



# Stanley Consultants INC.

A Stanley Group Company  
Engineering, Environmental and Construction Services - Worldwide

September 12, 2012

U.S. Army Corps of Engineers, Rock Island  
ATTN: Wayne Hannel/Regulatory Branch  
Clock Tower Building  
Post Office Box 2004  
Rock Island, Illinois 61204-2004

Wayne:

Subject: Schwiebert Riverfront Park Transient Boat Dock – Modification  
CEMVR-OD-P-2012-0842

On July 30<sup>th</sup>, bids were opened for construction of the transient boat dock and the low bid exceeded available construction funding. The design has been modified to reduce the size of the facility and the number of piling. The project will be “re-bid”. The City wanted to get a contractor “on board” but the bidding documents stated that no work could begin until all permits were obtained.

Regardless of whether you need to go back out on Public Notice, it seemed prudent to at least copy the key agencies and players with this modification letter.

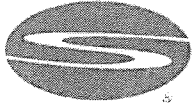
The new facility configuration is shown on attached Figure G3. The key differences between the new facility and the previous one are:

1. The size of the dock has been reduced.
2. There are 3 fewer boat slips.
3. The facility extends approximately 20' farther from shore.
4. The number of piling has decreased from 29 to 19.
5. None of the piling will be filled with concrete (see attached Figure S5).
6. There are no piles near the areas where the highest concentrations of mussels were found (see Figure 100).

The attached Conservation Plan has been revised to reflect the facility modifications.

Included are the following attachments:

- Figure G3 – Dock Plan
- Drawing S5 – Pipe Pile Detail
- Figure 100 - Mussel Recovery Figure superimposed on the dock plan.



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- Black Sandshell Conservation Plan

This letter is also being sent to the following:

- Joe Kath, Illinois DNR
- Thaddeus Faught, Illinois EPA
- Jon Duyvenjonck, USFWS
- Kathy Justison, Illinois DNR

A mussel survey for the new marina location was performed in May 2012 by Helms & Associates and copies of the report sent to all parties. This survey extended the June 2011 survey into the proposed new location.

If you require additional information, please call (563/264-6293).

Sincerely,

Stanley Consultants, Inc.

Michael J. Knott  
Principal Scientist

Enclosures

cc: Joe Kath, Illinois DNR  
Thaddeus Faught, Illinois EPA  
Jon Duyvejonck, USFWS  
Kathy Justison, Illinois DNR  
Alan Carmen, City of Rock Island  
Larry Sandhaas, Stanley Consultants

MJK: mjk: 23577-COE App Ltr

Conservation Plan for the State-Threatened Black Sandshell Mussel (*Ligumia recta*) at the Schwiebert Riverfront Park Transient Boat Dock; Mississippi River, Rock Island, Illinois

1. Description of the impact likely to result from the proposed taking.

**A. Location and Description of the Project Area:**

The proposed boat dock project is located on the left bank of the Mississippi River, on the City of Rock Island riverfront at River Mile 482.5 (See attached Vicinity Map). The dock, as originally proposed in the first application submittal, was located several hundred feet downstream from the current proposed location but was moved upstream, at the request of the Rock Island Corps of Engineers, because of concern for conflicts with barge traffic. The current location is slightly into the mouth of Sylvan Slough approximately 1,700' downstream of Lock & Dam 15.

The dock facility is in the NE ¼ of Section 35, Township 78N, and Range 2W along 1<sup>st</sup> Avenue between 17<sup>th</sup> and 20<sup>th</sup> Streets.

**B. Biological Data on Black Sandshell (*Ligumia recta*)**

The Black Sandshell is typically found in medium to large rivers with relatively strong current and stable substrates of firm sand or gravel. It is usually found in association with other mussel species in mussel beds or concentrations but in depths ranging from a few inches to 20' or more. Presumably because of its substantial weight/density, individuals are often found lying flat on their sides, fully-exposed, on substrate that includes solid, smooth, rock (personal experience).

The shell is elongate, solid and moderately compressed with a rounded anterior end. The male has a pointed posterior end while the female's posterior end is saber-shaped. The dorsal margin is straight and the ventral margin straight to curved. Umbos are low and only slightly elevated above the hinge line. Beak sculpture, when visible, has two or three indistinct, double-looped bars. The shell is smooth and shiny, dark green, brown, or black, with green rays visible on some individuals. The length can be up to 10 inches.

The pseudocardinal teeth are triangular, serrated, and divergent with two in the left valve and one in the right, occasionally with a small tooth anteriorly. The lateral teeth are long, moderately thin, and straight. The beak cavity is shallow. The nacre varies from white, pink and salmon to deep purple and iridescence posteriorly (Cummings and Mayer, 1992).

Black Sandshell is widely distributed but uncommon in much of the Midwest and in Illinois where it is listed as "threatened". They occur from the Great Lakes basin south into the Mississippi River drainage to Louisiana and in some Gulf Coast drainages and with many occurrences represented by few individuals and little evidence of recruitment.

### C. Description of Incidental Taking.

The proposed project involves installation of nineteen (19) 12" diameter pipe piles. None of the piles will be filled with concrete. The piles are located where shown on Figure G3. Holes will be drilled into the rock bottom from a drilling rig mounted on a construction barge. The excavated rock (drill tailings) will be removed and disposed of in an upland location. The piles will be lowered into the drilled holes and "grouted" into place. Grout will be pumped into the piles where it will exit the bottom of the piles and flow upward around the outside of the piles filling the annular space between the pipe and the wall of the drilled holes. The drilled holes are expected to be approximately 18" in diameter. Figure S5 shows a detail of a piling installation.

Each drilled hole will impact approximately 1.8 square feet of river bottom. Figure 100 shows the proposed facility superimposed over the mussel survey locations. Figure 100 shows the three locations where more than 10 mussels/square meters were found (Nos. 1707, 1709, & 1715). Sixteen individuals per square meter were found at No. 1707 which is well outside the project footprint. Thirty-two individuals per square meters were collected at No. 1709 which is 60'+ upstream of the nearest pile. Eighteen mussels were collected at No. 1715 where no piles will be located.

If any pile was drilled into the highest mussel concentration found (32 mussels/square meter or 32 mussels per 10.8 square feet), approximately 5 mussels would be impacted by the drilled hole (1.8 square feet). Since Black Sandshell only represented 1.1 % of the mussels collected, there is very little chance that any Black Sandshell will be lost. (See Table 3 from the mussel survey report - attached.)

Setting spud piles from the construction barge could also directly impact Black Sandshell and indirect impacts from watercraft using the facility could also occur.

### D. Anticipated Adverse Effects of the Listed Species

If mussels are not relocated, there is some chance that Black Sandshell individuals could be lost.

## 2. Measures to Minimize and Mitigate Impacts

### A. Plans to Minimize the Affected Area, the Number of Individuals of the Threatened Species that will be taken and the Habitat Affected.

No effort was made to minimize the Affected Area. The configuration of the transient boat dock was changed several times to maximize the space to provide as many boat slips as possible without elongating the footprint or blocking boat passage. There will be a negligible impact on both habitat and the threatened species.

**B. Plans for management of the area affected by the proposed action that will allow continued use of the area by Black Sandshell.**

Similar habitat is located both upstream and downstream of the work area as indicated by the previous survey work done downstream and the work upstream included in the recent survey. The proposed improvements are not expected to have any impact on the Black Sandshell's continued use of the area. There are no planned maintenance activities that would be expected to impact the mussel resource. Mussels will likely re-colonize any area where they have been removed from.

**C. Description of measures to be implemented to minimize or mitigate the effects of the proposed action on Black Sandshell, plans for monitoring the effects of the measures implemented, and adaptive management practices that will be used to deal with changed or unforeseen circumstances that affect the effectiveness of instituted measures.**

Mussels will be removed from within the footprint of each pile drilling and a 5' diameter buffer around each pile. Mussels will also be relocated from within the areas where spud piles are placed during construction. The mussels will be relocated to areas up or downstream where mussel concentrations are known to exist. This relocation effort will minimize the potential for direct impacts to mussels located in "harm's way" and consequently any Black Sandshells that might be present within the footprint. Indirect impacts from construction or from watercraft activity during operation of the facility are expected to be negligible.

Regular inspections by the City's Resident Engineer, particularly during the period of the relocation work, will ensure that the Contractor and the divers are closely coordinating the mussel removal and relocation effort. The Resident Engineer will also closely monitor the accuracy of diver's removal locations.

It is not considered necessary to provide follow-up monitoring because of the minimal impact to the resource anticipated.

**D. Verification that funding to support mitigation activities will be available for the life of the conservation plan**

The City of Rock Island is committed to funding the construction and operation of the transient boat dock facility including any costs associated with constraints or conditions imposed by the permitting process. The City has been anticipating the minimization and mitigation requirements addressed herein and understand if changes are made to the facility that could potentially impact the mussel resource, that they are required to contact Illinois DNR and possibly re-visit the imposed conditions.

### 3. Analysis of Project Alternatives

Several alternative designs were examined for configuring and constructing this project but all were evaluated relative to, constructability, maximizing dock spacing, engineering economy, and impacts to navigation. Several configurations were examined before a plan was selected that maximized the number of slips and minimized impacts to passing boaters. Dock anchoring alternatives included sunken anchors with cabling; and size and quantity of piling.

None of the alternatives appeared to provide any advantages for reducing impacts to the mussel resource, primarily because all were expected to have a minor impact.

There is no existing transient boat dock facility that could be replaced, expanded, or rehabilitated. The only project that meets the needs and/or desires of the City is a new transient boat dock. No serious consideration was given to a "Do Nothing" alternative because of the obvious result of not having a transient boat dock facility. There would not be any take of listed mussel species if this alternative were selected.

### 4. Data and information regarding survival of the species after the proposed take is completed.

The Black Sandshell is widely distributed in Illinois in medium and larger rivers. It is listed from 22 counties from rivers of medium size and larger. The listings include:

- All counties on the Mississippi River upstream of Alton
- All counties on the Rock River.
- Pulaski and Massac Counties on the Ohio River.
- Iroquois, Kankakee, and Will Counties on the Kankakee River
- Kane and McHenry Counties on the Fox River
- Moultrie County on the Kaskaskia river

Black Sandshell is believed extirpated from the Illinois River.

Black Sandshell is known to parasitize American eel, bluegill, largemouth bass, and white crappie but probably have other hosts. This project will not negatively impact any of these fish species or jeopardize the continued health of the resource, the species, the habitat or the fish hosts.

### 5. Implementing Agreement

#### A. **Names of all participants in the execution of the conservation plan, including public bodies, corporations, organizations, and private individuals.**

Michael J. Knott  
Principal Scientist  
Stanley Consultants, Inc.

Kathy Justison  
Grant Administrator  
Illinois DNR

Larry Sandhaas  
Principal Engineer  
Stanley Consultants, Inc.

Alan Carmen  
Planning & Redevelopment Administrator  
City of Rock Island

Don Helms  
Malacologist  
Helms & Associates

**B. The obligations and responsibilities of each of the identified participants with schedules and deadlines for completion of activities in the conservation plan and a schedule of preparation of progress report to be provided to the department.**

The Illinois Department of Natural resources is responsible for the review of the conservation plan and for the subsequent issuance of the Incidental Take Authorization.

The City of Rock Island is responsible for securing authorization for the incidental take as well as responsible for securing all permits including Section 404, DNR Office of Water Resources, Section 401 Water Quality Certification, inspection of the work and contractor compliance with the contract documents.

Stanley Consultants, Inc. is the consulting engineer retained by the City of Rock Island and is responsible for the design of the Project.

Helms & Associates is responsible for the mussel survey for this project and will likely be responsible for the mussel relocation work.

Kathy Justison is responsible for the administration of the Boating Infrastructure Grant (BIG) received from the U.S. Fish & Wildlife Service (FWS).

Construction is scheduled to begin summer 2012 as soon as all permits have been obtained. The relocation work will be done concurrently with the contractor's work of drilling holes and setting piles.

- C. **Assurances that each participant in the execution of the conservation plan has the legal authority to carry out their respective obligations and responsibilities under the conservation plan.**

Partial funding for this project was received from FWS and authorized by Illinois Department of Conservation. The project is also authorized by the City of Rock Island who is responsible for partial funding and for overseeing the project.

- D. **Assurances of compliance with all federal, state, and local regulations pertinent to the proposed action and to the execution of the conservation plan.**

The City of Rock Island has filed a Joint Permit Application with the Corps of Engineers for an Individual Section 404 permit; and to Illinois Department of Natural Resources and Illinois Environmental Protection Agency for the appropriate State Permits. The City will abide by all required environmental laws and conditions imposed by any of the agencies to construct and operate an environmentally sensitive facility.

- E. **Copies of any federal authorizations for taking already issued to the applicant.**

NA - Black Sandshell is not a federally-listed species.

- F. **For projects that will result in the taking of endangered or threatened species of plants, copies of expressed written permission of the landowner.**

Not applicable.

6. Attachments

- A. **Figure G2 - Vicinity Map**
- B. **Figure G3 – Dock Plan**
- C. **Figure S5 – Pile Detail**
- D. **Figure 100 – Dock Plan/Mussel Sampling Locations**
- E. **Table 3 – Mussel Species and Abundance**



**Table 3. Species and relative abundance of mussels sampled using substrate sampling and timed searches at the Rock Island Transient Boat Dock site by Helms & Associates 2012.**

Common name	Scientific name	Substrate samples		Timed searches		Combined catch	
		Number	Percent	Number	Percent	Number	Percent
Threehorn wartyback	<i>Obliquaria reflexa</i>	87	71.3%	35	59.3%	122	67.4%
Pimpleback	<i>Quadrula pustulosa</i>	12	9.8%	3	5.1%	15	8.3%
Threeridge	<i>Amblyma plicata</i>	10	8.2%	4	6.8%	14	7.7%
Hickorynut	<i>Obovata olivaria</i>	4	3.3%	4	6.8%	8	4.4%
Plain pocketbook	<i>Lampsilis cardium</i>	3	2.5%	3	5.1%	6	3.3%
Wabash pigtoe	<i>Fusconata flava</i>	1	0.8%	4	6.8%	5	2.8%
Mapleleaf	<i>Quadrula quadrula</i>	2	1.6%	1	1.7%	3	1.7%
Black sandshell	<i>Ligumia recta</i>	0	0.0%	2	3.4%	2	1.1%
Fragile papershell	<i>Leptodea fragilis</i>	2	1.6%			2	1.1%
Giant floater	<i>Pyganodon grandis</i>	1	0.8%			1	0.6%
Mucket	<i>Actinonaias ligamentina</i>			1	1.7%	1	0.6%
Pink papershell	<i>Potamilus ohioensis</i>			1	1.7%	1	0.6%
Washboard	<i>Megalonaias nervosa</i>			1	1.7%	1	0.6%
	Totals	122	100.0%	59	100.0%	181	100.0%
	Total species	10		11		13	