A. Applicant Information

Name of Organization: U.S. Army Corps of Engineers, Carlyle Lake – 801 Lake Road, Carlyle, IL 62231

Contact Information: Robert Wilkins, Operations Manager, (618) 594-2484, Robert.Wilkins@usace.army.mil

Name of Friends of Reservoirs: N/A

B. Project Information:

Title: Carlyle Lake Point #1 Fisheries Habitat Improvement Project

Location: Carlyle Lake, Illinois / Temperate Plains Region

GPS Coordinates: 38 37'40.43"N 89 21'04.40"W

U.S. Congressional District: 15th Congressional District of Illinois

Target species:

- Largemouth Bass
- Black and White Crappie
- White Bass
- Gizzard Shad
- Channel Catfish
- Many other aquatic species will also benefit significantly

Project objective(s):

- Stabilize the shoreline at a critical area of the reservoir and lessen the impact of siltation cause by shoreline erosion
- Create a littoral zone to enhance all aquatic species survival
- Create a vital staging/transition area for all fish species connecting deep water habitat to suitable, shallow spawning areas
- Create a reef with artificial structure to provide cover and allow for the transition into and from the spawning area

Estimated on-the-ground start and end dates: 1 June 2017 – 1 October 2018

Amount of grant and estimated total cost of project: The Carlyle Lake Project is requesting $40,000 in grant funding to complement $25,000 from the project and $5,000 from the Illinois Department of Natural Resources Division of Fisheries through in-kind services. Other stakeholders and volunteer groups will provide in-kind services through volunteer work and donation of materials. Total cost of project is estimated to be $86,000.

List of partners:

- Carlyle Lake Project (USACE)
- Illinois Department of Natural Resources (IDNR) Fisheries
- Carlyle Lake Association
- The City of Carlyle
- McKendree University Bass Fishing Team
- Let's Talk Fishin' – Alan Crocker

- Carlyle High School Biology Club and Bass Fishing Team
- Highland High School Bass Fishing Team

C. Project Description (largest portion of proposal):

1. **Project overview:**

Carlyle Lake, the largest man-made lake in Illinois, is located in South Central Illinois, approximately 50 miles east of St. Louis, Missouri. Construction of the lake began in 1958 and was completed in 1967. The lake is 12 miles long and 1-3 miles wide with approximately 26,000 acres of surface water. Carlyle Lake is a multi-purpose lake, these purposes include downstream flood control, recreation, water supply, environmental stewardship, and downstream navigation.

Although flood control is a major purpose of Carlyle Lake, severe impacts of holding pool levels higher than normal (445.0 NGVD summer pool) in the reservoir have resulted in significant shoreline erosion and habitat loss in shallow water spawning area as well as deep water habitat. To help mitigate for poor spawning conditions and fluctuating water levels during the spawn, five brood rearing ponds are managed by the Corps of Engineers and the Illinois Department of Natural Resources (IDNR). These ponds are used primarily to raise crappie (black and white) and largemouth bass. Although significant numbers of fingerling fish are raised in the brood ponds (approximately 20,000 per pond each year) the survival rate of these young fish are low due to lack of suitable habitat and cover in the lake.

The project being proposed is to stabilize a main lake point (Point #1) that is located on the southern end of Carlyle Lake and create a reef of artificial structure adjacent to the point giving fish protection during a critical transition from deep to shallow water and vice versa. Not only will this help support recruitment of fingerling fish but it will create another area that is favorable for spawning to occur. Stabilization will be provided by placing 400 pound rip rap (600 ton) as a barrier around the existing clay bank of the point. The stone toe protection will be approximately 600’ in length, 10’ feet wide at the base, with a top elevation of 450.0 NGVD (five feet above normal summer pool). The toe of the structure will be at elevation 443.0 NGVD (normal winter pool) to allow approximately two feet of rock structure in the water for spawning purposes during a normal pool year. The rip rap will be place with a 20’ track hoe and hauled by a tandem dump truck through an existing roadway leading to the point.

The reef that will be constructed adjacent to the rip rap area will be made up of artificial fish structures. These structures (approx. 250) will include Honey Hole trees and stumps, spider blocks, and some rough cut oak cribs. Over the past 15 years, these structures have been tested and proven in Carlyle Lake and will remain in place for many years to support algae growth, provide cover, and attract all fish species. The structures will be built and assembled by students from local college and high school bass fishing teams, and employees from the City of Carlyle

Parks and Recreation Department. All structures will be placed in the lake by IDNR Fisheries Staff, COE employees, and other partners in the project. The IDNR will utilize a fisheries habitat barge to ensure that all structures placed will form a reef in water depths ranging from five to 15 feet deep. A side scan sonar with down imaging will also be used to get structure placement precise.

This project is designed to stabilize a critical shoreline at Carlyle Lake and to improve and enhance the aquatic habitat simultaneously. By reducing the rapid shoreline erosion and amount of sedimentation in the cove adjacent to the point, it will also improve the water quality in the area. This bank stabilization coupled with the addition of a large reef of artificial structures will not only enhance the area but will also make the area more productive and user friendly.

Following completion of the shoreline stabilization, the disturbed area will be seeded with a native grass species and straw placed over the area to prevent erosion and runoff until the grasses are established.

2. **Monitoring plan overview:**
   Monitoring the project will be accomplished in two phases. Phase one will be during construction and phase two will monitor the project once the construction is completed. Phase one will be directed by Carlyle Lake team members to ensure that the contractor is following all plans and that work is completed properly. Phase two will continue for several years after completion, although the finished product will be relatively maintenance free and have a long lifespan monitoring for fish productivity and usage.
   Every year in the spring and fall, the Illinois Department of Natural Resources Division of Fisheries conducts electroshocking surveys to determine the overall health of fish populations in Carlyle Lake. This area will provide biologists an additional site to monitor because large populations of all fish will utilize the area. Other methods of monitoring will include creel surveys, fishing tournament reports, and word of mouth.

3. **Outreach plan overview:**
   Interpretive and environmental stewardship outreach and stakeholder involvement is a mission essential duty for the Carlyle Lake Project. The lake has a significant economic impact to the area year round with an average visitation of approximately 3 million visitors, $580,000 in revenue collected, and $67.6 million in visitor spending within 30 miles of Carlyle Lake. The lake hosts 40 – 45 fishing tournaments annually solidifying that fishing has a great impact on the lake and surrounding community. The City of Carlyle and Carlyle Lake have been the host site for the Illinois High School Association (IHSA) State Bass Fishing Finals since its inaugural year in 2009 (the contract was recently extended through the year 2021). Other professional fishing tournaments held at Carlyle Lake include:

the FLW College Central Conference Championship, the Illinois Bass Federation Northern Divisional Championship, and the 2017 Crappie Masters Tournament Trail just to name a few.

Outreach to the public and lake users will be provided through many different sources including: social media, websites, news releases, word of mouth, etc. The Carlyle Lake Facebook page has over 11,000 followers and provides updates on the lake, while the website offers an updated map of fish attractor locations throughout the lake, this area will be added with GPS coordinates to allow anglers an excellent opportunity year round.

Interpretive outreach programming on environmental stewardship efforts at Carlyle Lake are popular with local schools throughout the area. Once the project is completed, it will serve as an educational area to offer programs and explain the importance of creating areas of great fisheries habitat.

4. **Provisions to protect the restoration project site after project completion**
   The project itself will be basically self-sustaining once everything is completed. The area on the shoreline will be monitored and maintained through regular operation and maintenance.

5. **List of required permits**
   The project will require a Nationwide Section 27, Aquatic Habitat Restoration, Establishment, and Enhancement Activities. Arrangements have been made with the Regulatory staff in the St. Louis District Office to issue the necessary permits if the grant funding is received.

6. **Project timeline.**
   June 2017 – August 2017: Coordinate with IDNR Fisheries Staff and other partners involved to finalize plan.

   September 2017 – November 2017: Establish and award contracts for equipment contractor and rock contractor.

   December 2017 – February 2018: Begin construction phase of project when lake is at winter pool. This will include shaping of the shoreline area and placement of rip rap structure.

   March 2018 – June 2018: Purchase and construction of aquatic habitat structures. This phase is longer to allow time for volunteer groups to organize times and dates that fit their schedule and maximize group numbers.

   August 2018 – October 2018: Placement of aquatic habitat structures to build the aquatic reef. This phase may be completed earlier, if lake levels are favorable.

D. Budget:

1. **Amount requested -** $40,000
2. **Amount of in-kind contributions –** $9,840

Categories	**Partner Contribution Amount**	**Cash or In-Kind**	**Timeline (anticipated date of expenditures)**
Reservoir Fisheries Habitat Partnership			
Administrative/Technical Services			
Construction Costs/Materials	$40,000		June 2018
Labor (paid)			
Labor (volunteer)			
Miscellaneous (outreach materials)			
Partner B **USACE – Carlyle Lake Project**			
Administrative/Technical Services	$2,000		Throughout Project
Construction Costs/Materials	$25,000		June 2018

Labor (paid)	$2,000		Throughout Project
Labor (volunteer)		$720	Throughout Project
Miscellaneous (outreach materials)			
Fish Locator Maps	$1,000		August 2018
Partner C (name) **IDNR – Division of Fisheries**			
Administrative/Technical Services	$5,000		Throughout Project
Construction Costs/Materials			
Labor (paid)			
Labor (volunteer)			
Miscellaneous (outreach materials)			

Partner D **Carlyle Lake Association**			
Administrative/Technical Services			
Construction Costs/Materials	$1,300		June 2018
Labor (paid)			
Labor (volunteer)			
Miscellaneous (outreach materials)			
Partner E **City of Carlyle**			
Administrative/Technical Services			
Construction Costs/Materials			
Labor (paid)		$1,920	Throughout Project
Labor (volunteer)			
Miscellaneous (outreach materials)			

Partner F **Let's Talk Fishin' – Al Crocker**			
Administrative/Technical Services			
Construction Costs/Materials			
Labor (paid)			
Labor (volunteer)		$1,920 (80)	Throughout Project
Miscellaneous (outreach materials)			
Let's Talk Fishin' Radio Show		$960 (40)	Throughout Project
Partner G **McKendree University Bass Fishing Team**			
Administrative/Technical Services			
Construction Costs/Materials			
Labor (paid)			
Labor (volunteer)		$1,440 (80)	Throughout Project
Miscellaneous (outreach materials)			

Partner H **Highland H.S. Bass Team**			
Administrative/Technical Services			
Construction Costs/Materials			
Labor (paid)			
Labor (volunteer)		$1,440 (80)	Throughout Project
Miscellaneous (outreach materials)			
Partner I **Carlyle H.S. Bass Team**			
Administrative/Technical Services			
Construction Costs/Materials			
Labor (paid)			
Labor (volunteer)		$1,440 (80)	Throughout Project
Miscellaneous (outreach materials)			
Total Direct Costs	**$76,300**	**$9,840**	

Volunteer labor should be calculated at $10/hr. for age 16 and under; 18/hr. other volunteers; agency staff labor rates @ $24/hr.

4. **Budget narrative:**
The grant money requested will be coupled with the funding from the project and will be spent exclusively on equipment (trackhoe, dump truck and dozer), 400 pound rip rap, and materials for fish structures. Contractors from the Carlyle Lake equipment rental and rock contracts will be utilized to maximize available funds. Technical and outreach costs will be covered by the USACE Carlyle Lake Project. Labor will be provided by the partnering groups through volunteers and members. The Illinois Department of Natural Resources will provide a habitat barge for the placement of fish structures and provide technical expertise.

Supporting materials

1. Map of the proposed project site
2. Aerial map of the site location
3. Photos of existing shoreline erosion
4. Letters of support

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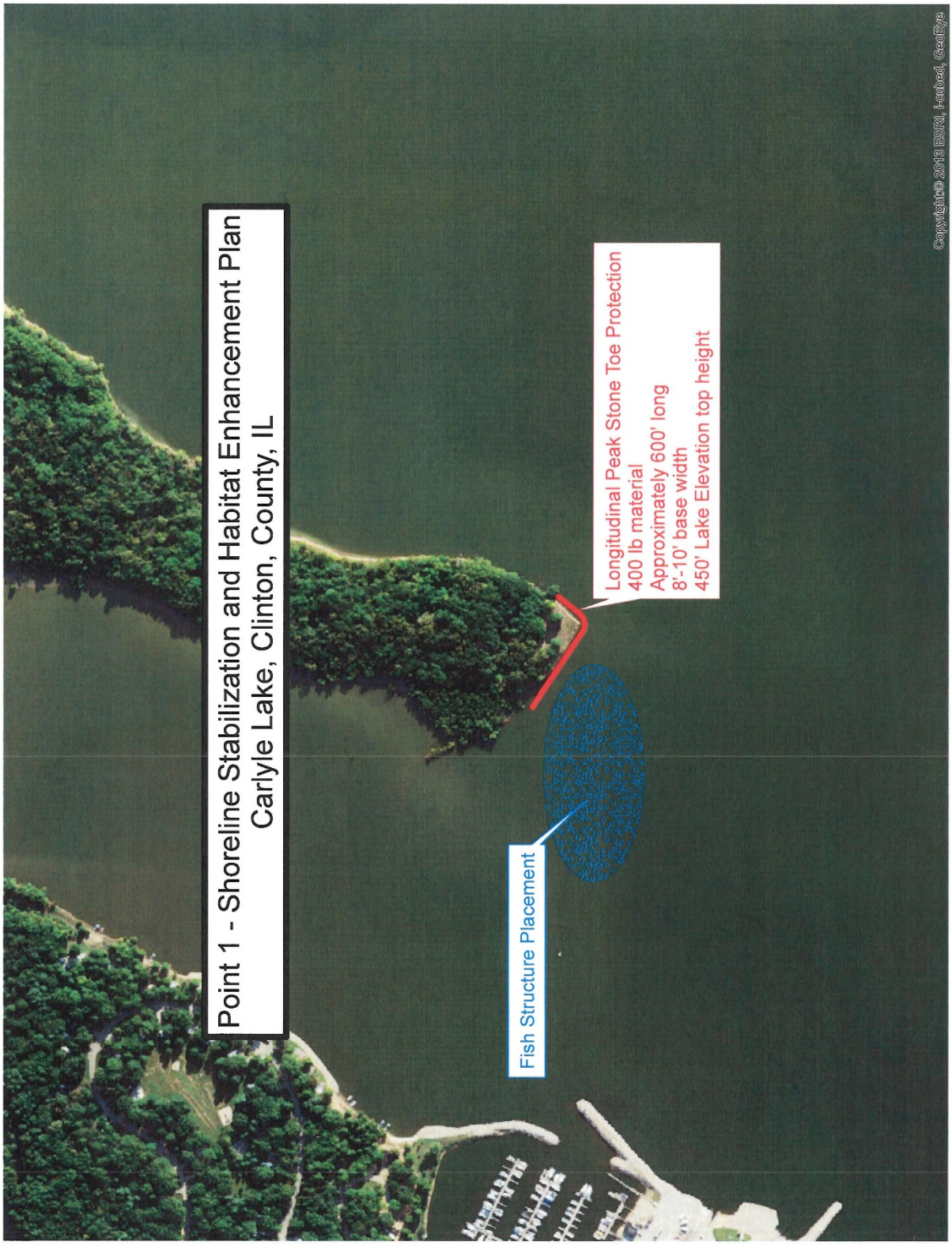
Map of the proposed project site



Aerial map of the site location

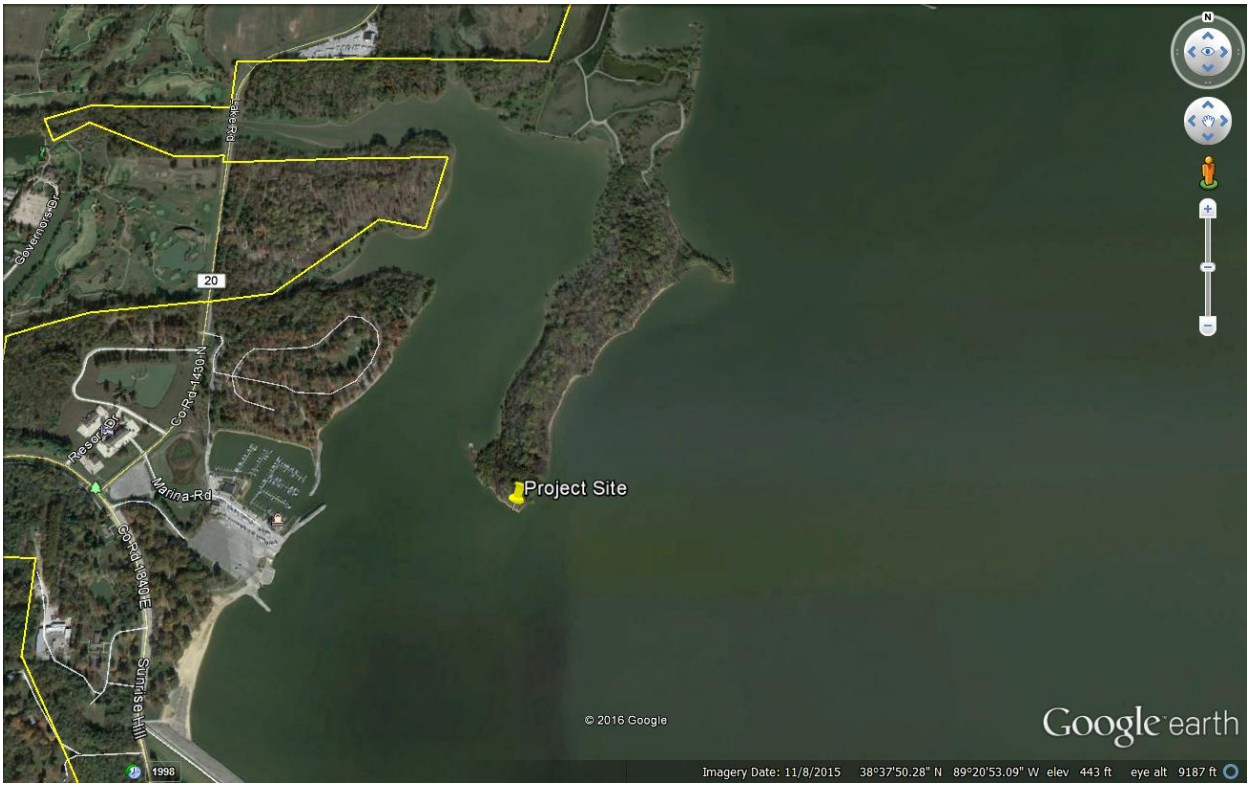


Photo of existing shoreline erosion (north view)

Photo of existing shoreline erosion (west to east view)

Supporting Letter from IDNR Division of Fisheries

ILLINOIS DEPARTMENT OF NATURAL RESOURCES

Illinois Department of
Natural Resources

One Natural Resources Way Springfield, Illinois 62702-1271
www.dnr.illinois.gov

Bruce Rauner, Governor
Wayne A. Rosenthal, Director

August 29, 2016

Mr. Robert Wilkins, Operations Manager
U.S. Army Corps of Engineers
Carlyle Lake/ Kaskaskia River Project
801 Lake Road
Carlyle, IL 62231

Dear Mr. Wilkins,

The Division of Fisheries in the Illinois Department of Natural Resources (IDNR) supports the Reservoir Fisheries Habitat Partnership proposal for the Carlyle Lake/ Kaskskia River Project.

If this project is awarded funds, then as a partner with the U.S. Army Corps of Engineers in the fisheries management of Carlyle Lake, the Division of Fisheries will commit to support of the project and provide non-federal match in-kind contributions by providing administrative and technical services to the project at an estimated $5,000.

We look forward to working with the U.S. Army Corps of Engineers on this project to increase and improve the fisheries habitat of Carlyle Lake. If you have questions or require more information, please contact Fred Cronin, the IDNR Carlyle Lake Fisheries Biologist, in the Division of fisheries, Office of Resource Conservation at 618-931-4217.

Sincerely,

Dan Stephenson

Dan Stephenson, Chief
Division of Fisheries