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Conservation Plan for Incidental Taking of a Threatened Species

- 1) a) Legal Description: Mississippi River, left bank, approximate river mile 518.8, in Section 32, Township 22 North, Range 3 East, near Fulton, in Whiteside County, Illinois.
b) Biological data on affected species
Please see attached data as provided by the department on:
 - Black Sandshell (*Igumia recto*)
 - Butterfly (*Ellipsaria lineolata*)
c) Hydraulic dredging of river bottom in location of barge way cut 80' wide x 150' from shoreline into riverbed. Estimated dredge area in river is 15,750 sq ft with 4 to 1 slope.
d) Based on previous survey from the IDNR on October 29, 2001 and our habitat survey conducted on January 22, 2002 enclosed, we anticipate minimal loss of species due to the existing poor habitat.
- 2) a) To minimize the area affected we have down sized the original scope of our project from a 100' wide cut to an 80' wide cut. Based on percentages of mussels found in relation to the area covered from the initial IDNR Survey and in the area that we will be dredging we estimate that 3 Black Sandshell and 6 Butterfly species could be lost. This is based on a habitat area of 15,750 sq. ft. being dredged. In the area of the habitat survey of approx. (80,000 sq. ft.) we estimate that 15 Black Sandshell and 30 Butterfly species might be found given the previous data collected.
b) We will require the towboat operators to approach and maintain a low throttle into and out of barge canal way to minimize bottom disturbance and siltation. We will also minimize the number of trips in and out of the harbor during the loading operation.
c) We have hired Helms & Associates to conduct a mussel survey and pre-project silt deposition and particle size study within and downstream of the proposed cut including a buffer zone upstream and outward prior to implementing any relocation efforts. Mr. Helms is a malacologist holding a valid IDNR scientific collecting permit and is in process of obtaining an IDNR Endangered Species



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Permit. After the surveys we will relocate all freshwater mussel species found and moved to a more suitable location in the surrounding habitat as pre-approved and permitted by the IDNR. We will also be using an environmental friendly dredging method as described in our Corps and EPA permits using silt curtains that will also minimize siltation.

- d) We have and will contract with Helms and Associates a 10-year plan to monitor and measure the effects of the proposed action on the mussel habitat affected. Please see attached detailed monitoring plan as submitted by Helms and Associates.
- e) We are an ISO 9000 certified company, which requires our management to keep up with current laws and regulations in all aspects of our business. Any changes require us to review and implement new practices to keep in compliance with our prior commitments. We will be working closely with Helms & Associates as they monitor the habitat per our 10-year plan attached. All reports produced by Helms and Associates will be reviewed by Ashton Engineering to insure all proper data and monitoring is complete in the report before being forwarded to the IDNR within 45 days after the completion of fieldwork. Any changes or unforeseen problems will be addressed as they are found.
- f) The current conservation plan costs are estimated at a maximum \$165,000 for the 10 year period including relocation of threatened species and allowance for a 3%/year rate increase on future monitoring activities. We currently have sufficient cash assets and would set up an escrow account to cover the future cost estimate of the balance needed to monitor as proposed by Helms and Associates. This will be determined after the final survey is complete and upon the review of the IDNR Department as to what measures and actions are appropriate given the new data.
- 3) The alternative action would have been to construct a cell in the riverbed upstream from the existing site approx 1,000' (near an existing barge harbor). This alternative was not selected because it would have required road construction and extensive fill in both the flood way and flood plain that affected a greater area of wetlands than the existing site, plus it would not open up the benefit of the deep harbor for fish habitat. The original plan was to excavate a barge access channel with a 100' wide bottom. The bottom width was changed to 80' and will result in less disturbance of mussel habitat. The fabrications are too large to be shipped by rail or over-the-road trucks. A "No Action" alternative would result in a large economic loss to the Fulton area.
- 4) The same evidence of mussel shells on the beach that lead the IDNR to do their survey of the area downstream of our proposed cut exists downstream of the existing Fulton Barge Harbor (upstream). This along with statements of local recreational and



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commercial fisherman that they have caught mussels on their lines in the barge way and down stream from the Fulton Harbor, indicates that the proposed taking will not reduce the likelihood of the survival of these threatened species. The Fulton Harbor is a high use grain and fertilizer terminal and large pleasure boat dock which has not deterred the growth of mussels in that area nor downstream. From the Habitat Survey recently completed by Helms & Associates there is a sparse mussel population in an existing poor environment. The change we are making in this habitat will not destroy the current environment and therefore will have minimal effect on these species. Though there may be a small localized area of more dense population 300 feet down stream along the shoreline the ability to grow this resource is very limited due to the existing surrounding environment. Considering there is a similar area of mussel population downstream from the current Fulton Barge harbor it is very doubtful that our operation will have any detrimental effects to the population in question.

5) a) Eric N. Johnson

b) President of J. T. Cullen Co. Responsible for securing contracts of harbor construction and leasing of dock for this and future projects. Current scheduled construction in process with completion date of April 12, 2002. Dredging activities are on hold in river until river reaches 40 degrees to allow for final mussel survey and completion of permit from IDNR.

c) Resolution of Board of Directors of J. T. Cullen Co., Inc. giving President Eric N. Johnson full and complete legal authority to carry out his respective obligations and responsibilities under the Conservation Plan.

d) We give our assurance of compliance that all Federal, State and Local regulations pertinent to the proposed action and to execution of the Conservation Plan will be followed.

e) Copy of November 28, 2001 letter from Fish and Wildlife Service attached.

Respectfully submitted,

Eric N. Johnson, President
J. T. Cullen Co., Inc.
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PROJECT PROPOSAL

(Attachment 1)

I. PROJECT OBJECTIVE

This proposal is for mussel projects associated with a barge docking construction site. The Illinois Department of Natural Resources (IDNR) conducted a preliminary mussel survey near the site in October 2001 and found two species of state listed mussels (Butterfly, *Ellipsaria lineolata* and black sandshell, *Ligumia recta*). Both are "Threatened" in Illinois. The finding of these two threatened species by the IDNR triggered the need for preparing a Conservation Plan for the Incidental Taking of Endangered or Threatened Species.

The federally listed higginsii pearly mussel (*Lampsilis higginsii*) is known to occur in Whiteside County, Illinois, however, the IDNR survey did not produce any federally listed species, and the higginsii pearly mussel is not a primary target for concern at this time.

We are proposing a four-step plan to accommodate mussel related needs at the site. These steps include:

1. A mussel habitat survey,
2. A baseline mussel pre-construction mussel survey,
3. Mussel relocation, and
4. Mussel monitoring.

II. PROJECT LOCATION

The project is located along the East (left descending) bank of Mississippi River Pool 14 at approximate River Mile 518.8 in Section 32, Township 22North, Range 3 East, near Fulton, in Whiteside County, Illinois.

The primary target area is a proposed channel with a base width of 80 feet (200 feet wide at the shoreline) and projects into the river 150 feet. Steps 1, 2, and 4 (Habitat survey, Mussel survey, and Monitoring) include this reach plus an additional distance of 50 feet upstream, 50 feet riverward, and 150 feet downstream to include a buffer zone around the project site. The pre-project mussel survey and subsequent mussel monitoring surveys (Steps 2 and 4) will extend downstream an additional distance to include the area surveyed for mussels by the IDNR October 2001. Mussel relocation (Mussel relocation) will be confined to the dredge channel.

III. TECHNICAL APPROACH

Step 1 – Habitat Survey

The habitat survey was a preliminary step in determining project needs required for the ultimate protection of mussels listed as threatened or endangered by Illinois at this site. This step was completed January 22, 2002 (Helms & Associates 2002). It was concluded that the area was of marginal quality as mussel habitat. Substrate was predominantly sand and mud. A sparse population of mussels, however, was observed. The later steps must wait until water temperature reaches 40 degrees F, a requirement for safe handling of mussels.

Step 2 – Mussel Survey

Survey methods for the baseline pre-construction mussel survey will be consistent with procedures commonly used to survey for mussels. A diver will collect replicate quarter-

meter quadrate whole substrate samples at intervals arranged in transects over the survey area.

The baseline pre-project mussel survey area is 450 feet long and extends into the river 200 feet. Within this area, we will sample along ten (10) transects (at 50-foot intervals) extending perpendicular from shore. Samples will be collected at four (4) locations (at 50-foot intervals) along each transect. Replicate samples will be collected at each location (Table 1). Thus, 80 quarter meter samples will be collected (10 transects x 4 locations/transect x 2 replicates = 80 samples).

Table 1. Proposed sample locations and numbers of quarter meter whole substrate samples to be examined for mussels.					
Transect	Transect Location (from center of channel)	Location along transect and distance from shore			
		A (50 ft)	B (100 ft)	C (150 ft)	D (200 ft)
1	150 ft upstream	2	2	2	2
2	100 ft upstream	2	2	2	2
3	50 ft upstream	2	2	2	2
4	Center of channel	2	2	2	2
5	50 feet downstream	2	2	2	2
6	100 feet downstream	2	2	2	2
7	150 feet downstream	2	2	2	2
8	200 feet downstream	2	2	2	2
9	250 feet downstream	2	2	2	2
10	300 feet downstream	2	2	2	2

Supplemental collections will include the diver searching visually and/or by hand during his movements along the bottom. In addition, the shoreline will be searched by a surface crew to note any "fresh dead" shells of significance.

Measurement of silt deposition will be conducted at four locations along a transect downstream of the proposed dredge cut. Substrate will also be collected at these locations and submitted to an approved laboratory for particle size analysis.

Mussel Sampling Protocol

Sampling protocol will be quantitative and qualitative, following that of Miller and Payne (1994). Helms & Associates has used this methodology in numerous other Mississippi River and smaller river mussel surveys. Each sample will consist of a quarter-meter whole substrate collection. Substrate will be removed to a depth of 10.2 to 15.2 cm (4 to 6 inches) and brought to the surface where the sample will be sieved through a series of screens, the smallest mesh of which will be 6.35 mm (1/4 inch). Material retained on each screen will be examined for live mussels. All mussels encountered will be identified, enumerated and measured. Nomenclature will follow Turgeon, et al. (1998). Captured mussels will be kept in shaded ambient water during sample processing. Ancillary data will include substrate type, depth, temperature, etc.

Mussels will be handled in a manner acceptable to the US Fish and Wildlife Service and the Illinois Department of Natural Resources and will include the following guidelines for handling endangered species described in our federal permit (TE839777-8).

1. Work will not be conducted when air temperatures are at or below 32 degrees Fahrenheit, nor when water temperatures are at or below 40 degrees Fahrenheit.
2. Returned specimens of *Lampsilis higginsii* (and all State T & E species) will be hand placed into the substrate in a natural position (posterior end protruding above the bottom and pointing upstream).
3. Specimens will be held in mesh bags suspended in the water or held in containers of water that is changed every hour (every half hour when air temperatures are at or above 87 degrees Fahrenheit) and replaced with water freshly taken from the water where the mussels were collected.
4. Specimens will be returned unharmed within two hours following collection to within 3 meters (10 feet) of the exact locality from which they were taken. At the request of the Illinois DNR and/or the US FWS, specimens may be relocated.
5. Live specimens that cannot be identified at the survey site will be photographed for identification purposes and returned to the substrate.
6. All live specimens of T & E species taken will be measured (length and height) and, if possible, sexed and aged. No intrusive activities are permitted.
7. No live specimens may be removed from the survey sites, except for specimens encountered in circumstances which would reasonably be expected to result in stranding due to low or receding water. Such specimens may be moved to a location coordinated with and approved by the appropriate Fish and Wildlife Service Ecological Services Field Office.
8. Freshly dead or accidentally killed specimens will be preserved according to standard museum practices for fleshy tissue preservation, properly identified or indexed. Old dead shells may be retained without preservation. All dead specimens will be sent to a public scientific or educational facility or museum in the state in which they were collected or to the state natural resource agency.

If an endangered species is encountered during sorting, it will be processed immediately. By giving priority to endangered species as they are encountered, they should not be in captivity for more than 30 minutes.

Step 3 – Mussel Relocation

Relocation methods will be consistent with procedures commonly used for relocating mussels. A team of divers will cover the area in a systematic fashion and remove all mussels from the site. Since the divers will be collecting under near zero visibility circumstances,

portions of the area may require them to collect the entire surface layer of substrate and pass it to the surface for examination. Based on the size of the area and prevailing substrate, it is estimated that relocation will require a minimum of five to ten (5 to 10) days of intensive field effort.

The area will be searched in 5-foot increments from shore until the entire construction zone is covered. A rope-grid similar to a rope ladder will be used to define the site and guide the divers. The rope ladder anchored to the bottom will extend across the area to be examined for mussels. After the divers have searched its length, one side will be released from its anchors and flipped making an adjoining transect ready for search. Effort will be timed and data will be reported separately for each 5-foot increment.

Mussels will be enumerated by species and transported to a suitable location (either upstream or downstream) outside the construction zone. The exact location will be coordinated with the IDNR and/or the US Fish and Wildlife Service Rock Island Office.

All specimens of the endangered *Lampsilis higginsii* and species listed as threatened or endangered in Illinois will be handled in accordance with permit requirements and deposited at a release site coordinated with the IDNR and/or the US Fish and Wildlife Service.

Step 4 – Mussel Monitoring

Mussel monitoring at the site will be conducted annually beginning the year following construction and will continue for a period of ten (10) years. Each monitoring will be conducted by sampling the same locations using identical procedures described in the baseline pre-construction mussel survey described above. Substrate collection for particle size analysis and measurement of silt deposition at the surface will also mimic procedures used in the pre-project survey. Collecting in the same locations and using the same sampling procedures will assure comparability of results.

Any threatened or endangered mussel species encountered within the barge channel during monitoring will be relocated to a more suitable location (either up or down-stream) within the surrounding habitat.

IV. REPORT

A job completion report for each Step will include methodology, a description of all tasks completed, problems encountered and pertinent observations. Data will be processed on computer and will include a listing of all species encountered, numbers encountered and percent relative abundance. A cumulative numbers versus species curve will be developed to show probability of having collected all species present in the area. Color photos are incorporated into the report to depict a typical view of the site and representative specimens collected. Copies of all original field data sheets will be presented as an appendix in the final report. Typical reports with appendices are usually about 75 to 100 pages and are comb bound.

One draft of the report will be presented to you for review and approval followed by 5 copies of the final report. Final reports will be available for distribution to the IDNR within 45 days after completion of the fieldwork. In accordance with collecting permit

requirements, additional copies of the approved final report will be distributed to the US Fish and Wildlife Service, Office of Endangered Species in Ft. Snelling and the US Fish and Wildlife Service, Rock Island Field Office.

V. SCHEDULE

It is anticipated that mussel sampling for Step 2 (baseline pre-construction mussel survey) will take two field days and can be started as soon as river temperature reaches 40 degrees F. Step 3 mussel relocation must wait for authorization by the IDNR following acceptance of the Conservation Plan. Step 2 should also be completed before initiating Step 3. Step 4 will commence the year following construction and will be repeated annually for ten (10) years (2003 through 2012). Reports should be available in draft form for comment within one week of field collections and final reports will be distributed within one week following receipt of comments.

VI. PERSONNEL

Helms & Associates will provide a team of six people to conduct the field survey. A dive team will collect the samples, and field technicians will assist the malacologist in processing the mussels and data recording. All have extensive experience working together on previous mussel studies, including projects where federal and state endangered and endangered mussels occur.

Malacologist - Don Helms is a qualified, experienced and licensed malacologist. He will serve as field supervisor and on site malacologist and will be present at all times during field collection and placement activities in order to properly direct and control the handling of mussels.

Dive team - The dive team will consist of certified divers and include a diver, a relief / safety diver and a dive supervisor. The dive team is experienced in mussel sampling and relocation activities and is knowledgeable of the safe handling of live mussel specimens. All are PADDI certified. All members of the dive team are current in CPR and First Aid training. They have been diving for Helms & Associates since 1986.

Support personnel - Properly trained and experienced support personnel will be present to conduct all other necessary activities under the direct supervision of the on site malacologist. Helms & Associates has a reserve pool of several individuals from which a team of field technicians will be selected. They will assist in the various supporting aspects of the project. All have extensive experience working together on previous mussel studies.

VII. PERMITS

Don Helms is our malacologist and permit holder for mussel projects. He currently holds a valid Illinois DNR scientific collecting permit and a federal endangered species permit. In addition, we will need an Illinois DNR Endangered Species Permit specifically authorizing these activities. It has been applied for. Activities will be performed in accordance to these permits.

IX. INSURANCE

Helms & Associates currently carries a \$1,000,000 General Liability (Policy No. 1D7-45-15) and Workman's Compensation (Policy No. 1H7-45-15) insurance with EMC

Insurance Companies. A Certificate of Insurance can be provided upon request.

X. COST

Our bid price for Steps 1, 2, and 4 of this project is **FIXED PRICE**. Price for Step 3 (relocation) is **FIXED PRICE** for the first five (5) days and is on a per day rate thereafter. This is necessary because it cannot be determined with a high degree of certainty how long relocation will require.

See attached cost summary.

XI. REFERENCES

- Helms & Associates. 2002. Mussel habitat survey for the J. T. Cullen barge docking site located at Mississippi River Pool 14, River Mile 518.8, Whiteside County, Illinois. Prepared for J. T. Cullen Company, Inc. Fulton, Illinois.
- Miller, A. C., B. S. Payne, D. J. Schafer, and L. T. Neill. 1994. Techniques for monitoring freshwater bivalve communities and populations in large rivers. In: Conservation and Management of Freshwater Mussels: Proceedings of a UMRCC Symposium. pp. 147-158.
- Turgeon, D. D., J.F. Quinn, Jr., A.E. Bogan, E.V. Coan, F.G. Hochberg, W.G. Lyons, P.M. Mikkelsen, R.J. Neves, C.F.E. Roper, G. Rosenberg, B. Roth, A. Scheltema, F.G. Thompson, M. Vecchione, and J.D. Williams. 1998. Common and scientific names of aquatic invertebrates from the United States and Canada: Mollusks, 2nd edition. American Fisheries Society Special Publication 26. American Fisheries Society, Bethesda, MD. 526 pp.
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