property. Estimated benefits for residential displacements include moving expenses and replacement housing. Relocation benefits for non-residential displacements are limited to moving expenses, including search expenses, and if applicable, reestablishment expenses.

Typical project lands are either within the river itself or are located on flood prone land that is unimproved. Projects that do affect improved lands do not involve significant numbers of displacements. It would be envisioned that local housing markets would be more than adequate to accommodate these displacements. Some areas are currently used as farmlands. Of the five example projects, two would involve payment of benefits under P.L. 91-646. The Hovey Lake project cost estimate includes a $25,000 estimate for relocation of a farm operation. The Lewis County Bottomland Restoration project includes an estimate of $389,000 for relocation benefits. This project includes the relocation of five single family homes and 9 moderate sized farm operations.

Any issues associated with last resort housing will be dealt with on a case by case basis and will be fully discussed in each individual project's implementation study document.

4.6 Environmental Issues

4.6.a National Environmental Policy Act (NEPA) Status

The decision document and environmental assessment are being integrated into one report per regulations in accordance with Appendix F of ER1105-2-100 dated 28 December 1990. Depending on the comments received during public and agency review either a Finding of No Significant Impact or an EIS will be prepared.

4.6.b Hazardous, Toxic, and Radioactive Waste (HTRW)

In accordance with U.S. Army Corps of Engineers (USACE) policy, all sites must be investigated prior to acquisition or construction to determine the potential presence of any materials that may be considered a HTRW contaminant. The following are findings related to each example project.

Lewis County Kentucky Bottomland Restoration (KY-31) - An Inspection of the project site and a search of environmental records relevant to the project site, and extended areas beyond, have revealed no evidence of recognized environmental conditions in connection with this project site.

Upper Twin Creek T-Dikes (OH-06) - An inspection of the project site and a search of environmental records relevant to the project site and extended areas beyond have revealed no evidence of recognized environmental problem conditions in connection with this project site.

Hannibal Dam Tail Waters Revetments (WV-40) - The HTRW data search area consisted of a one-mile radius surrounding the project site. There were no NPL sites, coal gas sites, or mines within a one-mile radius of the project area. An inspection of the project site and a search of environmental records relevant to the site, have revealed no evidence of recognized environmental conditions in connection with this project site.

Barren Creek and Big Bay Creek Embayments (IL-09/10) - An inspection of the project site and a search of environmental records relevant to the project site and extended areas beyond have revealed no evidence of recognized environmental problem conditions in connection with this project site.

Hovey Lake Restoration (IN-10/11) - Oil wells observed during the site inspection are a potential source of hydrocarbon contamination of groundwater from well casings that may have leaked over time. With the exception of potential hydrocarbon, and drill muds and cuttings contamination at petroleum production sites, the site inspection and search of environmental records have revealed no other evidence of recognized HTRW problems in connection with this project site.

4.6.c MITIGATION

Minor impacts associated with site dredging and material placement may occur during the construction of this project, however, no significant adverse impacts are expected. The use of best management practices and proper construction techniques would minimize adverse water quality impacts. No separable lands have been identified as being needed for mitigation purposes.

4.7 Acquisition Estimate and Schedule

Implementation study documents will need to be prepared as each project is proposed. The time and cost to prepare the Real Estate Plan for these documents will vary depending on the

size and nature of the proposed project. As an example the real estate study document for an uncomplicated T-Dike project could probably be accomplished in 3-4 months and for $15,000 or less depending on project size and when project design information was made available. For a project such as Lewis County the real estate study could take 8 to 12 months with costs of $30,000 or more.

Upon approval of the implementation study document, real estate acquisition schedules would be variable and based on the number of tracts involved, sponsor capabilities and input by the individual project sponsors. In the five example projects, estimated land acquisition times range from twelve months for the certification of a T-Dike project such as the Upper Twin Creek Project to 30 months for the 14 tract acquisition required for the Lewis County Bottomland Restoration Project.

Real estate land acquisition costs are equally variable, on the low end are T-dike projects with total real estate costs estimated at less than $55,000 to projects such as the Lewis County Bottomland Restoration Project with real estate costs estimated at $1,556,000. Detailed cost estimates are included for each of the five example projects as Exhibits E-1 through E-5 of this report.

4.8 Sponsor Capabilities

As discussed, this report is not seeking implementation authority for any specific projects at this time. As the result, no sponsors have been identified for any particular project. It is anticipated that potential sponsors will most likely be States or state agencies. The total array of potential sponsors are proposed to be similar to those for Section 1135 and 206 projects. As individual projects are submitted for approval, an assessment of sponsor capabilities will be made.

4.9 Summary

The purpose of the study is to determine the need for and potential benefits of establishing a program to improve degraded ecological resources of the Ohio River and its associated floodplain corridor. This Draft Real Estate Appendix is being included in the Interim Feasibility Report for the Ohio River Ecosystem Restoration Program. The projects described above are examples of the types of projects, which might be proposed under the proposed program. The discussions on aspects of real estate acquisition are intended to generally discuss issues that might be associated with projects of these types. Again, in all cases, specific real estate issues associated with individual projects proposed under this program will be fully discussed in an implementation planning report submitted after program authorization, funding, and project selection.

SECTION 5

EXHIBITS

Eco System Restoration
Real Estate Cost Estimate

Site: Lewis County (KY-31) Priority 1

Non-Federal Lands and Damages	
Land Payments (785 Acres)	$756,216
Contingency @ 25%	$189,054
Sub-Total	$945,270
Relocation Benefits	$389,000
Contingency @ 25%	$97,250
Sub-Total	$486,250
Non-Fed. Lands and Damages Total	$1,431,520
Non-Federal Admin. Costs	
14 Tracts @ $5,750/Tract	$80,500
Contingency @ 15%	$12,075
Total Non-Federal Admin.	$92,575
Total Non-Federal Cost (rounded)	**$1,524,000**
Federal Admin. Costs	
14 Tracts @ $2,000/Tract	$28,000
Contingency @ 15%	$4,200
Total Federal Admin. (rounded)	**$32,000**
Grand Total (rounded)	**$1,556,000**

Eco System Restoration
Real Estate Cost Estimate

Site: Upper Twin Creek T-Dikes (OH-06)

Non-Federal Lands and Damages	
Land Payments (42 Acres)	$600
Contingency @ 25%	$150
Sub-Total	$750
Relocation Benefits	$0
Contingency @ 25%	$0
Sub-Total	$0
Non-Fed. Lands and Damages Total	$750
Non-Federal Admin. Costs	
6 Tracts @ $5,750/Tract	$34,500
Contingency @ 15%	$5,175
Total Non-Federal Admin.	$39,675
Total Non-Federal Cost (rounded)	**$40,000**
Federal Admin. Costs	
6 Tracts @ $2,000/Tract	$12,000
Contingency @ 15%	$1,800
Total Federal Admin. (rounded)	**$14,000**
Grand Total (rounded)	**$54,000**

Eco System Restoration
Real Estate Cost Estimate

Site: Hannibal Dam Tailwaters (WV-40)

Non-Federal Lands and Damages	
Land Payments (100 Acres)	$3,000
Contingency @ 25%	$750
Sub-Total	$3,750
Relocation Benefits	$0
Contingency @ 25%	$0
Sub-Total	$0
Non-Fed. Lands and Damages Total	$3,750
Non-Federal Admin. Costs	
3 Tracts @ $5,750/Tract	$17,250
Contingency @ 15%	$2,588
Total Non-Federal Admin.	$19,838
Total Non-Federal Cost (rounded)	**$24,000**
Federal Admin. Costs	
3 Tracts @ $2,000/Tract	$6,000
Contingency @ 15%	$1,500
Total Federal Admin. (rounded)	**$7,500**
Grand Total (rounded)	**$31,500**

Eco System Restoration
Real Estate Cost Estimate

Site: Barren Creek and Big Bay Creek Embayments (IL-09/10)

Non-Federal Lands and Damages	
Land Payments (3.58 Acres)	$3,350
Contingency @ 25%	$838
Sub-Total	$4,188
Relocation Benefits	$0
Contingency @ 25%	$0
Sub-Total	$0
Non-Fed. Lands and Damages Total	$4,188
Non-Federal Admin. Costs	
5 Tracts @ $5,750/Tract	$28,750
Contingency @ 15%	$4,312
Total Non-Federal Admin.	$33,062
Total Non-Federal Cost (rounded)	**$37,000**
Federal Admin. Costs	
5 Tracts @ $2,000/Tract	$10,000
Contingency @ 15%	$1,500
Total Federal Admin. (rounded)	**$12,000**
Grand Total (rounded)	**$49,000**

Eco System Restoration
Real Estate Cost Estimate

Site: Hovey Lake Restoration (IN-10/11)

Non-Federal Lands and Damages	
Land Payments (585 Acres)	$708,425
Contingency @ 25%	$177,106
Sub-Total	$885,531
Relocation Benefits	$20,000
Contingency @ 25%	$5,000
Sub-Total	$25,000
Non-Fed. Lands and Damages Total	$910,531
Non-Federal Admin. Costs	
4 Tracts @ $5,750/Tract	$23,000
Contingency @ 15%	$3,450
Total Non-Federal Admin.	$27,450
Total Non-Federal Cost (rounded)	**$938,000**
Federal Admin. Costs	
4 Tracts @ $2,000/Tract	$8,000
Contingency @ 15%	$1,200
Total Federal Admin. (rounded)	**$9,000**
Grand Total (rounded)	**$947,000**

OFFSHORE REVETMENTS, "T" DIKES AND PLACEMENT OF BOULDERS EASEMENT

A perpetual and assignable easement and right-of-way in, on, over and across (the land described in [Schedule A] [Exhibit A]) (the land described below) (Tracts Nos. ___, ___ and ___) for the location, construction, operation, inspection, maintenance, alteration and repair of (submerged) (offshore revetments) ("T" Dikes) (Placement of Boulders) and to place thereon dredge, spoil, boulders, stone and other materials to provide aquatic habitat diversity, velocity shelters for fishes, and off-shore structure for recreational fishing; together with the right to trim, cut, fell, and remove therefrom all trees, obstruction and other vegetation, structures or obstacles, dredge, spoil and fill material; to shape and grade said land to desired slopes and contour; to do any other work necessary and incident thereto; and together with the right of ingress and egress for such work and the above described purposes.