

Solicitation Response(SR) Dept: 0310 ID: ESR0818200000001002 Ver.: 1 Function: New Phase: Final

Modified by batch , 08/18/2020

Header 4



General Information Contact Default Values Discount Document Information

Procurement Folder: 758813	SO Doc Code: ARFQ
Procurement Type: Agency Contract - Fixed Amt	SO Dept: 0310
Vendor ID: 000000176834	SO Doc ID: DNR2100000008
Legal Name: ENVIROSCIENCE INC	Published Date: 8/7/20
Alias/DBA:	Close Date: 8/18/20
Total Bid: \$25,599.00	Close Time: 13:30
Response Date: 08/18/2020	Status: Closed
Response Time: 10:20	Solicitation Description: Addendum No. 01 - Wildlife - Mussel Survey & Relocation
	Total of Header Attachments: 4
	Total of All Attachments: 4



**State of West Virginia
Request For Quotation
Construction**

Procurement Folder : 758813

Document Description : Wildlife - Mussel Survey & Relocation

Procurement Type : Agency Contract - Fixed Amt

Date Issued	Solicitation Closes	Solicitation No	Version	Phase
2020-07-24	2020-08-18 13:30:00	ARFQ 0310 DNR2100000008	1	Draft

SUBMIT RESPONSES TO:	VENDOR
BID RESPONSE DIVISION OF NATURAL RESOURCES PROPERTY & PROCUREMENT OFFICE 324 4TH AVE SOUTH CHARLESTON WV 25303-1228 US	Vendor Name, Address and Telephone EnviroScience, Inc. 129 Greenbag Road Morgantown, West Virginia 26501 800-940-4025

FOR INFORMATION CONTACT THE
 James H Adkins
 (304) 558-3397
jamie.h.adkins@wv.gov

Signature X **FEIN #** 34-1603505 **DATE** 8/17/2020

ADDITIONAL INFORMATION:

The Agency is soliciting bids to establish a contract for Mussel Survey and possible relocation services at St. Albans, WV.

Results of Phase I Survey will determine the need for Phase II Survey and Relocation Services.

INVOICE TO		SHIP TO	
DIVISION OF NATURAL RESOURCES WILDLIFE RESOURCES SECTION 324 4TH AVE SOUTH CHARLESTON WV25303 US		STATE OF WEST VIRGINIA JOBSITE - SEE SPECIFICATIONS No City WV 99999 US	

Line	Commodity Line Description	Qty	Unit Issue	Unit Price	Total Price
1	Mussel Survey Phase I				

Commodity Code	Manufacturer	Model #	Specification
81171500			

Extended Description

Phase I Mussel survey at the St. Albans Roadside Park in St. Albans, WV.

INVOICE TO		SHIP TO	
DIVISION OF NATURAL RESOURCES WILDLIFE RESOURCES SECTION 324 4TH AVE SOUTH CHARLESTON WV25303 US		STATE OF WEST VIRGINIA JOBSITE - SEE SPECIFICATIONS No City WV 99999 US	

Line	Commodity Line Description	Qty	Unit Issue	Unit Price	Total Price
2	Mussel Survey Phase II				

Commodity Code	Manufacturer	Model #	Specification
81171500			

Extended Description

Phase II Mussel Survey at the St. Albans Roadside Park in St. Albans, WV.

INVOICE TO		SHIP TO	
DIVISION OF NATURAL RESOURCES WILDLIFE RESOURCES SECTION 324 4TH AVE SOUTH CHARLESTON WV25303 US		STATE OF WEST VIRGINIA JOBSITE - SEE SPECIFICATIONS No City WV 99999 US	

Line	Commodity Line Description	Qty	Unit Issue	Unit Price	Total Price
3	Mussel Relocation Services				

Commodity Code	Manufacturer	Model #	Specification
81171500			

Extended Description

Mussel relocation services at the St. Albans Roadside Park in St. Albans, WV.

SCHEDULE OF EVENTS

Line	Event	Event Date
2	Technical Question Deadline 9:00am ET	2020-08-05

DNR210000008	Document Phase Final	Document Description Wildlife - Mussel Survey & Relocation	Page 4 of 4
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ADDITIONAL TERMS AND CONDITIONS

See attached document(s) for additional Terms and Conditions



West Virginia Division of Natural Resources

INSTRUCTIONS TO VENDORS & AGENCY TERMS AND CONDITIONS

INSTRUCTIONS

1. REVIEW DOCUMENTS THOROUGHLY: The attached documents contain a solicitation for bids. Please read these instructions and all documents attached in their entirety. These instructions provide critical information about requirements that if overlooked could lead to disqualification of a Vendor's bid. All bids must be submitted in accordance with the provisions contained in these instructions and the Solicitation. Failure to do so may result in disqualification of a Vendor's bid.

2. MANDATORY TERMS: The Solicitation may contain mandatory provisions identified by the use of the words "must," "will," and "shall" which identify a mandatory item or requirement. Failure to comply with a mandatory term in the Solicitation will result in bid disqualification.

3. PREBID MEETING: The item identified below shall apply to this Solicitation.

A pre-bid meeting will not be held prior to bid opening.

A **NON-MANDATORY** pre-bid meeting will be held at the following place and time:

A **MANDATORY** pre-bid meeting will be held at the following place and time:

All Vendors submitting a bid must attend the mandatory pre-bid meeting. Failure to attend the mandatory pre-bid meeting shall result in disqualification of the Vendor's bid. No one person attending the pre-bid meeting may represent more than one Vendor.

An attendance sheet provided at the pre-bid meeting shall serve as the official document verifying attendance. The State will not accept any other form of proof or documentation to verify attendance. Any person attending the pre-bid meeting on behalf of a Vendor must list on the attendance sheet his or her name and the name of the Vendor he or she is representing.

Additionally, the person attending the pre-bid meeting should include the Vendor's e-mail address, phone number, and Fax number on the attendance sheet. It is the Vendor's responsibility to locate the attendance sheet and provide the required information. Failure to complete the attendance sheet as required may result in disqualification of Vendor's bid.

All Vendors should arrive prior to the starting time for the pre-bid. Vendors who arrive after the starting time but prior to the end of the pre-bid will be permitted to sign in, but are charged with knowing all matters discussed at the pre-bid.

Questions submitted at least five (5) business days prior to a scheduled pre-bid will be discussed at the pre-bid meeting if possible. Any discussions or answers to questions at the pre-bid meeting are preliminary in nature and are non-binding. Official and binding answers to questions will be published in a written addendum to the Solicitation prior to bid opening.

4. VENDOR QUESTION DEADLINE: Vendors may submit questions relating to this Solicitation to the Property and Procurement Office. Questions must be submitted in writing. All questions must be submitted on or before the date listed below and to the address listed below in order to be considered. A written response will be published in a Solicitation addendum if a response is possible and appropriate. Non-written discussions, conversations, or questions and answers regarding this Solicitation are preliminary in nature and are nonbinding.

Submitted e-mails should have solicitation number in the subject line.

Question Submission Deadline: 08/05/2020 at 9:00 A.M.

Submit Questions to:
West Virginia Division of Natural Resources
Property and Procurement Office
Attention: Mr. Jamie Adkins
South Charleston, WV 25303
Fax: (304) 558-2165
Email: Jamie.H.Adkins@wv.gov

5. VERBAL COMMUNICATION: Any verbal communication between the Vendor and any State personnel is not binding, including verbal communication at the mandatory pre-bid conference. Only information issued in writing and added to the Solicitation by an official written addendum by the Property and Procurement Office is binding.

6. BID SUBMISSION: All bids must be submitted electronically through wvOASIS or signed and delivered by the Vendor to the Property and Procurement Office at the address listed below on or before the date and time of the bid opening. Any bid received by the Property and Procurement Office is considered to be in the possession of the Office and will not be returned for any reason. Acceptable delivery methods include electronic submission via wvOASIS, hand delivery, delivery by courier, or facsimile.

The bid delivery address is:

West Virginia Division of Natural Resources
Property and Procurement Office
324 4th Avenue
South Charleston, WV 25303

A bid that is not submitted electronically through wvOASIS should contain the information listed below on the face of the envelope or the bid may be rejected by the West Virginia Division of Natural Resources.:

SEALED BID:

BUYER: Mr. Jamie Adkins
SOLICITATION NUMBER: ARFQ DNR21*08
BID CLOSING DATE: 08/18/2020
BIDCLOSING TIME: 1:30pm ET
FAX NUMBER: 304-558-2165

The Property and Procurement Office may prohibit the submission of bids electronically through wvOASIS at its sole discretion. Such a prohibition will be contained and communicated in the wvOASIS system resulting in the Vendor's inability to submit bids through wvOASIS. Submission of a response to an Expression of Interest or Request for Proposal is not permitted in wvOASIS.

For Agency Request for Proposal ("ARFP") Responses Only: In the event that Vendor is responding to a request for proposal, the Vendor shall submit one original technical and one original cost proposal plus _____ convenience copies of each to the Property and Procurement Office at the address shown above. Additionally, the Vendor should identify the bid type as either a technical or cost proposal on the face of each bid envelope submitted in response to a request for proposal as follows:

BID TYPE:

Technical
 Cost

7. BID OPENING: Bids submitted in response to this Solicitation will be opened at the location identified below on the date and time listed below. Delivery of a bid after the bid opening date and time will result in bid disqualification. For purposes of this Solicitation, a bid is considered delivered when confirmation of delivery is provided by wvOASIS (in the case of electronic submission) or when the bid is time stamped by the official Property and Procurement Office time clock (in the case of hand delivery).

Bid Opening Date and Time:

Bid Opening Location:

West Virginia Division of Natural Resources
Property and Procurement Office
324 4th Avenue
South Charleston, WV 25303

8. ADDENDUM ACKNOWLEDGEMENT: Changes or revisions to this Solicitation will be made by an official written addendum issued by the Property and Procurement Office. Vendor should acknowledge receipt of all addenda issued with this Solicitation by completing an Addendum Acknowledgment Form, a copy of which is included herewith. Failure to acknowledge addenda may result in bid disqualification. The addendum acknowledgement should be submitted with the bid to expedite document processing.

9. BID FORMATTING: Vendor should type or electronically enter the information onto its bid to prevent errors in the evaluation. Failure to type or electronically enter the information may result in bid disqualification.

10. ALTERNATE MODEL OR BRAND: Unless the box below is checked, any model, brand, or specification listed in this Solicitation establishes the acceptable level of quality only and is not intended to reflect a preference for, or in any way favor, a particular brand or vendor. Vendors may bid alternates to a listed model or brand provided that the alternate is at least equal to the model or brand and complies with the required specifications. The equality of any alternate being bid shall be determined by the State at its sole discretion. Any Vendor bidding an alternate model or brand should clearly identify the alternate items in its bid and should include manufacturer's specifications, industry literature, and/or any other relevant documentation demonstrating the equality of the alternate items. Failure to provide information for alternate items may be grounds for rejection of a Vendor's bid.

This solicitation is based upon a standardized commodity established under W. Va. Code §5A-3-61. Vendors are expected to bid the standardized commodity identified. Failure to bid the standardized commodity will result in your firm's bid being rejected.

11. EXCEPTIONS AND CLARIFICATIONS: The Solicitation contains the specifications that shall form the basis of a contractual agreement. Vendor shall clearly mark any exceptions, clarifications, or other proposed modifications in its bid. Exceptions to, clarifications of, or

modifications of a requirement or term and condition of the Solicitation may result in bid disqualification.

12. COMMUNICATION LIMITATIONS: In accordance with West Virginia Division of Natural Resources Series IV Purchasing Guidelines and Procedures §6.6. communication with the State of West Virginia or any of its employees regarding this Solicitation during the solicitation, bid, evaluation or award periods, except through the Property and Procurement Office, is strictly prohibited without prior Property and Procurement Office approval. Property and Procurement Office approval for such communication is implied for all agency delegated and exempt purchases.

13. REGISTRATION: Prior to Contract award, the apparent successful Vendor must be properly registered with the West Virginia Purchasing Division and must have paid the \$125 fee, if applicable.

14. UNIT PRICE: Unit prices shall prevail in cases of a discrepancy in the Vendor's bid.

15. PREFERENCE: Vendor Preference may be requested in purchases of motor vehicles or construction and maintenance equipment and machinery used in highway and other infrastructure projects. Any request for preference must be submitted in writing with the bid, must specifically identify the preference requested with reference to the applicable subsection of West Virginia Code §5A-3-37, and should include with the bid any information necessary to evaluate and confirm the applicability of the requested preference. A request form to help facilitate the request can be found at: <http://www.state.wv.us/admin/purchase/vrc/Venpref.pdf>.

15A. RECIPROCAL PREFERENCE: The State of West Virginia applies a reciprocal preference to all solicitations for commodities and printing in accordance with the W. Va. Code §5A-3-37(b). In effect, non-resident vendors receiving a preference in their home states will see that same preference granted to West Virginia resident vendors bidding against them in West Virginia. A request form to help facilitate the request can be found at : <http://www.state.wv.us/admin/purchase/vrc/Venpref/pdf>.

16. SMALL, WOMEN-OWNED, OR MINORITY-OWNED BUSINESSES: For any solicitations publicly advertised for bid, in accordance with W. Va. Code §5A-3-37(a)(7) and W. Va. Code R. § 148-22-9, any non-resident vendor certified as a small, women-owned, or minority owned business under W. Va. Code R. § 148-22-9 shall be provided the same preference made available to any resident vendor. Any non-resident small, women-owned, or minority-owned business must identify itself as such in writing, must submit that writing to the Property and Procurement Office with its bid, and must be properly certified under W. Va. Code R. § 148-22-9 prior to contract award to receive the preferences made available to resident vendors. Preference for a non-resident small, women-owned, or minority owned business shall be applied in accordance with W. Va. Code R. § 148-22-9.

17. WAIVER OF MINOR IRREGULARITIES: The Chief Procurement Officer reserves the right to waive minor irregularities in bids or specifications in accordance with West Virginia Division of Natural Resources Series IV Purchasing Guidelines and Procedures § 4.1.g.

18. ELECTRONIC FILE ACCESS RESTRICTIONS: Vendor must ensure that its submission in wvOASIS can be accessed and viewed by the Property and Procurement Office staff immediately upon bid opening. The Property and Procurement Office will consider any file that cannot be immediately accessed and viewed at the time of the bid opening (such as, encrypted files, password protected files, or incompatible files) to be blank or incomplete as context requires and are therefore unacceptable. A vendor will not be permitted to unencrypt files, remove password protections, or resubmit documents after bid opening to make a file viewable if those documents are required with the bid. A Vendor may be required to provide document passwords or remove access restrictions to allow the Property and Procurement Office to print or electronically save documents provided that those documents are viewable by the Property and Procurement Office prior to obtaining the password or removing the access restriction.

19. NON-RESPONSIBLE: The Chief Procurement Officer reserves the right to reject the bid of any vendor as Non-Responsible in accordance with West Virginia Division of Natural Resources Series IV Purchasing Guidelines and Procedures §5.5.a., when the Chief Procurement Officer determines that the vendor submitting the bid does not have the capability to fully perform, or lacks the integrity and reliability to assure good-faith performance.

20. ACCEPTANCE/REJECTION: The Agency may accept or reject any bid in whole, or in part in accordance with West Virginia Division of Natural Resources Series IV Purchasing Guidelines and Procedures §4.1. f. and §6.4. b.

21. YOUR SUBMISSION IS A PUBLIC DOCUMENT: Vendor's entire response to the Solicitation and the resulting Contract are public documents. As public documents, they will be disclosed to the public following the bid/proposal opening or award of the contract, as required by the competitive bidding laws of W. Va. Code §§ 5A-3-1 et seq., 5-22-1 et seq., and 5G-1-1 et seq. and the Freedom of Information Act W. Va. Code §§ 29B-1-1 et seq.

DO NOT SUBMIT MATERIAL YOU CONSIDER TO BE CONFIDENTIAL, A TRADE SECRET(S), OR OTHERWISE NOT SUBJECT TO PUBLIC DISCLOSURE.

Submission of any bid, proposal, or other document to the Property and Procurement Office constitutes your explicit consent to the subsequent public disclosure of the bid, proposal, or document. The Property and Procurement Office will disclose any document labeled "confidential," "proprietary," "trade secret," "private," or labeled with any other claim against public disclosure of the documents, to include any "trade secrets" as defined by W. Va. Code § 47-22-1 et seq. All submissions are subject to public disclosure without notice.

22. INTERESTED PARTY DISCLOSURE: West Virginia Code § 6D-1-2 requires that the vendor submit to the Purchasing Division a disclosure of interested parties to the contract for all contracts with an actual or estimated value of at least \$1 Million. That disclosure must occur on the form prescribed and approved by the WV Ethics Commission prior to contract award. A copy of that form is included with this solicitation or can be obtained from the WV Ethics Commission. This requirement does not apply to publicly traded companies listed on a national or international stock exchange. A more detailed definition of interested parties can be obtained from the form referenced above.

23. WITH THE BID REQUIREMENTS: In instances where these specifications require documentation or other information with the bid, and a vendor fails to provide it with the bid, the Director of the Purchasing Division reserves the right to request those items after bid opening and prior to contract award pursuant to the authority to waive minor irregularities in bids or specifications under W. Va. CSR § 148-1-4.6. This authority does not apply to instances where state law mandates receipt with the bid.

AGENCY TERMS & CONDITIONS

1. CONTRACTUAL AGREEMENT: Issuance of an Award Document signed by the Chief Procurement Officer, or his or her designee, and approved as to form by the Attorney General's office constitutes acceptance of this Contract made by and between the State of West Virginia and the Vendor. Vendor's signature on its bid signifies Vendor's agreement to be bound by and accept the terms and conditions contained in this Contract.

2. DEFINITIONS: As used in this Solicitation/Contract, the following terms shall have the meanings attributed to them below. Additional definitions may be found in the specifications included with this Solicitation/Contract.

- a. **"Agency"** means the West Virginia Division of Natural Resources.
- b. **"Bid"** or **"Proposal"** means a vendor's submitted response to a solicitation.
- c. **"Contract"** means the binding agreement that is entered into between the State and the Vendor to provide the goods or services requested in the Solicitation.
- d. **"Chief Procurement Officer"** means the Chief Procurement Officer of the West Virginia Division of Natural Resources or anyone that the Chief Procurement Officer has designated to perform a specific task or function.
- e. **"Property and Procurement Office"** means the unit within the West Virginia Division of Natural Resources' Administration Section headed by the Chief Procurement Officer and its personnel.
- f. **"Director of the Purchasing Division"** means the Director of the West Virginia Department of Administration, Purchasing Division.
- g. **"Award Document"** means the document signed by the Agency and the Property and Procurement Office and approved as to form by the Attorney General that identifies the Vendor as the contract holder.
- h. **"Solicitation"** means the official notice of an opportunity to supply the State with goods or services that is published by the Property and Procurement Office.
- i. **"State"** means the State of West Virginia and/or any of its agencies, commissions, boards, etc. as context requires.
- j. **"Vendor"** or **"Vendors"** means any entity submitting a bid in response to the Solicitation, the entity that has been selected as the lowest responsible bidder, or the entity that has been awarded the Contract as context requires.

- k. **“Will”, “Shall” and “Must”** identifies a mandatory item or requirement that is the duty, obligation, or requirement imposed is mandatory as opposed to being directory or permissive.

3. CONTRACT TERM; RENEWAL; EXTENSION: The term of this Contract shall be determined in accordance with the category that has been identified as applicable to this Contract below:

Term Contract

Initial Contract Term: This Contract becomes effective on _____ and extends for a period of _____ year(s).

Renewal Term: This Contract may be renewed upon the mutual written consent of the Agency, and the Vendor, with approval of the Property and Procurement Office and the Attorney General’s office (Attorney General approval is as to form only). Any request for renewal should be submitted to the Property and Procurement Office thirty (30) days prior to the expiration date of the initial contract term or appropriate renewal term. A Contract renewal shall be in accordance with the terms and conditions of the original contract. Renewal of this Contract is limited to _____ successive one (1) year periods or multiple renewal periods of less than one year, provided that the multiple renewal periods do not exceed the total number of month available in all renewal years combined. Automatic renewal of this Contract is prohibited. Notwithstanding the foregoing, Property and Procurement Office approval is not required on Section delegated or exempt purchases. Attorney General approval may be required for vendor terms and conditions.

Alternate Renewal Term – This contract may be renewed for _____ successive _____ year periods or shorter periods provided that they do not exceed the total number of months contained in all available renewals. Automatic renewal of this Contract is prohibited. Renewals must be approved by the Vendor, Agency, Property and Procurement Office and Attorney General’s office (Attorney General approval is as to form only)

Delivery Order Limitations: In the event that this contract permits delivery orders, a delivery order may only be issued during the time this Contract is in effect. Any delivery order issued within one year of the expiration of this Contract shall be effective for one (1) year from the date the delivery order is issued. No delivery order may be extended beyond one year after this Contract has expired.

Fixed Period Contract: This Contract becomes effective upon Vendor’s receipt of the notice to proceed and must be completed within 100 days.

Fixed Period Contract with Renewals: This Contract becomes effective upon Vendor’s receipt of the notice to proceed and part of the Contract more fully described in the attached specifications must be completed within _____ days. Upon completion of the work covered by the preceding sentence, the vendor agrees that maintenance, monitoring, or warranty services will be provided for _____ year(s) thereafter.

One-Time Purchase: The term of this Contract shall run from the issuance of the Award Document until all of the goods contracted for have been delivered, but in no event, will this Contract extend for more than one fiscal year.

Other: See attached.

4. NOTICE TO PROCEED: Vendor shall begin performance of this Contract immediately upon receiving notice to proceed unless otherwise instructed by the Agency. Unless otherwise specified, the fully executed Award Document will be considered notice to proceed.

5. QUANTITIES: The quantities required under this Contract shall be determined in accordance with the category that has been identified as applicable to this Contract below.

Open-End Contract: Quantities listed in this Solicitation are approximations only, based on estimates supplied by the Agency. It is understood and agreed that the Contract shall cover the quantities actually ordered for delivery during the term of the Contract, whether more or less than the quantities shown.

Service: The scope of the service to be provided will be more clearly defined in the specifications included herewith.

Combined Service and Goods: The scope of the service and deliverable goods to be provided will be more clearly defined in the specifications included herewith.

One-Time Purchase: This Contract is for the purchase of a set quantity of goods that are identified in the specifications included herewith. Once those items have been delivered, no additional goods may be procured under this Contract without an appropriate change order approved by the Vendor, Agency, Property and Procurement Office and Attorney General's office.

6. EMERGENCY PURCHASES: The Chief Procurement Officer may authorize the Agency to purchase goods or services in the open market that Vendor would otherwise provide under this Contract if those goods or services are for immediate or expedited delivery in an emergency. Emergencies shall include, but are not limited to, delays in transportation or an unanticipated increase in the volume of work. An emergency purchase in the open market, approved by the Chief Procurement Officer, shall not constitute of breach of this Contract and shall not entitle the Vendor to any form of compensation or damages. This provision does not excuse the State from fulfilling its obligations under a One-Time Purchase contract.

7. REQUIRED DOCUMENTS: All of the items checked below must be provided to the Property and Procurement Office by the Vendor as specified below.

BID BOND (Construction Only): Pursuant to the requirements contained in W. Va. Code § 5-22-1(c), All Vendors submitting a bid on a construction project shall furnish a valid bid bond in the amount of five percent (5%) of the total amount of the bid protecting the State of West Virginia. The bid bond must be submitted with the bid.

PERFORMANCE BOND: The apparent successful Vendor shall provide a performance bond in the amount of 100% of the Contract value. The performance bond must be received by the Property and Procurement Office prior to Contract award.

LABOR/MATERIAL PAYMENT BOND: The apparent successful Vendor shall provide a labor/material payment bond in the amount of 100% of the Contract value. The labor/material payment bond must be delivered to the Property and Procurement Office prior to Contract award.

MAINTENANCE BOND: The apparent successful Vendor shall provide a two (2) year maintenance bond covering the roofing system. The maintenance bond must be issued and delivered to the Property and Procurement Office prior to Contract award.

LICENSE(S) / CERTIFICATIONS / PERMITS: In addition to anything required under the Section entitled Licensing, of the General Terms and Conditions, the apparent successful Vendor shall furnish proof of the following licenses, certifications, and/or permits prior to Contract award, in a form acceptable to the Property and Procurement Office.

The apparent successful Vendor shall also furnish proof of any additional licenses or certifications contained in the specifications prior to Contract award regardless of whether or not that requirement is listed above.

8. INSURANCE: The apparent successful Vendor shall furnish proof of the insurance identified by a checkmark below prior to Contract award. Subsequent to contract award, and prior to the insurance expiration date, Vendor shall provide the Agency with proof that the insurance mandated herein has been continued. Vendor must also provide Agency with immediate notice of any changes in its insurance policies mandated herein, including but not limited to, policy cancelation, policy reduction, or change in insurers. The insurance coverages identified below must be maintained throughout the life of this contract. The apparent successful Vendor shall also furnish proof of any additional insurance requirements contained in the specifications prior to Contract award regardless of whether or not that insurance requirement is listed in this section.

Vendor must maintain:

Commercial **General Liability Insurance** in at least an amount of:

\$500,000.00

Automobile **Liability Insurance** in at least an amount of: \$250,000.00

Professional/**Malpractice/Errors and Omission Insurance** in at least an amount of:

Commercial **Crime and Third-Party Fidelity Insurance** in an amount of:

Cyber **Liability Insurance in an amount of:** _____

Builders Risk Insurance in an amount equal to 100% of the amount of the Contract.

Other _____

Notwithstanding anything contained in this section to the contrary, the Chief Procurement Officer reserves the right to waive the requirement that the Agency be named as an additional insured on one or more of the Vendor's insurance policies if the Chief Procurement Officer finds that doing so is in the best interest of the Agency.

9. WORKERS' COMPENSATION INSURANCE: The apparent successful Vendor shall comply with laws relating to workers' compensation, shall maintain workers' compensation insurance when required, and shall furnish proof of workers' compensation insurance upon request.

10 LIQUIDATED DAMAGES: This clause shall in no way be considered exclusive and shall not limit the State or Agency's right to pursue any other available remedy. Vendor shall pay liquidated damages in the amount specified below or as described in the specifications:

_____ for _____

Liquidated Damages Contained in the Specifications

11. ACCEPTANCE: Vendor's signature on its bid, or on the certification and signature page, constitutes an offer to the State that cannot be unilaterally withdrawn, signifies that the product or service proposed by vendor meets the mandatory requirements contained in the Solicitation for that product or service, unless otherwise indicated, and signifies acceptance of the terms and conditions contained in the Solicitation unless otherwise indicated.

12. PRICING: The pricing set forth herein is firm for the life of the Contract, unless specified elsewhere within this Solicitation/Contract by the State. A Vendor's inclusion of price adjustment provisions in its bid, without an express authorization from the State in the Solicitation to do so, may result in bid disqualification. Notwithstanding the foregoing, Vendor must extend any publicly advertised sale price to the State and invoice at the lower of the contract price or the publicly advertised sale price.

13. PAYMENT IN ARREARS: Payment in advance is prohibited under this Contract. Payment may only be made after the delivery and acceptance of goods or services. The Vendor shall submit invoices, in arrears.

14. PAYMENT METHODS: Vendor must accept payment by electronic funds transfer and P-card. (The State of West Virginia's Purchasing Card program, administered under contract by a banking institution, processes payment for goods or through the state designated credit cards.)

15. TAXES: The Vendor shall pay any applicable sales, use, personal property or any other taxes arising out of this Contract and the transactions contemplated thereby. The State of West Virginia is exempt from federal and state taxes and will not pay or reimburse such taxes.

16. ADDITIONAL FEES: Vendor is not permitted to charge additional fees or assess additional charges that were not either expressly provided for in the solicitation published by the State of West Virginia or included in the unit price or lump sum bid amount that Vendor is required by the

solicitation to provide. Including such fees or charges as notes to the solicitation may result in rejection of vendor's bid. Requesting such fees or charges be paid after the contract has been awarded may result in cancellation of the contract.

17. FUNDING: This Contract shall continue for the term stated herein, contingent upon funds being appropriated by the Legislature or otherwise being made available. In the event funds are not appropriated or otherwise made available, this Contract becomes void and of no effect beginning on July 1 of the fiscal year for which funding has not been appropriated or otherwise made available.

18. CANCELLATION: The Chief Procurement Officer reserves the right to cancel this Contract immediately upon written notice to the vendor if the materials or workmanship supplied do not conform to the specifications contained in the Contract. The Chief Procurement Office may also cancel any purchase or Contract upon thirty (30) days written notice to the Vendor in accordance with West Virginia Division of Natural Resources Series IV Purchasing Guidelines and Procedures, § 5.2.

19. TIME: Time is of the essence with regard to all matters of time and performance in this Contract.

20. APPLICABLE LAW: This Contract is governed by and interpreted under West Virginia law without giving effect to its choice of law principles. Any information provided in specification manuals, or any other source, verbal or written, which contradicts or violates the West Virginia Constitution, West Virginia Code or West Virginia Code of State Rules is void and of no effect.

21. COMPLIANCE WITH LAWS: Vendor shall comply with all applicable federal, state, and local laws, regulations and ordinances. By submitting a bid, Vendor acknowledges that it has reviewed, understands, and will comply with all applicable laws, regulations, and ordinances.

SUBCONTRACTOR COMPLIANCE: Vendor shall notify all subcontractors providing commodities or services related to this Contract that as subcontractors, they too are required to comply with all applicable laws, regulations, and ordinances. Notification under this provision must occur prior to the performance of any work under the contract by the subcontractor.

22. ARBITRATION: Any references made to arbitration contained in this Contract, Vendor's bid, or in any American Institute of Architects documents pertaining to this Contract are hereby deleted, void, and of no effect.

23. MODIFICATIONS: This writing is the parties' final expression of intent. Notwithstanding anything contained in this Contract to the contrary no modification of this Contract shall be binding without mutual written consent of the Agency, and the Vendor, with approval of the Property and Procurement Office and the Attorney General's office (Attorney General approval is as to form only). Any change to existing contracts that adds work or changes contract cost, and were not included in the original contract, must be approved by the Property and Procurement Office and the Attorney General's Office (as to form) prior to the implementation of the change or commencement of work affected by the change.

24. WAIVER: The failure of either party to insist upon a strict performance of any of the terms or provision of this Contract, or to exercise any option, right, or remedy herein contained, shall not be construed as a waiver or a relinquishment for the future of such term, provision, option, right, or

remedy, but the same shall continue in full force and effect. Any waiver must be expressly stated in writing and signed by the waiving party.

25. SUBSEQUENT FORMS: The terms and conditions contained in this Contract shall supersede any and all subsequent terms and conditions which may appear on any form documents submitted by Vendor to the Agency such as price lists, order forms, invoices, sales agreements, or maintenance agreements, and includes internet websites or other electronic documents. Acceptance or use of Vendor's forms does not constitute acceptance of the terms and conditions contained thereon.

26. ASSIGNMENT: Neither this Contract nor any monies due, or to become due hereunder, may be assigned by the Vendor without the express written consent of the Agency, the Property and Procurement Office, the Attorney General's office (as to form only), and any other government agency or office that may be required to approve such assignments.

27. WARRANTY: The Vendor expressly warrants that the goods and/or services covered by this Contract will: (a) conform to the specifications, drawings, samples, or other description furnished or specified by the Agency; (b) be merchantable and fit for the purpose intended; and (c) be free from defect in material and workmanship.

28. STATE EMPLOYEES: State employees are not permitted to utilize this Contract for personal use and the Vendor is prohibited from permitting or facilitating the same.

29. BANKRUPTCY: In the event the Vendor files for bankruptcy protection, the State of West Virginia may deem this Contract null and void and terminate this Contract without notice.

30. PRIVACY, SECURITY, AND CONFIDENTIALITY: The Vendor agrees that it will not disclose to anyone, directly or indirectly, any such personally identifiable information or other confidential information gained from the Agency, unless the individual who is the subject of the information consents to the disclosure in writing or the disclosure is made pursuant to the Agency's policies, procedures, and rules. Vendor further agrees to comply with the Confidentiality Policies and Information Security Accountability Requirements, set forth in <http://www.state.wv.us/admin/purchase/privacy/default.html>.

31. YOUR SUBMISSION IS A PUBLIC DOCUMENT: Vendor's entire response to the Solicitation and the resulting Contract are public documents. As public documents, they will be disclosed to the public following the bid/proposal opening or award of the contract, as required by the competitive bidding laws of W. Va. Code §§ 5A-3-1 et seq., 5-22-1 et seq., and 5G-1-1 et seq. and the Freedom of Information Act W. Va. Code §§ 29B-1-1 et seq.

DO NOT SUBMIT MATERIAL YOU CONSIDER TO BE CONFIDENTIAL, A TRADE SECRET, OR OTHERWISE NOT SUBJECT TO PUBLIC DISCLOSURE.

Submission of any bid, proposal, or other document to the Property and Procurement Office constitutes your explicit consent to the subsequent public disclosure of the bid, proposal, or document. The Property and Procurement Office will disclose any document labeled "confidential," "proprietary," "trade secret," "private," or labeled with any other claim against public disclosure of the documents, to include any "trade secrets" as defined by W. Va. Code § 47-22-1 et seq. All submissions are subject to public disclosure without notice.

32. LICENSING: In accordance with West Virginia Division of Natural Resources Series IV Purchasing Guidelines and Policies, §6.1.d.1., Vendor must be licensed and in good standing in accordance with any and all state and local laws and requirements by any state or local agency of West Virginia, including, but not limited to, the West Virginia Secretary of State's Office, the West Virginia Tax Department, West Virginia Insurance Commission, or any other state agency or political subdivision. Upon request, the Vendor must provide all necessary releases to obtain information to enable the Property and Procurement Office's Chief Procurement Officer or the Agency to verify that the Vendor is licensed and in good standing with the above entities.

SUBCONTRACTOR COMPLIANCE: Vendor shall notify all subcontractors providing commodities or services related to this Contract that as subcontractors, they too are required to be licensed, in good standing, and up-to-date on all state and local obligations as described in this section. Obligations related to political subdivisions may include, but are not limited to, business licensing, business and occupation taxes, inspection compliance, permitting, etc. Notification under the provision must occur prior to performance of any work under the contract by the subcontractor.

33. ANTITRUST: In submitting a bid to, signing a contract with, or accepting an Award Document from any agency of the State of West Virginia, the Vendor agrees to convey, sell, assign, or transfer to the State of West Virginia all rights, title, and interest in and to all causes of action it may now or hereafter acquire under the antitrust laws of the United States and the State of West Virginia for price fixing and/or unreasonable restraints of trade relating to the particular commodities or services purchased or acquired by the State of West Virginia. Such assignment shall be made and become effective at the time the purchasing agency tenders the initial payment to Vendor.

34. VENDOR CERTIFICATIONS: By signing its bid or entering into this Contract, Vendor certifies (1) that its bid or offer was made without prior understanding, agreement, or connection with any corporation, firm, limited liability company, partnership, person or entity submitting a bid or offer for the same material, supplies, equipment or services; (2) that its bid or offer is in all respects fair and without collusion or fraud; (3) that this Contract is accepted or entered into without any prior understanding, agreement, or connection to any other entity that could be considered a violation of law; and (4) that it has reviewed this Solicitation in its entirety; understands the requirements, terms and conditions, and other information contained herein.

Vendor's signature on its bid or offer also affirms that neither it nor its representatives have any interest, nor shall acquire any interest, direct or indirect, which would compromise the performance of its services hereunder. Any such interests shall be promptly presented in detail to the Agency. The individual signing this bid or offer on behalf of Vendor certifies that he or she is authorized by the Vendor to execute this bid or offer or any documents related thereto on Vendor's behalf; that he or she is authorized to bind the Vendor in a contractual relationship; and that, to the best of his or her knowledge, the Vendor has properly registered with any State agency that may require registration.

35. VENDOR RELATIONSHIP: The relationship of the Vendor to the State shall be that of an independent contractor and no principal-agent relationship or employer-employee relationship is contemplated or created by this Contract. The Vendor as an independent contractor is solely liable for the acts and omissions of its employees and agents. Vendor shall be responsible for selecting, supervising, and compensating any and all individuals employed pursuant to the terms of this Solicitation and resulting contract. Neither the Vendor, nor any employees or subcontractors of the

Vendor, shall be deemed to be employees of the State for any purpose whatsoever. Vendor shall be exclusively responsible for payment of employees and contractors for all wages and salaries, taxes, withholding payments, penalties, fees, fringe benefits, professional liability insurance premiums, contributions to insurance and pension, or other deferred compensation plans, including but not limited to, Workers' Compensation and Social Security obligations, licensing fees, etc. and the filing of all necessary documents, forms, and returns pertinent to all of the foregoing.

Vendor shall hold harmless the State and shall provide the State and Agency with a defense against any and all claims including, but not limited to, the foregoing payments, withholdings, contributions, taxes, Social Security taxes, and employer income tax returns.

36. INDEMNIFICATION: The Vendor agrees to indemnify, defend, and hold harmless the State and the Agency, their officers, and employees from and against: (1) Any claims or losses for services rendered by any subcontractor, person, or firm performing or supplying services, materials, or supplies in connection with the performance of the Contract; (2) Any claims or losses resulting to any person or entity injured or damaged by the Vendor, its officers, employees, or subcontractors by the publication, translation, reproduction, delivery, performance, use, or disposition of any data used under the Contract in a manner not authorized by the Contract, or by Federal or State statutes or regulations; and (3) Any failure of the Vendor, its officers, employees, or subcontractors to observe State and Federal laws including, but not limited to, labor and wage and hour laws.

37. PURCHASING AFFIDAVIT: In accordance with West Virginia Code §5A-3-10a and 5-22-1(i), the State is prohibited from awarding a contract to any bidder that owes a debt to the State or to a political subdivision of the State. Vendors are required to sign, notarize, and submit the Purchasing Affidavit to the Agency affirming under oath that it is not in default on any monetary obligation owed to the State or a political subdivision of the State.

38. ADDITIONAL AGENCY AND LOCAL GOVERNMENT USE: This Contract may be utilized by other agencies, spending units, and political subdivisions of the State of West Virginia; county, municipal, and other local government bodies; and school districts ("Other Government Entities"). Any extension of this Contract to the aforementioned, Other Government Entities must be on the same prices, terms, and conditions as those offered and agreed to in this Contract, provided that such extension is in compliance with the applicable laws, rules, and ordinances of the Other Government Entity. If the Vendor does not wish to extend the prices, terms, and conditions of its bid and subsequent contract to the Other Government Entities, the Vendor must clearly indicate such refusal in its bid. A refusal to extend this Contract to the Other Government Entities shall not impact or influence the award of this Contract in any manner.

39. CONFLICT OF INTEREST: Vendor, its officers or members or employees, shall not presently have or acquire an interest, direct or indirect, which would conflict with or compromise the performance of its obligations hereunder. Vendor shall periodically inquire of its officers, members, and employees to ensure that a conflict of interest does not arise. Any conflict of interest discovered shall be promptly presented in detail to the Agency.

40. REPORTS: Vendor shall provide the Agency with the following reports identified by a checked box below:

Such reports as the Agency may request. Requested reports may include, but are not limited to, quantities purchased, agencies utilizing the contract, total contract expenditures by agency, etc.

[] Quarterly reports detailing the total quantity of purchases in units and dollars, along with a listing of purchases by agency.

41. PREFERENCE FOR USE OF DOMESTIC STEEL PRODUCTS: Except when authorized by the Director of the Purchasing Division pursuant to W. Va. Code § 5A-3-56, no contractor may use or supply steel products for a State Contract Project other than those steel products made in the United States. A contractor who uses steel products in violation of this section may be subject to civil penalties pursuant to W. Va. Code § 5A-3-56. As used in this section:

- a. “State Contract Project” means any erection or construction of, or any addition to, alteration of or other improvement to any building or structure, including, but not limited to, roads or highways, or the installation of any heating or cooling or ventilating plants or other equipment, or the supply of and materials for such projects, pursuant to a contract with the State of West Virginia for which bids were solicited on or after June 6, 2001.
- b. “Steel Products” means products rolled, formed, shaped, drawn, extruded, forged, cast, fabricated or otherwise similarly processed, or processed by a combination of two or more or such operations, from steel made by the open hearth, basic oxygen, electric furnace, Bessemer or other steel making process. The Purchasing Division Director may, in writing, authorize the use of foreign steel products if:
- c. The cost for each contract item used does not exceed one tenth of one percent (.1%) of the total contract cost or two thousand five hundred dollars (\$2,500.00), whichever is greater. For the purposes of this section, the cost is the value of the steel product as delivered to the project; or
- d. The Director of the Purchasing Division determines that specified steel materials are not produced in the United States in sufficient quantity or otherwise are not reasonably available to meet contract requirements.

42. PREFERENCE FOR USE OF DOMESTIC ALUMINUM, GLASS, AND STEEL: In accordance with W. Va. Code § 5-19-1 et seq., and W. Va. CSR § 148-10-1 et seq., for every contract or subcontract, subject to the limitations contained herein, for the construction, reconstruction, alteration, repair, improvement or maintenance of public works or for the purchase of any item of machinery or equipment to be used at sites of public works, only domestic aluminum, glass or steel products shall be supplied unless the spending officer determines, in writing, after the receipt of offers or bids, (1) that the cost of domestic aluminum, glass or steel products is unreasonable or inconsistent with the public interest of the State of West Virginia, (2) that domestic aluminum, glass or steel products are not produced in sufficient quantities to meet the contract requirements, or (3) the available domestic aluminum, glass, or steel do not meet the contract specifications. This provision only applies to public works contracts awarded in amount more than fifty thousand dollars (\$50,000) or public works contracts that require more than ten thousand pounds of steel products.

The cost of domestic aluminum, glass, or steel products may be unreasonable if the cost is more than twenty percent (20%) of the bid or offered price for foreign made aluminum, glass, or steel products. If the domestic aluminum, glass or steel products to be supplied or produced in a “substantial labor surplus area”, as defined by the United States Department of Labor, the cost of domestic aluminum, glass, or steel products may be unreasonable if the cost is more than thirty percent (30%) of the bid or offered price for foreign made aluminum, glass, or steel products.

This preference shall be applied to an item of machinery or equipment, as indicated above, when the item is a single unit of equipment or machinery manufactured primarily of aluminum, glass or

steel, is part of a public works contract and has the sole purpose or of being a permanent part of a single public works project. This provision does not apply to equipment or machinery purchased by a spending unit for use by that spending unit and not as part of a single public works project.

All bids and offers including domestic aluminum, glass or steel products that exceed bid or offer prices including foreign aluminum, glass or steel products after application of the preferences provided in this provision may be reduced to a price equal to or lower than the lowest bid or offer price for foreign aluminum, glass or steel products plus the applicable preference. If the reduced bid or offer prices are made in writing and supersede the prior bid or offer prices, all bids or offers, including the reduced bid, or offer prices, will be reevaluated in accordance with this rule.

43. INTERESTED PARTY SUPPLEMENTAL DISCLOSURE: W. Va. Code § 6D-1-2 requires that for contracts with an actual or estimated value of at least \$1 million, the vendor must submit to the Agency a supplemental disclosure of interested parties reflecting any new or differing interested parties to the contract, which were not included in the original preaward interested party disclosure, within 30 days following the completion or termination of the contract. A copy of that form is included with this solicitation or can be obtained from the WV Ethics Commission. This requirement does not apply to publicly traded companies listed on a national or international stock exchange. A more detailed definition of interested parties can be obtained from the form referenced above.

DESIGNATED CONTACT: Vendor appoints the individual identified in this Section as the Contract Administrator and the initial point of contact for matters relating to this Contract.

Ms. Sarah Veselka, WV Office Project Manager

(Name, Title)

Sarah Veselka, Project Manager

(Printed Name and Title)

129 Greenbag Rd., Morgantown, WV 26501

(Address)

800-940-4025

(Phone Number) / (Fax Number)

(email address)

CERTIFICATION AND SIGNATURE: By signing below, or submitting documentation through wvOASIS, I certify that I have reviewed this Solicitation in its entirety; that I understand the requirements, terms and conditions, and other information contained herein; that this bid, offer or proposal constitutes an offer to the State that cannot be unilaterally withdrawn; that the product or service proposed meets the mandatory requirements contained in the Solicitation for that product or service, unless otherwise stated herein; that the Vendor accepts the terms and conditions contained in the Solicitation, unless otherwise stated herein; that I am submitting this bid, offer or proposal for review and consideration; that I am authorized by the vendor to execute and submit this bid, offer, or proposal, or any documents related thereto on vendor's behalf; that I am authorized to bind the vendor in a contractual relationship; and that to the best of my knowledge, the vendor has properly registered with any State agency that may require registration.

EnviroScience, Inc.

(Company)

(Authorized Signature) (Representative Name, Title)

Gregory F. Zimmerman, Vice President

(Printed Name and Title of Authorized Representative)

8/17/2020

(Date)

800-940-4025

(Phone Number) (Fax Number)

330-688-3858

REQUEST FOR QUOTATION
West Virginia Division of Natural Resources-Wildlife Resources Section
Mussel Survey for St. Albans Ramp and Dock

SPECIFICATIONS

- 1. PURPOSE AND SCOPE:** The West Virginia Division of Natural Resources is soliciting bids on behalf of Wildlife Resources Section to establish a contract for the performance of a mussel survey and possible relocation at the St. Albans Roadside Park in St. Albans, WV.

The Kanawha River in Kanawha County, West Virginia is identified as a High-Quality Water Group 4 Mussel Stream, which is known to support federally endangered species of freshwater mussels. The proposed in-stream activities included in this project require a mussel survey to be conducted in order to assess the potential impacts to the mussel populations within the limits of the construction project. This freshwater mussel survey shall follow the current West Virginia Mussel Survey Protocols (WVMSP) and be conducted by a federally permitted, West Virginia qualified mussel surveyor.

- 2. DEFINITIONS:** The terms listed below shall have the meanings assigned to them below. Additional definitions can be found in section 2 of the General Terms and Conditions.

2.1 “Contract Services” means a mussel survey and relocation effort as more fully described in these specifications.

2.2 “Pricing Page” means the pages, contained wvOASIS or attached hereto as Exhibit A, upon which Vendor should list its proposed price for the Contract Services.

2.3 “Solicitation” means the official notice of an opportunity to supply the State with goods or services that is published by the West Virginia Division of Natural Resources.

2.4 “WVMSP” means West Virginia Mussel Survey Protocols.

- 3. QUALIFICATIONS:** Vendor, or Vendor’s staff if requirements are inherently limited to individuals rather than corporate entities, shall have the following minimum qualifications:

3.1. Vendor or Vendor’s Staff shall meet the Surveyor Qualifications as outlined in the March 2020, West Virginia Mussel Survey Protocols.

REQUEST FOR QUOTATION
West Virginia Division of Natural Resources-Wildlife Resources Section
Mussel Survey for St. Albans Ramp and Dock

4. MANDATORY REQUIREMENTS:

4.1 Mandatory Contract Services Requirements and Deliverables: Contract Services must meet or exceed the mandatory requirements listed below:

4.1.1 Phase 1 Mussel Survey. A Phase I mussel survey shall be conducted to determine whether a diverse mussel population exists, to delineate these populations if they exist, and to establish the framework for a follow-up Phase II Mussel Survey. Reference proposed site map (Exhibit B).

4.1.1.1 Phase 1 Mussel Survey shall comply with Phase 1 survey protocols outlined in section 7.4.5 of the most recent WVMSP (Exhibit C).

4.1.2 Phase 2 Mussel Survey. If results of the Phase I Mussel Survey results reach a triggering level, a Phase II mussel survey shall be conducted to collect additional data regarding the mussel assemblage and to determine whether endangered species may occur within the project limits. Phase II activities may be conducted during the Phase I survey, if conditions are present to warrant the survey.

4.1.2.1 Phase II Mussel Survey shall comply with Phase II survey protocols outlined in section 7.4.5 of the most recent WVMSP.

4.1.3 Mussel Relocation If mussels are present within the project limits, they shall be relocated utilizing methods outlined in the WVMSP.

4.1.3.1 Mussel Relocation efforts must follow appropriate guidance and approvals as outline in Section 8 for Group 4 streams in the most recent WVMSP.

4.1.3.2 Since the density of mussels in the area of potential relocation is unknown, bids will include a daily rate of cost. Actual billing will be for actual number of days spent relocating and will be added to the contract via change order.

REQUEST FOR QUOTATION
West Virginia Division of Natural Resources-Wildlife Resources Section
Mussel Survey for St. Albans Ramp and Dock

5. CONTRACT AWARD:

5.1 Contract Award: The Contract is intended to provide the Agency with a purchase price for the Contract Services. The Contract shall be awarded to the Vendor that provides the Contract Services meeting the required specifications for the lowest overall total cost as shown on the Pricing Pages.

5.2 Pricing Page: Vendor should complete the Pricing Page in full by filling in the appropriate bid price for each individual service component. Vendor should complete the Pricing Page in full as failure to complete the Pricing Page in its entirety may result in Vendor's bid being disqualified.

6. PERFORMANCE: Vendor and Agency shall agree upon a schedule for performance of Contract Services and Contract Services Deliverables, unless such a schedule is already included herein by Agency. In the event that this Contract is designated as an open-end contract, Vendor shall perform in accordance with the release orders that may be issued against this Contract.

7. PAYMENT: Agency shall pay per completed line item as shown on the Pricing Pages, for all Contract Services performed and accepted under this Contract. Vendor shall accept payment in accordance with the payment procedures of the State of West Virginia.

8. TRAVEL: Vendor shall be responsible for all mileage and travel costs, including travel time, associated with performance of this Contract. Any anticipated mileage or travel costs may be included in the flat fee or hourly rate listed on Vendor's bid, but such costs will not be paid by the Agency separately.

9. FACILITIES ACCESS: Performance of Contract Services may require access cards and/or keys to gain entrance to Agency's facilities. In the event that access cards and/or keys are required:

9.1. Vendor must identify principal service personnel which will be issued access cards and/or keys to perform service.

9.2. Vendor will be responsible for controlling cards and keys and will pay replacement fee, if the cards or keys become lost or stolen.

9.3. Vendor shall notify Agency immediately of any lost, stolen, or missing card or key.

REQUEST FOR QUOTATION
West Virginia Division of Natural Resources-Wildlife Resources Section
Mussel Survey for St. Albans Ramp and Dock

- 9.4. Anyone performing under this Contract will be subject to Agency's security protocol and procedures.
- 9.5. Vendor shall inform all staff of Agency's security protocol and procedures.

10. VENDOR DEFAULT:

10.1. The following shall be considered a vendor default under this Contract.

- 10.1.1. Failure to perform Contract Services in accordance with the requirements contained herein.
- 10.1.2. Failure to comply with other specifications and requirements contained herein.
- 10.1.3. Failure to comply with any laws, rules, and ordinances applicable to the Contract Services provided under this Contract.
- 10.1.4. Failure to remedy deficient performance upon request.

10.2. The following remedies shall be available to Agency upon default.

- 10.2.1. Immediate cancellation of the Contract.
- 10.2.2. Immediate cancellation of one or more release orders issued under this Contract.
- 10.2.3. Any other remedies available in law or equity.

11. MISCELLANEOUS:

11.1. **Contract Manager:** During its performance of this Contract, Vendor must designate and maintain a primary contract manager responsible for overseeing Vendor's responsibilities under this Contract. The Contract manager must be available during normal business hours to address any customer service or other issues related to this Contract. Vendor should list its Contract manager and his or her contact information below.

Contract Manager: Sarah Veselka, EnviroScience WV Office
Telephone Number: 800-940-4025
Fax Number: 330-688-3858
Email Address: SVeselka@EnviroScienceInc.com

Exhibit A - Pricing Page

West Virginia Division of Natural Resources-Wildlife Resources Section Mussel Survey for St. Albans Ramp and Dock

Item	Description	Quantity	Unit of Measure	Unit Price	Extended Cost
4.1.1	Phase I Mussel Survey	1	LS	\$19,546.00	\$19,546.00
4.1.2	Phase II Mussel Survey	1	LS	\$0.00	\$0.00*
4.1.3	Mussel Relocation Services (Daily Rate)	1*	Day	\$6,053.00	\$6,053.00
TOTAL BID AMOUNT:					\$25,599.00
*A Phase II Mussel Survey is not required at this site based on the WVMSP, stream group type, and information provided in the RFP. We have submitted a \$0 cost for 4.1.2 as the price is not applicable to the project as this work should not be required.					

8/17/2020

Gregory F. Zimmerman, Corporate Vice President

Authorized Vendor Signature

Date

* Quantities are estimated for bidding purposes only. Actual quantities will be added via contract change order as necessary.

West Virginia Mussel Survey Protocols

March 2020



Middle Island Creek mussels including federally endangered Snuffbox. Photo by Janet L. Clayton

Prepared By

West Virginia Division of Natural Resources
Wildlife Resources Section
Elkins Operation Center
Elkins, WV 26241

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1.0 Introduction

The state owns all wildlife in West Virginia (§ 20-2-3), may classify by regulation species into categories necessary for the purposes of control and protection (§ 20-1-7 (4)), and may prescribe the locality, manner and method by which various species of wildlife may be taken (§ 20-1-7 (5), § 20-2-5(26), § 20-2-27). All mussels are protected in the State of West Virginia pursuant to West Virginia §20-2-4 and CSR 58-60-5.11. In addition, ten federally endangered freshwater mussel species (ES) are known to occur in the State. These species are protected by the Endangered Species Act (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.). Impacts to State and Federally protected mussels and their habitats should be avoided and minimized to the maximum extent practicable. To assist in ensuring compliance with all state and federal laws, all streams that contain mussels or potential mussel habitat must be surveyed prior to any proposed streambed disturbance. Sites and areas where mussels are known to occur or are found to occur during surveys or where mussel habitat is known to occur or found to occur should be avoided whenever possible. The West Virginia Division of Natural Resources maintains and makes available a current mussel stream list via shapefile or kmz file on the West Virginia Division of Natural Resources' (WVDNR) website which can be used for survey planning purposes: <http://www.wvdnr.gov/Mussels/Main.shtm>.

The protocols herein are designed to document the potential presence or absence of federally listed mussel species as well as provide for the long-term sustainability of native mussel communities within West Virginia. These protocols were developed to provide consistent and standardized guidance to project applicants about acceptable survey methods and levels of effort for different types of projects that are commonly encountered. The current accepted protocol and supporting materials can be found at the WVDNR website mussel page. This Protocol is not designed to dictate research projects, but only those surveys used to conduct environmental review regarding instream impacts.

2.0 Stream Groups in WV

For ease of determining the appropriate survey type where state and federally protected mussels may occur, West Virginia mussel streams have been placed into four groups. An NHD shapefile of mussel streams is posted on the website and will assist in determining stream reaches requiring surveys. Using the NHD mussel stream shapefile, locate the point of anticipated stream impact. If it falls on a highlighted stream then mussel issues must be addressed. The metadata associated with the file also indicates to which group the stream reach belongs. This stream layer is applicable to direct effect areas only. A KMZ version is also provided on the website. If the impact area is upstream of a highlighted Group 2 stream reach then the applicant is still required to address indirect effects with the USFWS (such as improved sediment and erosion control).

Group 1: High Quality Streams (as listed by the WVDNR and having potential habitat for mussels) and State listed mussel streams, ES not expected.

Group 2: Small to mid-sized streams with ES expected.

Group 2.5: These are typically small streams that join either a Group 2 or Group 4 Stream which may potentially contain ES and thus the lower ½ mile of the stream is considered a Group 2.

Group 3: Large Rivers where ES are not expected. These include the Ohio River upstream (US) of Hannibal Lock and Dam and the Monongahela River.

Group 4: Large Rivers where ES are expected. These include the Ohio River downstream (DS) of Hannibal Lock and Dam, Little Kanawha River (slack-water section adjoining the Ohio River) and the Kanawha River downstream of Kanawha Falls.

3.0 Justifications and Analysis of Alternatives

Various state and federal laws, regulations, and policies require that impacts to aquatic resources, including freshwater mussels, endangered species and their habitats, be avoided and minimized to the maximum extent practicable. For example, Clean Water Act 404 (b) (1) Guidelines state that “no discharge of dredged or fill material shall be permitted if there is a practical alternative to the proposed discharge which would have less adverse impact on the aquatic ecosystem.” The Guidelines further specify that the evaluation of practical alternatives should include alternative construction methods that do not involve dredge or fill material into waters of the U.S. and alternative locations including “areas not presently owned by the project proponent but which could reasonably be obtained, utilized, expanded or managed in order to fulfill the basic purpose of the proposed activity” (§ 230.10 (a) (2)). Nationwide permit pre-construction notifications for the U.S. Army Corps of Engineers in West Virginia must include a “description of the ways in which the proposed project has been designed to avoid and minimize adverse impacts”. The General Conditions that apply to all nationwide permits also specify that “no activity may occur in areas of concentrated shellfish populations,” unless the activity is related to various shellfish harvesting or restoration activities. Finally, the Endangered Species Act, through the Section 7 consultation process, requires that Federal agencies consult with the U.S. Fish and Wildlife Service (USFWS) to identify and implement measures to avoid or minimize adverse effects to federally listed species, prior to issuing any permits that may result in the incidental take of federally listed species.

Project proponents frequently can save time and money, and avoid delays in their project permitting, by developing project alternatives and coordinating with the WVDNR and USFWS early in their planning process. Over many project consultations involving impacts to mussel populations, the USFWS and WVDNR have found that practical alternatives to avoid and minimize impacts can be developed for almost all projects.

To ensure that projects are implemented consistent with regulations and to minimize project delays, all survey proposals submitted to the USFWS and WVDNR should include documentation that avoidance is not possible and should also include an alternatives analysis. Survey permits may not be approved if the applicant does not provide adequate justification that instream impacts cannot be avoided. **Discussion of alternatives and how impacts will be avoided and minimized shall be included in the scope of work.**

3.1 Alternative Construction Methods:

Projects should first be designed to avoid and minimize impacts to waters of the U.S. including impacts to streams containing mussel populations to the maximum extent practical. For example, where possible, road crossings should be designed to completely span mussel streams. Routes for pipelines should be designed to avoid crossing mussel streams and minimize the number of stream crossings.

Activities such as pipelines, waterline or other utility line crossings, shall address alternative methods such as horizontal directional drilling (HDD). Trenchless methods should be the first priority over open trenching to possibly minimize impacts to mussels and avoid habitat degradation and fragmentation. Various trenchless methods are available. Horizontal directional drilling should only be considered if there is not a high risk of discharge of drilling materials (commonly called an inadvertent return or release (IR)). The WVDNR and USFWS may request additional site-specific HDD information to evaluate the risk of an IR occurring, including, but not limited to: the proposed drilling depth of the pipe beneath the waterbody; engineering and/or geologic evaluations (commonly referred to as geotechnical analyses); figures showing entry

and exit holes for the pipe; information on nearby HDD's that the applicant has performed; and the size (diameter) and length of pipe proposed for installation. An IR response plan shall be provided along with an analysis on the potential for such an event to occur. If boring is not being proposed, documentation as to why this alternative is not practicable shall be provided. This documentation shall include detailed information on project constraints, and engineering and/or geologic evaluations sufficient to justify why this construction method cannot be implemented or would have a high likelihood of failure. Pipelines subject to NWP 12, West Virginia Water Quality Certification are required to have an inadvertent Return Contingency Plan certified by a West Virginia Professional Engineer (Special Condition H).

A contingency/IR response plan¹ shall include contact information for:

1. USACOE: Pittsburgh District (412-395-7155), Huntington District (304-399-5210)
2. WVDEP – Emergency Spill-Line: 800-642-3074
3. USFWS West Virginia Field Office (if Group 2 or 4): 304- 866-3858
4. Nearest downstream municipalities:
5. WVDNR, Coordination Unit: 304-637-0245

Information to be available for reporting:

1. Extent of the IR
2. Volume of discharge
3. Safety Data Sheets (SDS) of additives to drilling fluids
4. Coordinates for the IR
5. Photo documentation provided by the Environmental Inspector

Information to be included in the plan:

1. Environmental Inspector will be on site during all boring.
2. Provide information on availability of recovery equipment and containment materials. (For example, distance/time to nearest vac truck)
3. Plan for containment of released materials, and disposal of recovered materials.

3.2 Alternative Locations:

Moving project locations slightly upstream or downstream, or making minor modifications to the project design, is often sufficient to avoid and minimize impacts to mussel populations including endangered species and may allow projects to proceed with minimal delays. Any project that has potential alternative locations for activities (example: bridge alignments, pipeline crossings) shall include surveys for alternative locations. We recommend a phased approach to prioritize sites with follow-up surveys within the least impacting project site selected. All proposals shall include survey areas large enough to include all alternative locations.

4.0 Surveyor Qualifications

Only approved surveyors will be permitted to conduct/contract mussel surveys in WV. Approval is a two part process. Once approved, the surveyor must meet specific standards to maintain certification. This criteria is established for those conducting surveys for environmental review purposes.

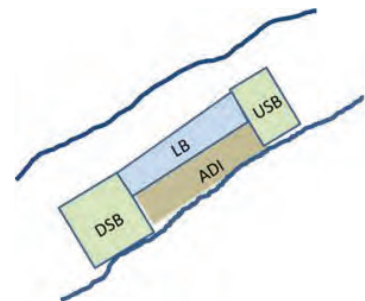
- Identification testing is required through the WVDNR.

¹ The WVDNR and USFWS only need to be notified for IR's that occur within or near aquatic environments.

- Approved for endangered species streams (Groups 2 and 4): overall score of 85% and score of 100% on the endangered species.
- Non-endangered mussel streams (Groups 1 and 3): overall score of 85%.
- The test is closed book and closed shell (simulating live condition).
- Must possess adequate experience and submit references.
 - Endangered species streams (Groups 2 and 4): at least 3 years of field experience conducting surveys similar to the WV Mussel Survey Protocols (must have conducted at least 10 Group 2 surveys, and must have completed at least 10 Group 4 or 3 surveys within the previous 5 years) and submit two acceptable letters of reference.
 - Non-endangered species streams (Groups 1 and 3): at least 3 years of field experience conducting surveys similar to the WV Mussel Survey Protocols, completed at least 10 Group 1 and 10 Group 3 surveys within the previous 5 years and submit two acceptable letters of reference.
 - Within resume please provide description of what tasks you personally undertook for each project such as survey design, laid out survey grid, supervised staff components, surveyor, etc.
- To maintain certification the surveyor must:
 - Provide documentation that the surveyor is maintaining familiarity with WV's federally listed species through training or fieldwork. Minimum requirements based on a running two year average: Must handle 5 individuals (5 each of males and females if applicable) of each species per year in the field; or 0.5 hours per species in a museum or reference collection. Specimens can be from outside WV.
 - Provide training hours, date, and location of reference collection with approximate number of each federally listed species, by sex, handled each year.
 - If reference collection is not a recognized museum such as Ohio State University, Carnegie, etc. then the collection must have prior approval from the WVDNR Mussel Program leader.
 - Provide approximate number of each federally listed species, by sex, handled each year in the field.
 - Provide a yearly tally of number of surveys conducted by Stream Group. These may include surveys in other states and placed into equivalent Stream Group.
 - Reporting (spreadsheet available on website) is due February 15 for the previous calendar year's efforts.

5.0 Establishing Areal Extent of the Project – Project Specific Guidance

Five distinct survey areas are to be defined for each project. These include the area of direct impact (ADI), upstream buffer (USB) with the salvage portion separated out (USSB), lateral buffer (LB) with the salvage portion separated out (LSB), and downstream buffer (DSB) with the salvage portion separated out (DSSB). In addition if spudding (see Section 7.1.12) is to be conducted and the spudding area is not included in the other areas the spudding area should be designated. Table 3 (Section 10) summarizes the specific layout of buffer zones and survey areas organized by stream Group and potential project type. Where a project does not span the width of the stream, the survey widths of the USB and the DSB shall be equal to the width of the ADI and includes any associated LB applied to the ADI (Example at right).



Special considerations are discussed in more detail below.

5.1 Commercial Sand and Gravel Dredging

Because of the potential for significant long-term adverse effects to wildlife resources, applications for Commercial Sand and Gravel Dredging will be handled on a case by case basis.

5.2 Maintenance Dredging

- Instream disposal of dredge material is not covered within project specific guidance and will require additional coordination with the WVDNR and with the USFWS for Group 4 streams.
- If less than 5 years has elapsed since the last dredging of the specific site, then no additional surveys shall be required. If more than 5 years has elapsed or the previously dredged area is being expanded or moved, then mussel surveys shall be required.
- Spudding areas must also be addressed. See Spudding, Section 7.1.12. (Example 1)
- Maintenance activities covered under NWP 3 may require an additional survey, and may be subject to pre-construction notification (NWP General Condition 32).

5.3 Barge Loading Facilities (Non-Dredging Activities)

- If the activity is at an existing facility and includes installation of mooring cells, tri-ties, etc. within the current foot-print of the facility then only the ADI and surrounding buffers must be surveyed using cells. For **Group 4** streams, qualitative timed searches for species richness curve development are to be conducted around the cells. Transect surveys may be more appropriate for installation of 3 or more mooring cells. (Examples 2-4)
- For **Group 4** streams, if the proposed activity is a new facility or expansion of an active facility downstream, the survey extent shall include at a minimum 500m DSB and 150m USB and 150m LB around the ADI. The survey shall include sufficient area such that placement of structures and barge activities can be placed within the area least likely to impact mussel communities or potential habitat. If the proposed activity includes an active facility and the expansion is upstream then the survey extent shall include a 150m buffer surrounding the ADI. Transects should be placed to bisect mooring locations if known. (See section 7.1.14 for definition of active facility)
- Spudding areas must also be addressed. See Spudding, Section 7.1.12.(Example 1)
- For **Group 3** streams, if the proposed activity is a new facility or the expansion of an active facility downstream, the survey extent shall include at a minimum 150m DSB and 50m USB and 50m LB around the ADI. The survey shall include sufficient area such that placement of structures and barge activities can be placed within the area least likely to impact mussel communities or potential habitat. If the proposed activity includes an active facility and the expansion is upstream then the survey extent shall include a 50m buffer surrounding the ADI. Transects should be placed to bisect mooring locations if known. (See section 7.1.14 for definition of active facility). If the proposed activity is a new facility then WVDNR review of mussel survey results must be conducted prior to approval of mussel salvage.
- Variances in buffer distance due to close proximity of another active facility's ADI will be addressed on a case by case basis.

5.4 Large Scoping Projects (such as new barge loading facilities, determining alignment for bridges, or determining location for any instream construction such as intakes and discharges, when large-scale data can be used to help develop final project designs, and/or more detailed site-specific surveys)

- Transect spacing shall not exceed 100m in Group 3 and 4 streams. In Group 1 and 2 streams transect spacing shall not exceed 25m on average. The transects should be placed in the best available habitat but maintain an average 25m spacing. Such transect layouts are not designed to find ES but to document mussel concentrations to aid in project design. Once the project design is drafted then a Phase 1 and potentially a Phase 2 survey would be required. This type of survey assists in the first step which is to avoid impacts.
- Transects should be placed throughout any potential alternative areas plus buffer zones.

5.5 Bridge Projects

- **Note: hydraulic changes occur with causeway construction and shall be considered as part of the ADI. If a causeway is deemed necessary, temporary bridges incorporated into the causeway design is the preferred method.**
- The ADI shall include any area that may be impacted by bridge construction, demolition, causeway, staging areas, etc. Any area that may be physically and hydraulically impacted shall be included in the survey extent.
- For new bridges, or complete removal and replacement of existing bridges, initial surveys shall include all areas that can be used for alternative construction sites.
- If no other impacts, the ADI shall include a 5m buffer surrounding a pier.

5.6 Waterline/Pipeline and other Corridor Disturbances

- Discharge Outfalls, including those with diffusers, shall include the mixing zone (MZ) and appropriate buffer as described.
- If the pipe is not trenched (example – suspended on pillars), a 5m buffer is acceptable on the DS extent of the ADI. Depending on discharge composition of the outfall, relocation of mussels from the MZ may be required. State water quality standards are not necessarily protective of freshwater mussels. Therefore, a review of the literature should be undertaken to determine this. For example, state water quality standard for chloride is 230mg/L yet the level shown to affect freshwater mussels can be as low as 72mg/L. The MZ for the purposes of the mussel survey and/or relocation would include any area where the effluent concentration could be above the level that could affect mussels, which could be larger than the permitted MZ.

5.7 Shoreline Structures (example riprapp)

- If the ADI near bank is anticipated to be more impacted than further out, then two cells should be appropriately sized to fit the areas. For example, you have an undulating shoreline which will be riprapped. The keyway will definitely impact the first 3m but may or may not impact out to 10m. It is better to conduct a 3m wide cell and then another 7m wide cell. If it is all covered in one cell, and mussels are found only in the outer portion of the cell, it could affect management decisions and require salvage when none is needed.

- If work is not from top of bank then spudding must be addressed. See Spudding, Section 7.1.12.

5.8 Water Withdrawals

- Water withdrawals that do not impact the stream bottom may not require mussel surveys. However, withdrawals on Group 2 streams must include additional coordination with the USFWS and WVDNR and an approved monitoring plan and evaluation of areas that could be affected by the water withdrawal may be required.
- Withdrawal locations planned to be in place for greater than five years are considered permanent and do require a mussel survey.
- Please see the website for further guidance on water withdrawals.

5.8.1 Water Intake Nearshore

- Water Intake structures covered here are associated with the stream edge. Those that extend into the stream greater than 2.5m would be covered under waterline/pipeline above.
- If work is not from the shore then spudding must be addressed. See Spudding, Section 7.1.12.

5.9 Lake/Stream Drawdowns

This section pertains to the drop in water levels below normal levels not due to natural droughts. Examples include dropping of impoundment water levels below normal winter pool levels or causing stream drought conditions due to water withdrawals. In the case of planned activities such as dropping lake levels intentionally, impacts to mussel populations should be avoided through planning and coordination ahead of time and conducting salvage operations as warranted. Mussel stranding is not permitted and various methods can be used to avoid and minimize impacts and will be addressed on a case by case basis. First priority, other than avoiding the situation in the first place, should be to salvage mussels prior to impact. Additional coordination may be necessary for emergency action, or drawdown outside the mussel survey period.

5.10 Non-Commercial Docks in Group 3 and 4 streams do not require a mussel survey as long as they meet all the following criteria:

- Do not extend riverward more than 10m (33ft) from low water mark (water's edge),
- Do not contain any fill material other than pilings or posts, and any shoreline protection material such as riprap is only placed above the low water mark,
- Contain 4 or fewer pilings or posts that impact an area less than a combined total of 1m²,
- Are less than 10m (32.8ft) in length,
- If within 500m (1640ft) of an island must receive site specific clearance from USFWS.
- All Group 4 Non-Commercial Docks must obtain concurrence from the USFWS.

6.0 Survey Application Requirements and Timelines

Even though standardized protocols are established for most types of projects, survey plans must be provided to appropriate State and Federal officials when applying for a scientific

collecting permit. This is to ensure that the appropriate level of effort is being applied for the given stream type and construction activity and to allow time for agency staff to review existing data from the proposed survey area and work with the applicant to design the appropriate survey extent as described below. Appropriate State and Federal officials shall be notified at least 30 days prior to the time the actual survey will occur. In addition, State and Federal agencies shall be given at least 30 days to review survey results prior to the anticipated start of any construction activity. Contact information is provided in Table 1, Section 10.0. Attempts to request variances from established protocols have led to increased review times for all projects. These protocols have been developed to address most project types and thus **variances should not be requested unless the project type is not covered or extenuating circumstances exist**. Your scope of work should be first submitted as you believe the project should be surveyed. Once it has been assigned to a reviewer, it will either be accepted or revisions requested.

Requests for surveys shall include a full description of the project. In Group 2 and 4 streams this is important so that effects from all aspects of the project can be evaluated, and to determine whether other federally listed resources may be affected. It is important to note that “project” includes all project features, not just the portion of the project prompting the need for a mussel survey or the submittal of a permit application (e.g., to West Virginia Department of Environmental Protection or the U. S. Army Corps of Engineers). For example, an oil or gas pipeline stream crossing project would include not only the stream crossing, but also the well pad, the roads, staging areas, impoundments and holding pits, and oil and gas lines associated with the well or well field. This data will help to better conserve mussel resources, ensure that effects from interrelated and interdependent projects are considered, evaluate cumulative impacts, and better implement recovery efforts for these species.

Activities to be conducted on any federally endangered species (ES) stream or potential ES stream (Groups 2 and 4) must have written concurrence from the USFWS prior to conducting any project activities including surveys, relocations and/or construction activities. Non-ES streams (Groups 1 and 3) require coordination with the WVDNR only.

If a survey is not completed in the permitted year the WVDNR and USFWS (if appropriate) must be notified as such. Also, the full scope of work must be resubmitted during the calendar year of the rescheduled survey as it is a new permit year.

6.1 Survey Scope Checklist: The following criteria must be included in the Scope of Work

- Full description of the project including justification, alternative(s), minimization efforts, etc. Remember the survey is being conducted to provide aid in environmental review. If the company name, purpose of the project, etc. is not included we cannot conduct an appropriate review.
- Map showing project location sufficient to delineate all pertinent impact and buffer areas on recognizable landscape features (approximately 1:24,000).
- Survey methodology.
- Figure showing survey design overlaid on project diagram.
 - Show all areas as appropriate (ADI, salvage buffer, USB, LB, DSB, MZ and spud areas). These areas are described in further detail in Section 7.1.1
- Who will be conducting the survey (“collectors” on the Protocol Form)? The approved surveyor must be on site to ID mussels and qualification of collectors (including divers) must be provided along with a QA/QC plan.
- Protocol Form.

7.0 Conducting the Survey

7.1 Definitions

7.1.1 Survey Areas include area of direct impact (ADI), upstream buffer (USB), upstream salvage buffer (USSB), downstream buffer (DSB), downstream salvage buffer (DSSB), lateral buffer (LB), and lateral salvage buffer (LSSB). The salvage zone includes the ADI, USSB, LSB, and DSSB. The spud area includes any area in which the work barge may be spudded during the project (Section 7.1.12). Mixing zone (MZ) as defined by the level known to affect mussels must be addressed for all discharge type projects.

7.1.2 Timed Search (qualitative) surveys consist of visually searching throughout a larger defined area (such as DSB, DSSB, ADI, LB, LSB, USB, USSB or mussel concentration) for a given period of time. Data must be provided separately for each of the categories listed above.

Timed searches can be applied to each Group as follows:

- **Group 1:** No need to divide into cells, although maybe considered with respect to potential mussel salvage. Cover the whole ADI or buffer area in a time period defined by the size of the area to be surveyed (timed searches within each survey area) at a rate of 0.2 min/m² in areas of heterogeneous substrate, then an additional 0.3 min/m² if mussels are found. The areas may be divided into smaller units (cells – no size limit) if the area can be stratified by habitat. For example the DSB has a large area that appears to be of poor habitat and mussels are not expected. Delineate the area and survey at rate of 0.2 min/m². The other sub area has higher potential for mussels and indeed a few were found. This area would then be required to be surveyed for an additional 0.3 min/m². (Example 5)
- **Group 2:** Timed searches are not required if using cells as each cell is its own timed search. If stream width is greater than 20m and only transects are used, then timed searches are to be used to complete the species richness curve.
- **Group 3:** Used to delineate mussel concentrations as needed,
- **Group 4:** Conduct timed searches between transects with suitable habitat (if no mussels are found along the transect), and in mussel concentrations to increase the probability of finding an ES and to develop a species richness curve (Section 7.1.7).

7.1.3 Cells are more appropriate for surveying small to mid-sized Group 2 streams and are required on Group 2 streams 20m wide or less. Cells are encouraged for all surveys except in Group 3 and 4 streams that have extensive ADI and buffer areas. In these large areas the mussel concentrations are best delineated using transects. A cell survey is conducted by dividing each survey area into a series of cells in which each cell is surveyed and data recorded separately. Minimum search effort shall be 0.2 min/m². If any mussels are found, then an additional 0.3 min/m² is required. If triggers are met then the minimum search effort required is 1min/m². Cells are required for salvage unless using moving transects (Section 7.1.10). Cell size and effort for salvage is described in Section 8.

Cells further defined by group:

- **Group 1:** Not required though may be used if needed to better apply search effort in areas with mussels and suitable habitat, no maximum size defined. Cells $\leq 25\text{m}^2$ or moving transects are required for salvage.
- **Group 2:** All streams $\leq 20\text{m}$ wide, preferred in all Group 2 streams, particularly if impact area and buffers are small. If surveying with transects, once a trigger is established, all triggered areas plus areas of similar habitat between triggered areas plus a 10m buffer surrounding are to be surveyed using cells. Maximum cell size is 25m^2 .
- **Group 3 and 4:** Small impact areas (i.e. boat ramp, mooring cell, tri-tie, water intake (near shore), or bridge pier). Maximum cell size 100m^2 .

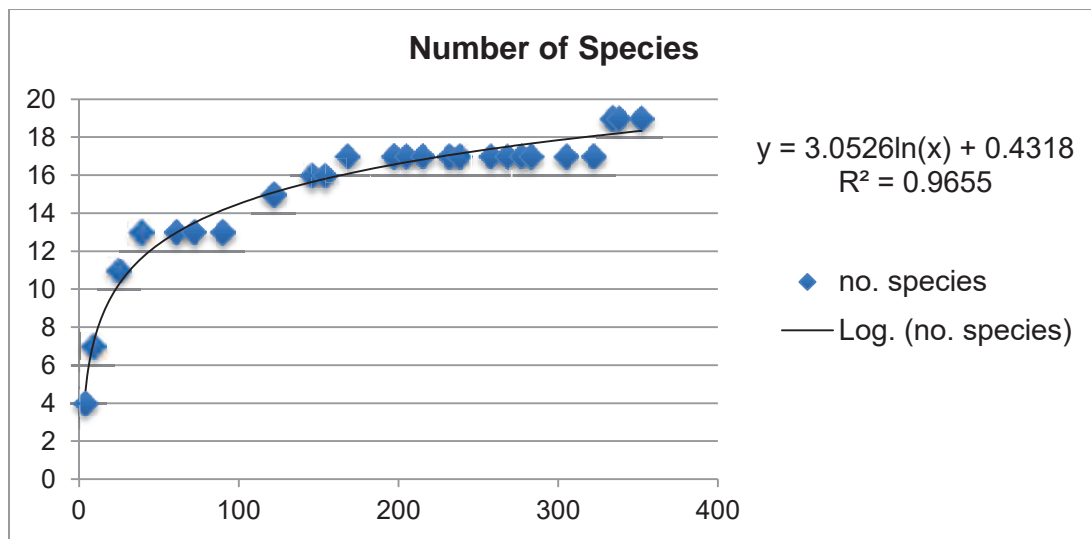
7.1.4 Transect Surveys are conducted by placing lines perpendicular to flow and subdivided into segments as noted below for each stream group. A transect survey must contain at least 500m of transect search area and consist of a minimum of five transects, three of which must be placed within the ADI. Along each transect, surveyors shall visually search (Section 7.1.9) an area 1m wide for mussels and record all data separately for each segment. The entire segment must be thoroughly covered and the minimum search effort for transects shall be $1\text{min}/\text{m}^2$ in heterogeneous substrates. The maximum transect segment length is provided below however this should be adjusted to a lesser length if a shorter distance better defines the impacts to freshwater mussels.

- **Group 1:** Transects (5m segments) may be used on large ($>50\text{m}$ wide) Group 1 streams to delineate areas which require additional survey effort. Maximum 10m transect spacing.
- **Group 2:** Transects (5m segments) may be used for Group 2 streams (greater than 20m wide) if it appears the reach may be stratified by habitat and some strata appear to have limited mussel resources. Transects could be used to delineate the habitats and mussel resources that require further survey effort by cells. If surveying with transects, once a trigger is established, all triggered areas plus areas of similar habitat between triggered areas plus a 10m buffer surrounding are to be surveyed using cells.
- **Group 3:** Transects (maximum 10m segments) may be used for large impact areas such as proposed maintenance dredging.
- **Group 4:** Transects may be used for large impact areas such as proposed maintenance dredging. If using transects, a Phase 1 survey within a Group 4 stream must include qualitative timed search surveys for development of a species richness curve. Maximum transect spacing is 10m within the ADI, and buffers 100m downstream and 50m upstream of the ADI. The maximum transect spacing within additional lateral buffers shall be 20m and additional upstream and downstream buffers shall be 25m.

7.1.5 Salvage Zone is defined as the area within the ADI containing mussels connected by similar habitat plus associated buffer areas described in Table 3 from which mussels must be relocated prior to conducting instream activities.

7.1.6 Species Richness Curve shall be developed for Group 2 and 4 streams to demonstrate that most species have been recorded. Data from samples within mussel concentration areas should be used to develop the curve. Data collected from Group 2 cells do not need supplemented with timed searches. Data from

Group 4 transects will need to be supplemented with timed searches conducted within the mussel concentration area (10min increments) until no new species are found in six consecutive samples. For example, if in bag six a new species is recorded then another six samples are required assuming no new species was found in them. The Species Richness Curve is generated by plotting cumulative number of individuals (X axis) vs. cumulative number of species (Y axis). Sufficient data should be collected to reach the plateau on this chart. For curve development, use data from all survey types with each transect segment being a sample, each cell being a sample, and each qualitative search effort of 10min is a sample. You may wish to randomize your samples for increasing statistic power. A chart depicting the curve and associated logarithmic regression line shall be provided in the report. The number of individuals required to be collected for recovery of an additional species shall be calculated using the regression model. In the example below, a total 352 individuals were collected of 19 species. Using the regression formula, it would require 611 individuals to find one additional species.



- 7.1.7 Mussel Concentrations and Potential ES areas (Groups 2 and 4):** Mussel Concentration Area is defined for purposes of determining potential for ES. The Mussel Concentration Area is defined as an area encompassing all triggered areas connected by similar habitat plus a 10m buffer surrounding it. Not detecting an ES during a Phase 1 survey does not confirm that it is not present. The presence of a diverse mussel concentration indicates ES potential. The mussel concentration area may encompass multiple areas only if they are separated by more than 20m of dissimilar or unsuitable habitat, otherwise the entire area should be surveyed. Trigger criteria are as follows:
- Group 2: 2 individual mussels within 5m of transect, otherwise 2 species not in Table 2 (Section 10) and/or density of 0.5/m² (all species combined)
 - Group 4: 3 species not in Table 2 along any 1 transect or combination of transects equal to 100m or within 100m² of cells, or within a timed search survey between transects and/or density of 0.5/m² (all species combined) within any area of the survey.

If a mussel concentration is found, then ES may be present. These areas should be avoided to the maximum extent practical. If the area cannot be avoided then a

Phase 2 survey must be undertaken as described below. The species listed in Table 2 are not used in describing a mussel concentration with ES potential due to their general habitat preferences and being commonly found in lakes and slackwater and not typically associated with the current list of ES found within West Virginia.

7.1.8 Visual or Surface Searches: A visual search includes moving cobble and woody debris; hand sweeping away silt, sand and/or small detritus; and disturbing/probing the upper 5cm (2in) of substrate in order to better view the mussels which may be there. A minimum effort of 1.0 min/m² shall be expended in areas of heterogeneous substrate and 0.5 min/m² in areas of homogenous substrate for transect surveys, 0.2 min/m² for cells without mussels and 0.5 min/m² for cells with mussels. The minimum effort for timed searches in Group 1 streams is 0.2 min/m² for areas/cells without mussels and 0.5 min/m² for areas/cells with mussels. Waterscopes are typically not a good method for conducting the above searches as the substrate is to be disturbed and probed for mussels not visible at the substrate surface. Waterscopes should not be used in water depths over 40cm deep (16in).

7.1.9 Habitat: appropriate information describing depth and habitat, based on the modified Wentworth scale, shall be recorded by cell or transect segment. Additional descriptions, such as depositional areas, detritus, scoured areas, etc., may be used for further clarification. Minimum search effort is based on the type of habitat present. A mixture of substrates such as sand and cobble are defined as heterogeneous. If there are rocks (>4in) present that require flipping and moving to look under and around them, this is heterogeneous substrate. Homogenous substrates are those that can be easily surveyed by running fingers through the substrate such as silt, loose sand and fine gravel or uninhabitable (nonfunctional) substrate such as bedrock, large boulders, or debris.

7.1.10 Moving Transect is a method used for Group 1 surveys or mussel salvage whereby a defined segment along the transect is cleared, and then the line is moved to define a new area for clearing. For example, 1m alongside of an established transect line is searched and mussels salvaged. Successive passes are to be made through the segment per salvage criteria (Section 8.0). Once the area is cleared, the transect is moved to the adjoining area, and the new areas are cleared sequentially. The process is repeated until the entire salvage area is cleared of mussels. Number of mussels and effort per pass (by segment) is to be recorded.

Moving transects are the preferred method for conducting salvage efforts. The transect segments provide smaller search units (5m² or 10m² rather than 25m² or 100m², thereby reducing the potential that the full cell needs to be salvaged at a greater effort when in actuality, it may only be a small portion of that cell that needs the extra effort. Moving transects are more efficient and cost effective because it allows you to focus your efforts in areas where mussels are found. See Example 10.

7.1.11 Mussel Processing: In each segment or cell, mussels observed (live and dead) are to be bagged and brought to the surface for further processing and positive identification. Mussel nomenclature shall follow that of Williams *et al.* 2017 or any newer common and scientific names document posted to the FMCS website

(molluskconservation.org). Mussels shall be kept in water at all times, except for the brief period that they need to be out of the water to be measured or photographed, but no longer than five minutes at a time. Mussels observed along the transect or within a cell will be recorded as occurring in a particular transect segment or cell.

All ES are to be hand-placed into the substrate. For Group 3 and 4 streams, non-ES mussels may be dropped from a boat into the delineated area from May 1 to September 1. In areas of high velocity such as the upper Kanawha River, Group 1 and 2 streams, or any stream from September 1 to May 1, mussels are to be hand-placed into the substrate.

7.1.12 Spudding: Work barges are typically held in place by spuds which are pipes or poles that can be driven into the river bottom to provide stability. Spuds vary in size. Project designs should include the associated impact expected by spudding if it is to occur outside of the ADI. Project impact minimization procedures can include reducing the number of times the work barges need to be moved during the operation. The project description should include size and number of spuds that will be used and the expected number of movements. The project diagram should depict the spud area if outside the ADI and data should be provided for this area separately. (Example 1)



https://en.wikipedia.org/wiki/File:New_Orleans_USACE_Flexifloat_DSC_0157.JPG

7.1.13 Active Facility: is a facility which has actively used structures within the wetted stream over the previous 5 year period. For example, mooring cells, tri-ties, permanently spudded platform, etc. A facility which only consists of land-based structures is not considered an active facility with regards to this protocol. This includes facilities that have operated in the past by grounding barges nearshore which have not undergone environmental review since implementation of the WV Mussel Survey Protocols.

7.1.14 Ohio River Permitting Requirements: any work within the Ohio River that is below normal pool elevation requires use of the WV Mussel Survey Protocols. If work is along the State of Ohio shoreline, then it is recommended that the State of Ohio also be contacted to ensure compliance with their requirements.

7.2 Survey Conditions, Constraints, and Data Required

7.2.1 Data Longevity:

Survey data collected at a specific site will be considered valid for five years from the date the survey was conducted. If mussel relocations are conducted, they should be done within the same field season as the expected instream activities. If the proposed instream activities are to be conducted before July 15, then relocations may be conducted within the previous field season. After July 15, additional relocation efforts may be required just prior to construction activities

depending on the results of earlier survey/relocation efforts. Areas that have been dredged within the previous five year period do not need to be resurveyed unless the area is to be expanded or moved.

7.2.2 Mussel Survey Period:

The survey period shall be from May 1 to October 1. Requests to conduct surveys outside this time period will generally not be approved. Surveys to be completed in the current calendar year should have the scope of work to the appropriate State and Federal official by September 1. Any survey work approved outside this period will be done only under extenuating circumstances, with separate approval obtained from the appropriate State and Federal agencies prior to conducting the work, and may require a revised protocol.

7.2.3 Visibility Requirements:

Qualitative surface surveys must have a minimum visibility of one-half meter (50cm, or approx. 20in), with or without lights at **depth of survey**. If suitable visibility is not present at the intended time of the survey, then the survey must be re-scheduled, or a different protocol must be employed in consultation with the appropriate State and Federal agencies. (Example, more extensive quantitative surveys with excavations may be required). Visibility at depth (in centimeters) is a required field on the Stream and Weather Conditions datasheet. Turbidity meter measurements are not to be used as a substitution. Please also include Secchi depth for Groups 3 and 4.

7.2.4 Workable Flow Requirements:

Surveys should be conducted under low to moderate flows. If the area cannot be effectively surveyed under existing flow conditions the survey must be re-scheduled. Any variance must be approved by the appropriate State and Federal agencies.

7.2.5 Minimum Data to be Recorded:

Standard WVDNR datasheets can be found on the WVDNR website mussel page. **All datasheets are to be completed in their entirety and shall be incorporated as appendices in the final project report.** Data shall be compiled and summarized separately at a minimum for all areas (Section 7.1.1), if applicable. A separate datasheet is required for qualitative search(es) within the potential relocation area(s). At a minimum, coordinates, in decimal degrees, shall be provided for the US and DS extent of the USB, ADI, DSB, and any relocation sites. A photographic voucher of all native species must be provided. Any questionable individuals should also be photo vouchered and should be videoed providing a better reference for verification. The final report shall include a map of the surveyed area along with the proposed project activities, and a copy of the valid collecting permit. **Note: stating “see attached report” on the data sheet is not acceptable. If you are asked to collect a particular type of data, it shall be in the report or attached as appendices.**

7.3 Extent of Areas to be Surveyed

7.3.1 Minimum coverage shall include the area of direct impact (ADI) and appropriate buffers, including any alternative locations. See also Spudding, Section 7.7.13. Table 3 summarizes buffer requirements by stream group and activity type. If the project may affect the local hydraulics of the stream, such as hydropower

projects or installation of in-stream structures, then the survey effort shall encompass the area that may be affected. Hydraulic modeling may be required to determine the extent of hydraulic changes. If modeling is not conducted prior to surveying, the survey shall extend at least 1.6km (1mi) downstream. Additional surveys may be required if subsequent modeling determines hydraulic changes will extend further downstream.

- 7.3.2** The **mixing zone** of an outfall shall be included within the survey area as shall the appropriate buffers around the mixing zone as described in Table 3. According to the WV Department of Environmental Protection (WVDEP) (https://dep.wv.gov/WWE/permit/individual/Documents/370_Mzguide.pdf), an outfall should not discharge within 5 river widths of sensitive areas, endangered species, public water supply intakes, bathing areas, tributary mouths, or other point source discharges. If they do, the initial downstream boundary estimations for the mixing zone should be at a distance preventing overlap. If not, the initial downstream boundary estimations should be a distance of 5 river widths. Mixing zone, as defined, cannot harm endangered species. Some mussels, including endangered species are more sensitive than species used to develop WV water quality criteria, and in these cases the mixing zones should be developed based on review of the available literature. The buffer zone should extend at least an additional 100m downstream of the mixing zone. Hydraulic and mixing zone model data shall be included with the proposed scope of work to define the survey area.

7.4 Stream Type Specific Guidance

- 7.4.1** **Group 1 streams** are those small to mid-sized streams not suspected of containing ES and timed search surveys are acceptable. These streams only require coordination with the WVDNR. If avoidance of instream impact is not possible, a mussel survey and subsequent relocation is required. At a minimum, data are to be provided for each survey area **separately**. Each of the areas shall be searched for a minimum effort of 0.2 min/m². A minimum search effort of 0.5 min/m² shall be conducted in areas with mussels. If mussels are observed, the salvage zones shall be delineated as described in Table 3. Salvage shall be conducted as per Section 8.0. **Group 1 streams require coordination with the WVDNR only unless an ES is found, at which time, all work shall cease and the WVDNR and USFWS must be contacted immediately. All mussels are to be returned to the area from which they were collected.**
- 7.4.2** **Group 2 streams** are those small to mid-sized streams with ES expected and require coordination with the WVDNR and the USFWS.

Phase 1 objective is to determine if a mussel concentration is present and to delineate the area which could potentially contain ES, so that impacts to mussel concentrations can be avoided and minimized. Data is to be compiled separately for all areas (Section 7.1.1). **Streams 20m wide or less** must be surveyed using cells not to exceed 25m² in size. Each cell with heterogeneous habitat will be searched for 0.2 min/m² or 5 min/25m² cell. All cells in which any mussels are found are to be searched for an additional 0.3 min/m² (7.5 min/25 m² cell) minimum. Data (mussels, effort, and habitat) are to be recorded by cell position. For **streams greater than 20m wide**, the preferred survey method is cells;

however, transects may be used to delineate mussel concentrations or areas that potentially support ES. Transects, as defined, shall be surveyed 1m in width, spaced no more than 10m apart, and placed perpendicular to stream flow. Search effort shall be 1min/m² in heterogeneous substrates. Data (mussels, effort and habitat) are to be recorded by 5m segment along the transect.

If the triggers are met within any portion of the delineated area, that area should be avoided (direct and indirect impacts) during construction and operation of the project. If the area cannot be avoided a Phase 2 survey may be required. If ES are found, additional minimization and conservation measures must be developed and/or formal consultation with FWS will be required.

Phase 2 Triggers: If any of the following criteria are met a Phase 2 survey is required.

- Mussel density of 0.5/m² (all species included) found within a cell.
- Two mussels of any species found within a 5m transect segment.
- Presence of at least two species not listed in Table 2 found within a cell.

Phase 2 survey objective is to collect sufficient data to increase the probability of detecting an ES. If triggers are met using transects then the area shall be broken into cells not to exceed 25m². The search effort for each cell within the mussel concentration area shall be a minimum of 1min/m² in heterogeneous substrates. The initial search effort can be used to meet the 1min/m² level of effort. The mussel concentration area is defined as an area encompassing all triggered areas connected by similar habitat plus a 10m buffer surrounding it. The boundary of the Phase 2 area shall not exceed the Phase 1 area.

7.4.3 Group 3 streams are large rivers where ES are not expected. These include the Ohio River US of Hannibal Lock and Dam and the Monongahela River.

The objective of the survey is to determine if mussels are present, delineate the area of mussel concentration, and facilitate mussel salvage and relocation if advised by the State resource agency. The survey design shall consist of transects, 1m in width, placed perpendicular to stream flow or cells not to exceed 100m² in size. Maximum transect spacing depends on project type (Table 3) but shall not exceed 25m unless a scoping project. If transect spacing is greater than 10m and no mussels are observed in two adjacent transects, with at least one of the transects containing apparent suitable mussel habitat, then a timed search for a minimum of 10 minutes shall occur between the two transects in the area of suitable mussel habitat. If any live and/or fresh dead mussels are found between the two transects during the search, then an additional transect shall be placed there and a search conducted as previously described. Cells may also be used and shall not exceed 100m² in size. Data shall be compiled for each survey area separately and recorded by transect segment or by cell position. Cells are encouraged in those areas without an extensive ADI and buffer area. Cells allow better transition for moving into the salvage phase. In larger areas, such as maintenance dredging, long linear projects, and scoping projects, the targeted mussel areas are best delineated using transects. Delineate the distribution of mussels and/or suitable habitat using data obtained during sampling of cells or transects.

7.4.5 Group 4 streams are large rivers where ES are expected. These include the Ohio River DS of Hannibal Lock and Dam, Little Kanawha River (slack-water section adjoining the Ohio River) and the Kanawha River.

Phase 1 objective is to determine if a mussel concentration is present and to delineate the area which could potentially contain ES, so that impacts to mussel concentrations can be avoided and minimized. The survey design shall consist of transects, 1m in width, placed perpendicular to stream flow or cells not to exceed 100m² in size. Maximum transect spacing depends on project type (Table 3) but shall not exceed 25m unless a scoping project. If transect spacing is greater than 10m and no mussels are observed in two adjacent transects, with at least one of the transects containing apparent suitable mussel habitat, then a timed search for a minimum of 10 minutes shall occur between the two transects in the area of suitable mussel habitat. If any live and/or fresh dead mussels are found between the two transects during the search, then an additional transect shall be placed there and a search conducted as previously described. Data shall be compiled for each survey area separately and recorded by transect segment or by cell position. Additional timed search surveys shall be conducted within areas of mussel concentrations for species richness curve development (Section 7.1.7).

If the triggers are met within any portion of the delineated area, that area should be avoided (direct and indirect impacts) during construction and operation of the project. If the area cannot be avoided a Phase 2 survey may be required. If ES are found, additional minimization and conservation measures must be developed and/or formal consultation with FWS will be required.

Survey results that trigger avoidance or a Phase 2 survey include:

- Mussel density of 0.5/m² (all species included) in any area of the survey and/or
- Presence of at least three species not listed in Table 2 along any one transect (at least 100m in length) or a combination of adjacent transects (at least 100m combined length) or within a qualitative survey conducted between transects.

Phase 2 survey objective is to collect sufficient data to increase the probability of detecting an ES. If transect spacing is greater than 10m, a Phase 2 survey shall consist of additional transects placed between the original surveyed transects within the mussel concentration area. The mussel concentration area is defined as an area encompassing all triggered areas connected by similar habitat plus a 10m buffer surrounding it. In other words, an additional transect shall be placed downstream of the most downstream transect that met the above criteria and upstream of the most upstream transect that met the above criteria. If the distance to the next transect upstream and downstream is greater than 10m, the additional transects shall be placed 10m upstream and downstream. The boundary of the Phase 2 area shall not exceed the Phase 1 area. Transect spacing of 10m or use of cells does not require a Phase 2 survey.

8.0 Conducting a Salvage and Relocation

All native mussels are protected within the state of WV (§20-2-4 and CSR 58-60-5.11) and if avoidance options are exhausted, mussels must be relocated from the area of direct impact

and appropriate buffer areas (salvage zone) as described in Table 3. **No mussels are to be moved without prior authorization from appropriate State and Federal authorities.** On streams with potential ES (Groups 2 and 4), coordination with the USFWS must occur prior to any relocation efforts. Relocation of any federally listed mussels will require formal consultation. This consultation process requires that the Federal action agency develop a Biological Assessment (BA) that quantifies the potential impacts to the species and that an incidental take authorization be issued by the USFWS prior to conducting any activities that could adversely affect these species. This process may take up to 135 days from the time that the USFWS determines that a complete BA has been received. Impacts to federally listed mussel species and their habitats must be avoided and minimized to the extent practicable. Additional conservation measures above and beyond relocations may be required if the proposed project may adversely affect federally listed species. If the project is covered by a Habitat Conservation Plan (HCP), a mussel salvage still must be conducted prior to commencement of instream construction activities if warranted as all mussels are protected in the State of WV.

- 8.1** For Group 1 and 3 streams, approval to relocate may be granted by WVDNR solely. Depending on the type and extent of the project and potential for significant mussel resources to occur, some projects may receive approval to salvage mussels at the time of the initial survey. In some cases, mussels may be required to be held on site while additional coordination with the State is required to determine if salvage is the best option. (See Section 5.3)
- 8.2** For Group 2 and 4 streams, relocations shall not be conducted until a review of findings by the WVDNR and USFWS has been conducted and approved, and written concurrence provided by the USFWS.
- 8.3** The salvage effort shall consist of disturbing and digging into the substrate 10 to 15cm (4 to 6in) if possible, moving large rocks, fanning, and systematically covering the salvage zone.
- 8.4** The salvage effort shall be systematically conducted by a “moving transect” or establishing cells not to exceed 100m² for Groups 3 and 4, and not exceed 25m² for Groups 1 and 2. For Groups 3 and 4, if the cell width exceeds 5m then salvage shall include the use of a moving guideline (transect) to aid in navigation through the cell.
 - 8.4.1** Moving transects placed parallel to flow are the preferred method for salvage (see Section 7.1.10). Moving transect are the most efficient and cost effective means by which to conduct salvage. This method also allows you to focus efforts in areas where mussels are present. (See Example 9)
- 8.5** For Groups 1 and 3 where salvage is conducted concurrently with the survey, cells in which no mussels were found during the initial survey and which are surrounded by cells in which no mussels were found during the initial survey do not need to be further salvaged. Cells in which no mussels were found during the initial survey but were adjacent to cells with mussels must have a salvage pass with a minimum effort of 1min/m². Additional passes maybe required, (see Section 8.6).
- 8.6** When developing a salvage plan for Groups 2 and 4, areas found to be without mussels during the initial survey do not need to have a salvage effort conducted if the salvage is conducted within the same field season. Similar to defining mussel concentration areas (Section 7.1.7), the adjusted salvage area is defined as an area encompassing all observed mussels from the initial survey connected by similar habitat plus a 10m buffer surrounding it. This adjusted salvage area is required to have a minimum salvage effort conducted. For example, Transects 5 – 10 had no mussels. Mussels were found on Transects 11 and above. Transect spacing was 10m. The area between Transect 10 and Transect 11 would need to be salvaged. If mussels are found in that outer 10m area, then the area would be expanded an additional 10m not to exceed the salvage area. (See Example 10)

- 8.7** For all Groups the minimum first pass salvage effort for heterogeneous substrates which require salvage shall be 1min/m². The minimum first pass salvage effort for homogenous substrates is 0.5min/m². Minimum effort for subsequent passes in homogenous substrates are half those defined below for heterogeneous substrates.
- 8.7.1** If no mussels are observed after a 1min/m² effort, then that cell or segment salvage is complete.
- 8.7.2** If mussels (1-2 in 100m², or 1 in 1-25m²) are found during the 1st pass, then the minimum second pass effort shall be 1min/m².
- 8.7.2.1** Salvage is complete unless the number salvaged during the second pass is equal to or greater than the first pass. In this case, an additional pass is required at a minimum effort of 1min/m².
- 8.7.3** If mussels (3-29 in 100m², or 2 mussels to 0.3/m² in ≤25m²) are found during the 1st pass, then the minimum second pass effort shall be 2.5min/m².
- 8.7.4** If mussels (≥0.3/m²) are found during the 1st pass, then the minimum second pass effort shall be 5min/m².
- 8.7.5** Third and additional passes at 1min/m² shall be conducted until no more than 5 percent of the original number collected is observed. Original number is defined as the number of mussels found in the 1st and 2nd pass combined.
- 8.7.5.1** Additionally, for Group 2 and 4 streams for which take authorization has been obtained, additional passes at 1min/m² shall be conducted until no ES are found.
- 8.8** Salvage efforts shall meet the same standards as surveys (i.e. visibility requirements (≥50cm), workable streamflow conditions, and mussel survey period).
- 8.9** Relocation sites shall be upstream (preferred) to an area of equal or better habitat which should include similar mussel diversity and densities, or to an approved relocation site in a discrete area recommended by the WVDNR. For Group 1 streams, a 15min qualitative survey of the relocation site shall be conducted at a minimum. For all other stream groups, one hour of qualitative searches (six 10min searches) to delineate an area with similar species and equal or better density than the collection area shall be conducted. The relocation area is to be equal or larger in size to the collection area. All observations of resident mussels are to be reported including site coordinates (to be entered on the Protocol Form) in decimal degrees and mussels to be reported on a separate DNR datasheet. Effort noted above are the minimums. Be sure to conduct adequate effort to locate a good relocation area. Relocation site data shall be provided to the USFWS and WVDNR prior to salvage of Group 2 or 4 streams.
- 8.10** WVDNR or USFWS personnel will randomly conduct quality assurance checks on relocations. Failure to do an adequate salvage effort or to select an appropriate relocation area could result in revocation of approved surveyor status.
- 8.11** Generally, monitoring of common species is not required. Monitoring of relocated ES and areas of ES habitat that were affected by project construction is required and addressed through the Section 7 consultation process with the USFWS.
- 8.12** For Group 3 and 4 streams, non-ES mussels may be dropped from a boat into the delineated area May 1 to September 1. In areas of high velocity such as the upper Kanawha River, Group 1 and 2 streams, or any stream from September 1 to May 1, mussels shall be hand-placed into the substrate. ALL ES are to be hand-placed into the substrate from the area in which they were collected unless otherwise authorized.
- 8.13** **If any ES are found during relocation efforts for projects in any Stream Group where no ES were found during previous survey efforts, and no incidental take authorization from the USFWS has been received, then relocation efforts must stop and the USFWS and WVDNR shall be immediately contacted. All mussels, ES and common species, are to be returned to the area from which they were**

collected. If some mussels have already been relocated, the surveyor will be directed how to proceed upon contact with the agencies.

- 8.14** Relocations should be conducted within the same year as the start of instream construction. If instream activities have not commenced prior to July 15 of the next year, additional relocation efforts may be required just prior to construction activities depending on the results of earlier salvage efforts.

9.0 Reporting Requirements and Deadlines

All data as per the scientific collecting permit are due by November 15 or 45 days post survey if an extension was granted. At a minimum, the DNR datasheets and an updated Protocol Form are to be submitted within this timeframe. If the project report is not available at that time, the surveyor must notify the permitting agency of the delay and establish a submittal deadline. If the survey was not conducted, the permittee must notify the permitting agency by November 15, though earlier is preferred.

Report Checklist: Below is a checklist of deliverables to be included in a mussel survey report. If supplying reports addressing multiple sites, please place all materials for each site together so each can be easily reviewed in its entirety. Incomplete data will delay project reviews and project concurrence will not be provided until complete data is provided. See Examples 6 to 8 for assistance in planning your data tables. This is not the required format but data must be included. All text and tables should have font size such that they are legible (without a magnifying lens) when documents are printed. Scans of hand written field sheets must also be legible. Excel spreadsheets are acceptable and preferred if data collection is extensive.

- Full description of the project including justification, alternative(s), minimization efforts, etc.
- Map showing project location sufficient to delineate all pertinent impact and buffer areas on recognizable landscape features (approximately 1:24,000).
- Survey methodology.
- Figure showing survey design overlaid on project diagram.
 - Show all areas as appropriate (ADI, USB, USSB, LB, LSB, DSB, DSSB, MZ and spud areas). These areas are described in further detail in Section 7.1.1
- Summary Data Table(s):
 - Number of each species by area (Section 7.1.1) by survey type,
 - Total salvaged (ADI plus salvage buffers) by species by method.
- If salvage not completed, provide estimated number by species for ADI and salvage buffers required to be salvaged if project moves forward.
 - Mussel Data by cell or transect segment (full data table or spreadsheet required). If extensive data, provide figure to summarize.
- Survey effort by cell or transect segment (full data table or spreadsheet required).
- Habitat data by cell or transect segment (full data table or spreadsheet required)
 - If extensive data, provide figure to summarize.
- Mussel Data by pass for each salvaged segment or cell shall be provided).
- Salvage effort by cell or transect and by pass (full data table or spreadsheet required).
- Group 2 and 4 – Species Richness Curve with calculations and calculate number of mussels needed to collect an additional species.
- Protocol Form (updated with actual survey information) for project and relocation area(s).
- Results of qualitative survey at relocation site.
 - Provide data on effort, number of each species found, and habitat.

- Photo Vouchers of each species observed and photos of odd, questionably identified species.
- DNR Data Sheets.
 - Current Stream Weather Conditions (Required fields: Temperature in Celsius and Visibility in centimeters). Turbidity meter readings are NOT an acceptable alternative.
 - Form for survey area. If multiple days may include range and only submit one form.
 - Form for relocation area if site is greater than 300m from survey area.
 - Mussel Survey Data Sheet by species (summarize by area (Section 7.1.1) with total for each species). Each survey methodology used requires a separate Summary Data Sheet.
 - Mussel Survey Data Sheet by species for relocation area
- Copy of state scientific collecting permit
- Copy of USFWS concurrence form(s) (USFWS concurrence required for Phase 1, Phase 2, and Salvage)

Remember, if you are asked to collect the data, provide it. The management decision makers should be able to re-create all analyses conducted from the data provided.

10.0 Tables

Table 1. Contact information for State and Federal Agencies.

West Virginia Division of Natural Resources Scientific Collecting Permits PO Box 67 Elkins, WV 26241 304-637-0245 DNRScientificCollectingPermit@wv.gov	U.S. Fish and Wildlife Service West Virginia Field Office - Ecological Services 6263 Appalachian Hwy Davis, WV 26260 304-866-3858 FW5_WVFO@fws.gov
West Virginia Division of Natural Resources Mussel Program Leader PO Box 67 Elkins, WV 26241 304-637-0245	http://www.wvdnr.gov/Mussels/Main.shtm All required forms, current stream layers, current protocol, approved surveyors list, etc. can be found on the WVDNR website mussel page.

Table 2. Species that can be excluded in defining a diverse mussel concentration by stream group.		
Species	Group 1&2	Group 3&4
<i>Lampsilis siliquoidea</i>	X	X
<i>Lasmigona complanata</i>		X
<i>Leptodea fragilis</i>		X
<i>Obliquaria reflexa</i>		X
<i>Potamilus ohiensis</i>		X
<i>Potamilus alatus</i>		X
<i>Pyganodon grandis</i>	X	X
<i>Strophitus undulatus</i>	X	X
<i>Utterbackia imbecillis</i>	X	X
<i>Utterbackiana suborbiculata</i>		X

Table 3. Summary of buffer requirements and maximum transect spacing for various types of stream disturbances. Units are in meters. Survey extent shall include all buffers and the area of direct impact (ADI). After demonstrating need and receiving approval, mussels may be relocated from area described (salvage zone).

	US Buffer	DS Buffer	L Buffer	Salvage Zone (SZ) (ADI + Buffer Below)		Maximum Transect Spacing
				US & L	DS	
Group 4	Phase 2 Surveys may be required if trigger met during Phase 1					
Dredging (Maintenance) or New Loading Facility	150	500	150	10	10	ADI 10 0-50m USB 10, >50m USB 25 0-50m LB 10 >50m LB 20 0-100m DSB 10 >100m DSB 25
Loading Facility (non-dredging activities: within active facility)	25	25	25	5	10	cells or 10
Scoping Projects	Project Specific					100
Bridge Projects	50	100	BB	5	10	10
Waterline/Pipeline Corridor Disturbances	50	100	BB	5	10	10
Water Intakes (at shoreline)	10	10	10	5	10	Cells
Shoreline Protection	10	10	10	5	10	Cells
Projecting Dike Structures	10	20	10	5	10	Cells
Outfalls	10	MZ+100	10	PS		PS
Group 4 and 3: Loading Facility (expanding US or DS, see Section 5.3 for required buffers)						
Group 3	Relocation at time of survey if pre-authorized					
Dredging (Maintenance)	50	150	50	10		10 SZ, 20 LB, 25 DSB and USB
Active Loading Facility (non-dredging activity)	25	25	25	5	10	cells or 10
Loading Facility (new or non-active)	50	150	50	10		10 SZ, 20 LB, 25 DSB and USB
Scoping Projects	Project Specific					100
Bridge Projects	10	25	BB ^b	5	10	cells
Waterline/Pipeline Corridor Disturbances	10	25	BB	5	10	cells
Water Intakes (at shoreline)	10	10	10	5	10	cells
Shoreline Protection	10	10	10	5	10	cells
Projecting Dike Structures	10	20	10	5	10	cells
Outfalls	10	MZ + 20	10	PS		cells
Group 2	Phase 2 surveys required if trigger met during Phase 1					
Scoping Projects	Project Specific					Average 25
Bridge Projects	50	100	BB	5	10	10
Waterline/Pipeline Corridor Disturbances	50	100	BB	5	10	10
Water Intakes at shoreline	10	10	10	5	10	cells
Shoreline Protection	10	10	10	5	10	cells
Outfalls	10	MZ + 20	10	PS		10
Group 1	Relocation at time of survey if pre-approved					
All Projects	10	25	10 or BB	5	10	TS

^b pier only, 10m LB
TS Qualitative Timed Search
L Lateral

PS Project Specific
MZ Mixing Zone
DS Downstream

BB Bank to Bank
US Upstream
cells: not applicable, cells required

11.0 References:

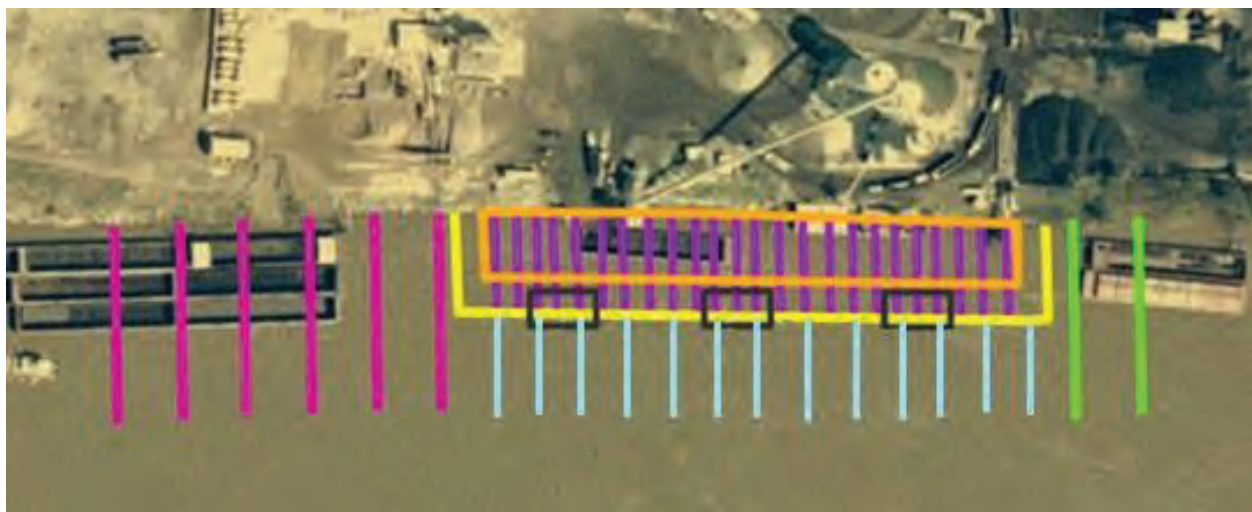
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12.0 Acknowledgements

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13.0 Examples

Example 1. Group 3 maintenance dredging of a 20 by 200m area is proposed (orange rectangle=ADI). Within the ADI and the salvage buffer (the ADI and a 10m salvage buffer around it, yellow outlined area) 1m wide transects are required at 10m spacing (purple lines). The mussels, effort and habitat data shall be provided by the ADI segments and the salvage buffer segments. Outside of the salvage zone, transects are spaced at 25m intervals. The USB of 50m includes two 70m transects (green). The remaining lateral buffer (minus the 10m salvage buffer) consists of 10 transects, 40m in length (blue) spaced at 20m intervals. The DSB (magenta) consists of six 70m transects at 25m intervals. If spudding is to occur outside the ADI then those areas should be indicated and data provided for each spud area (black rectangles).



Example 2. If a new mooring cell or tri-tie (orange circle) is being placed within an active facility, the area may be best surveyed using cells to cover the 25 by 25m buffer surrounding the mooring cell. The mussels, effort and habitat shall be recorded by cell for each of the areas being sure to delineate between the salvage zone and the additional buffer surrounding it. Green is USB, yellow is salvage buffer, blue is LB, and magenta is DSB. If the stream is Group 4, at least six 10min qualitative searches must be conducted around the cells (squiggly lines).



Example 3. If multiple moorings are to be installed within an active facility one can see that this scenario quickly becomes an underwater nightmare if using cells, thus transects may be more appropriate for Group 4 streams in which the mooring cells are in close proximity to each other and salvage is not being undertaken simultaneously.



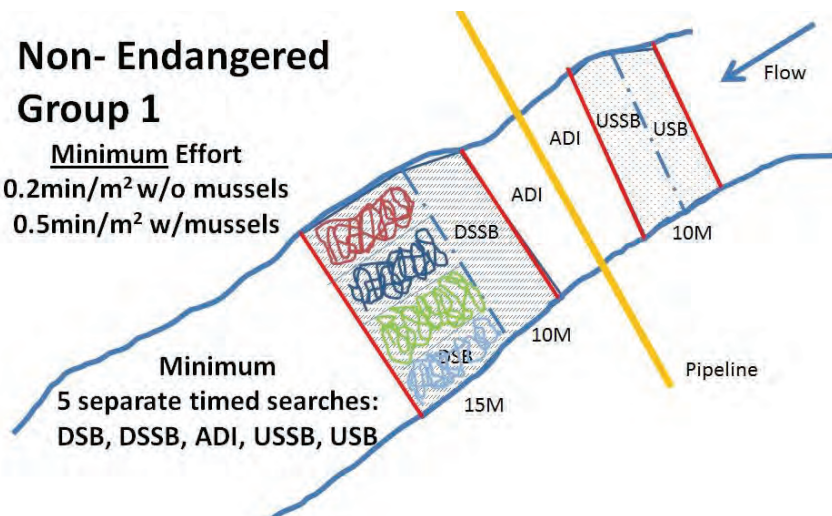
Example 4. Therefore if 3 or more moorings are to be installed, within close proximity to each other, the area may be best surveyed using transects. Be sure to place a transect through each proposed mooring location. Remember that at least 500m of transects must be surveyed and transect spacing is 10m. In this scenario, 12, 45m transects are being surveyed.



Example 5. Group 1 survey must record data separately for at least the 5 major areas. It may benefit the surveyor to stratify the areas based on habitat and the likelihood of finding mussels in each area as shown here in the DSB. Mussels, effort and habitat by sub-area are then recorded.

Non- Endangered Group 1

Minimum Effort
0.2min/m² w/o mussels
0.5min/m² w/mussels



Example 6 shows an acceptable data table for Phase 1 results. Note the buffer survey areas were broken into areas to be salvaged and those not. These abbreviations have been standardized in Section 7.1.1.

Cell #	Survey Area	Approximate Cell Size (m ²)	Total Search Effort (min)	Average Depth	Dominant / SubDominant Substrate Types (%)
1	USB	50	15	2'	Sand / LWD
2	USB	50	15	7'	Sand (60) / Silt (40)
3	USB	50	15	10'	Cobble (70) / Silt (30)
4	USB SZ	50	15	2'	Sand / LWD
5	USB SZ	50	30	7'	Sand (60) / Silt (40)
6	USB SZ	25	20	9'	Cobble (70) / Silt (30)
7	USB	25	10	12'	Cobble (70) / Silt (30)
8	ADI	100	60	2'	Sand / LWD
9	ADI	100	60	6'	Sand / LWD
10	LB SZ	50	30	9'	Cobble (60) / Gravel (40)
11	LB	50	20	13'	Cobble (60) / Gravel (40)
12	DSB SZ	100	30	2'	Sand / LWD
13	DSB SZ	100	60	8'	Sand (40) / Cobble (40) / Silt (20)
14	DSB SZ	50	30	12'	Cobble (40) / Gravel (30) / Sand (30)
15	DSB	50	25	14'	Cobble (60) / Sand (20) / Gravel (20)

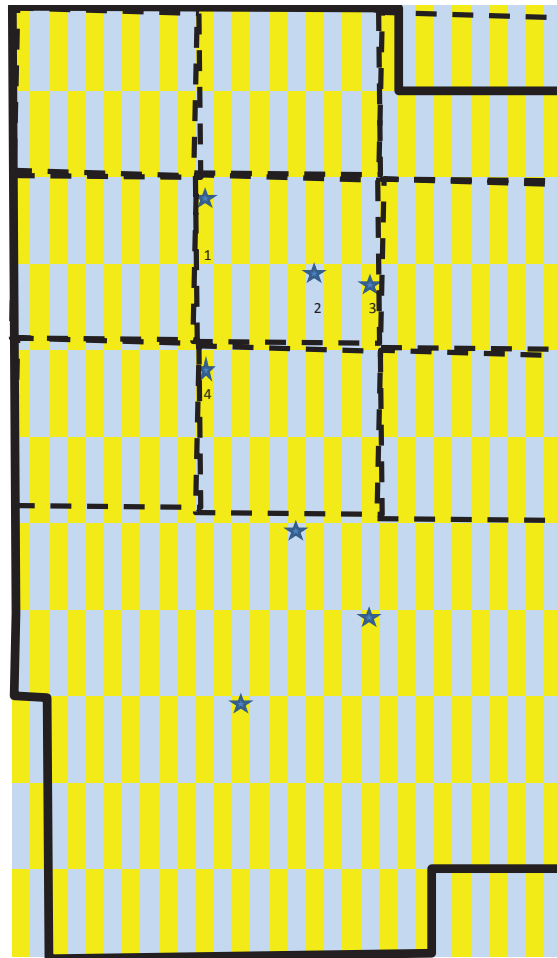
Example 7 provides further detail on mussels collected during salvage efforts. Data is supplied by cell by pass. The only thing missing is the effort used during each pass.

Cell #	Pass #	Species	# Collected	Abundance by Pass
1	1	<i>L. cardium</i>	2	..
1	1	<i>L. siliquioidea</i>	2	..
1	1	<i>L. complanata</i>	1	..
1	1	<i>L. costata</i>	3	..
1	1	<i>L. fragilis</i>	2	..
1	1	<i>P. alatus</i>	5	..
1	1	<i>P. grandis</i>	3	..
1	1	<i>S. undulatus</i>	2	..
1	1	<i>T. verrucosa</i>	1	21
1	2	<i>L. siliquioidea</i>	1	..
1	2	<i>L. fragilis</i>	1	..
1	2	<i>P. alatus</i>	2	..
1	2	<i>P. grandis</i>	1	5
1	3	<i>T. verrucosa</i>	1	1
2	1	<i>L. cardium</i>	5	..
2	1	<i>L. costata</i>	4	..

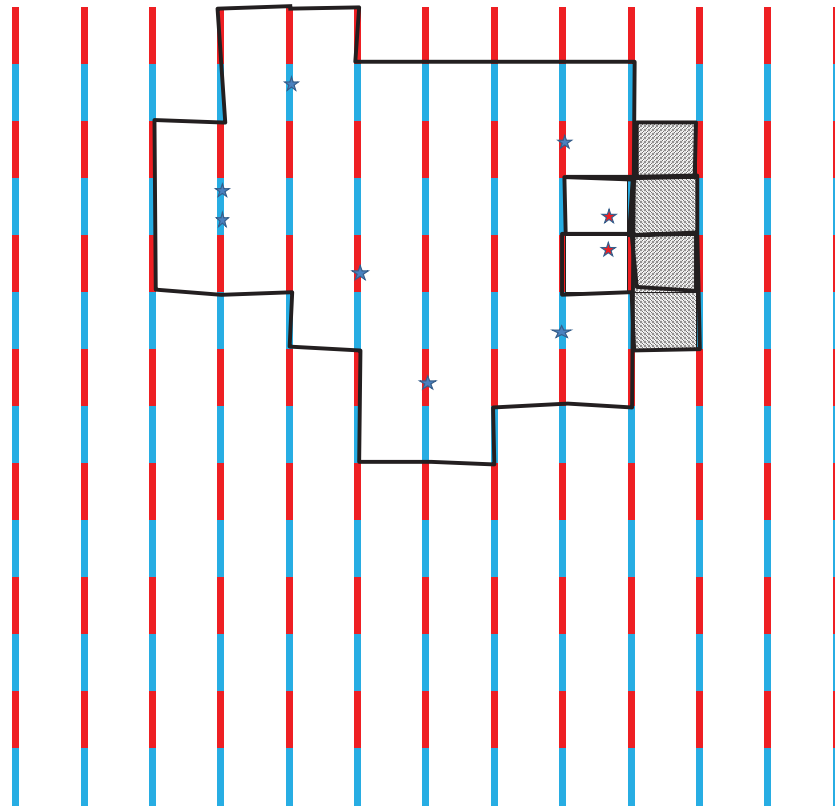
Example 8 provides a summary table of species collected by area. The only thing missing on this one is a total by species column. Supply table for each method used and then a summary for all methods.

Species	ADI	LB	LB SZ	DSB	DSB SZ	USB	USB SZ
<i>L. siliquioidea</i>	2	0	1	0	1	0	0
<i>P. alatus</i>	0	0	1	2	3	0	2
TOTAL	2	0	2	2	4	0	2

Example 9: Moving transects are the preferred method for conducting salvages. Thus rather than conducting cell searches, a transect is cleared, moved, cleared, moved, and cleared until 10m past the last mussel has been cleared. In low density populations the smaller the transect segment the more cost effective the search. In the example below the yellow and grey areas are 5m segments. The thick black outline depicts the area needing salvaged based on the mussels observed (blue stars) during the initial survey. Assuming no other mussels are found, all areas within the thick black line need one salvage pass at a minimum effort of 1min/m². The entire cell containing segment numbers 1, 2, and 3 would need a second pass of 2.5min/m². If it was salvaged via moving transect, only those segments (1, 2, and 3) within the cell would need to have 2 passes conducted at a minimum rate of 1min/m² for each pass. Salvage does not need to extend beyond the perimeter of the full salvage zone even if mussels were found within 10m of the edge.



Example 10: The figure below represents 10m spaced transects within a salvage area (blue and red 10m segment lines). The large black outlined area (without hash fill) surrounds the actual area that needs to be salvaged based on the survey results of where mussels were located. This area surrounds all mussels (blue stars) with similar or better habitat between and a 10m area surrounding them. Two mussels (red stars) were found during salvage cell searches on the outer edge. This required the establishment of four additional cells to be searched outside of the earlier defined salvage area but still within the full salvage area. If no mussels are found within these four new cells then salvage is complete. If additional mussels are found then additional cells surrounding those positive cells is required until 10m beyond the last mussel is established or the edge of the full salvage zone is reached.



PROPOSAL FOR: WILDLIFE
MUSSEL SURVEY & RELOCATION
ST. ALBANS BOAT RAMP AND DOCK

St. Albans, Kanawha County, West Virginia

ARFQ DNR21*08

Prepared for:

**West Virginia Division of Natural Resources
Wildlife Resources Section**

and

WVDNR Property and Procurement Office

Buyer: Mr. Jamie Adkins

Bid closing date: 08/18/2020

Bid closing time: 1:30pm ET

324 4th Avenue

South Charleston, WV 25303

Project No.: 12611

Date: 8/17/2020

Prepared by:



5070 Stow Rd.
Stow, OH 44224
800-940-4025

www.EnviroScienceInc.com

1.0 INTRODUCTION

EnviroScience, Inc. is pleased to submit a proposal to the West Virginia Division of Natural Resources (WVDNR) to perform a freshwater mussel survey on the Kanawha River in St. Albans, Kanawha County, West Virginia for the proposed St. Albans Ramp and Dock project (Project). WVDNR is soliciting bids via a Request for Quotation (ARFQ DNR21*08) to establish a contract for the performance of a mussel survey and possible mussel relocation at this location.

According to the RFQ and the *2020 West Virginia Mussel Survey Protocols* (WVMSP), WVDNR has classified this reach of the Kanawha River as a Group 4 Stream as a high-quality stream reach where federally threatened and/or endangered species are expected. Construction activities may impact freshwater mussel resources within or adjacent to the project footprint(s). Live mussels occurring within the Area of Direct Impact (ADI) could be crushed, smothered, or dislodged by dredging activities. Since all mussels are afforded state protection within West Virginia and additionally federally listed species are known from the area, a mussel survey and any warranted relocation effort must be undertaken by WVDNR to obtain the regulatory permits sought for the Project. Group 4 Streams in West Virginia must be coordinated with both the WVDNR and the U.S. Fish and Wildlife Service (USFWS); WVDNR and USFWS approval and concurrences with mussel survey work will be required prior to commencing construction.

2.0 QUALIFICATIONS

EnviroScience maintains a staff of six West Virginia approved malacologists with a combined experience of well over five hundred mussel projects across the Midwest and eastern United States. Specifically, our new Morgantown, West Virginia office is staffed by two approved malacologists who are also longtime West Virginia residents. Our experience includes endangered mussel surveys, impact assessments, translocations, mitigation design, biological assessments, expert consultation, and experimental lab and field research on mussels. Moreover, many of our ecological staff are certified divers and routinely assist with mussel surveys, allowing all our personnel great familiarity with mussel searching and handling techniques.

EnviroScience is one of the few biological firms in the country that is a general member of the Association of Diving Contractors International (ADCI) and offers full-service commercial diving services. Our diving meets the highest standards for safety and efficiency, including those of the U.S. Army Corps of Engineers (USACE) EM385-1-1, OSHA, ADCI, and the U.S. Coast Guard. Our in-house ADCI certified commercial divers are not only highly trained professionals, but they are also highly experienced mussel surveyors and widely respected by state and federal resource agencies as qualified mussel collectors. Additionally, we are an established company recognized for our robust health and safety program and is a registered firm in good standing with ISNetwork.

Our assigned staff have experience working for WVDNR, maintain close working relationships with WVDNR and USFWS, and are well versed in the challenges of big-river diving. Key personnel dedicated to this Project will be Sarah Veselka (Malacologist, WV Office Project Manager), Brian Carlson (Malacologist, WV Office) Becca Winterringer (Malacologist and Project Manager), Ryan Schwegman (Marine Services Manager/Malacologist), and Dale Dunford (Malacologist, Dive Supervisor). EnviroScience qualifications to perform the work requested by WVDNR and key project personnel resumes are provided in Attachment A.

3.0 SCOPE OF WORK

All mussel survey or relocation efforts will comply with the survey protocols outlined in the most recent 2020 West Virginia Mussel Survey Protocol (WVMP). Survey and relocation buffers will be adopted from project described as “Projecting Dike Structures” in the WVMP.

TASK ONE: PHASE 1 MUSSEL SURVEY AND REPORTING

EnviroScience understands the proposed area of direct impact (ADI) as the regions defined as “NEW CONCRETE RAMP” and “NEW RIPRAP” in Exhibit B of the July 24th, 2020 RFQ. Per the WVMP, the survey buffers required for projecting dike structures in Group 4 streams are 10 m (33 ft) upstream, 20 m (66 ft) downstream, and 10 m (33 ft) lateral to the ADI. A series of cells no to exceed 100m² will be used to delineate the proposed impact area and the required buffers. Divers will search each cell at a minimum of 0.2min/m², if mussel are found an additional 0.3min/m² is required. Data will be recorded per cell. Substrate composition will be recorded via the Wentworth Scale and depth to the nearest tenth of a meter will be recorded for each cell.

All live mussels will be identified, counted, and sexed (sexually dimorphic species only). Data will be recorded to separate the ADI from the upstream, downstream, and lateral buffer results. All dead shells will be scored as either fresh dead (lustrous nacre, dead <1yr), weathered dead (dull or chalky nacre, dead one to many years), or subfossil (heavily weathered and fragmented, dead many years to many decades) and noted as present. Mussels will be kept cool and moist and will not be out of the water more than five minutes during processing. All live mussels will be returned to the area of their collection. Taxonomy will follow Williams et al. (2017).

In the event a federally listed mussel species is found, WVDNR and USFWS will be notified immediately (within 24 hours) via email and phone.

Species Richness Curve

A species richness curve shall be developed for Group 4 streams to demonstrate that most species have been recorded. Data from each cell will be used to develop the curve. No supplemented time searches are required when using cells.

Reporting

EnviroScience will provide a detailed report for WVDNR review. The report will include a description of mussel survey activities (Methods), provide summary tables of all data collected, including mussel species numbers, sizes, and distribution (Results) within the study area, and will include a Conclusions section. Density estimates calculated from the survey will be used to estimate mussel density within the primary footprint. GIS-based mapping will provide further visual presentations of the findings of the survey and relocation. Appendices will contain site and specimen photos as well as survey forms.

TASK TWO: PHASE 2 SURVEY

According to section 7.4.5 of the WVMP, transect spacing of 10m or use of cells does not require a Phase 2 survey. EnviroScience anticipates no Phase 2 survey will be required.

TASK THREE: SALVAGE AND RELOCATION

Per the WVMP, Group 4 Stream salvage and relocations cannot be performed until WVDNR and USFWS conduct a review of the findings and give their approval, with written concurrence provided by USFWS.

Per the WVMP, the minimum first pass salvage effort for heterogeneous substrates which require salvage shall be 1 min/m². The minimum first pass salvage effort for homogenous substrates is 0.5 min/m². Minimum effort for subsequent passes in homogenous substrates is half that defined for heterogeneous substrates. For heterogeneous substrates: if no mussels are observed after a 1 min/m² effort, then that transect segment salvage is complete. If mussels (density of 1-2 mussels in 100 m², or 1 mussel in 1-25 m²) are found during the 1st pass, the minimum second pass effort shall be 1 min/m². Salvage is complete unless the number salvaged during the second pass is equal to or greater than the first pass. In this case, an additional pass is required at a minimum effort of 1 min/m². If mussels (density of 3-29 mussels in 100 m², or 2 mussels to 0.3/m² in <25 m²) are found during the 1st pass, the minimum second pass effort shall be 2.5 min/m². If mussels (density of >0.3 mussels/m²) are found during the 1st pass, the minimum second pass effort shall be 5 min/m². Third and additional passes at 1 min/m² shall be conducted until no more than 5 percent of the original number collected is observed. Original number is defined as the number of mussels found in the 1st and 2nd pass combined.

All live mussels collected within the Project SZ will be moved to a determined relocation area upstream of the Project. One hour of qualitative searches (six, 10 min searches) will be conducted to delineate an area with similar species and equal or better density than the collection area. All observations of resident mussels will be reported including site coordinates in decimal degrees. Non-T&E mussels will be dropped from the boat into the relocation area if the relocation is conducted between May 1 and September 1. If after September 1, mussels shall be hand-placed into substrate within the relocation area.

In the event a fresh dead or living federally listed T&E mussel species is found during the relocation, all work will stop and MSC, WVDNR, and the U.S. Fish and Wildlife Service (USFWS) will be notified.

4.0 COSTS

EnviroScience's costs for the requested tasks are provided in the attached completed RFQ documents (Attachment B).

Attachment A

Qualifications and Key Project Personnel Resumes



SARAH VESELKA

Senior Scientist / Project Manager

Mrs. Veselka has over 20 years of experience conducting stream bioassessments and reporting for research laboratories, non-profits, and private industry. Over the past 12 years, she grew a successful West Virginia based environmental consulting company from the ground up, supporting over 40 employees. Her skills include southern and central Appalachian freshwater fish, mussel, crayfish, and aquatic benthic macroinvertebrate sampling and identification. Mrs. Veselka has most recently focused on freshwater mussel surveys conducting over 200 surveys in the past seven years throughout the Mid-Atlantic and Midwestern regions for a wide range of clients. She is a PADI certified Master Diver and has significant experience with low visibility, large river diving using a dry suit and full-face mask communications. Mrs. Veselka is highly organized and has considerable experience in project management, agency consultations, funding procurement, client relations, and scientific writing.

EDUCATION

M.S. Wildlife & Fisheries
Resources, West Virginia
University, 2004

B.S. Biology, University of Georgia,
2000

CERTIFICATIONS

- USFWS Approved Malacologist (KY, OH, PA, WV, +16 States)
- T&E Coalfields Crayfish Approved Surveyor (KY, WV)
- PADI Master Diver – Drysuit Specialty
- PEC Safeland Basic
- SFS Family Level Taxonomist
- CPR / AED / First Aid / Oxygen Administration

YEARS OF EXPERIENCE

EnviroScience, Inc.: <1

Environmental Consulting: 14

University Labs / Research: 5

Non-profit Watershed Group: 5

RELEVANT EXPERIENCE

Federally Permitted Malacologist

Endangered Mussels

Coalfields T&E Crayfish Surveys

Macroinvertebrate Surveys,
Sorting, and Identification

Freshwater Mussel Surveys

Mussel Translocation and
Monitoring

Fish Community Assessments

PADI Master Diver

Commercial Diving

SELECT PROJECT EXPERIENCE

Substrate Remediation Project(s) Mussel and Fish Surveys, Kanawha River, Charleston, Project Manager / Field Leader, WV, 2018 – Present. Ms. Veselka is the Project Manager / Lead Aquatic Ecologist for freshwater mussel and fish surveys for two large-scale contaminated substrate remediation projects on the Kanawha River in Charleston, WV. This has involved client and agency coordination (USACE, USFWS, and WVDNR) including Section 7 Consultation for located T&E freshwater mussel species, safe field work management, and completion using multiple big river fish survey techniques and SCUBA diving equipment, data QA/QC, and report compilation. Relocations of resident freshwater mussels will be conducted in 2020 using HazMat diving techniques prior to substrate remediation construction activities.

Big River Mussel Surveys Throughout the Mid-Atlantic and Midwest, Project Manager / Field Leader, 2014 – Present. Over the past six years, Ms. Veselka has safely led over 20 mussel surveys in large navigable waterways such as the Ohio River, Monongahela River, and Kanawha River in Kentucky, Ohio, Pennsylvania, and West Virginia. She has successfully managed these projects from start to finish for a wide variety of clients and project types such as petrochemical plants, barge loading facilities, stream bank restoration projects, water withdrawals, and substrate remediation projects. Projects have included both qualitative (Phase I) and quantitative surveys (Phase II) and relocations safely using SCUBA dive equipment and boats.

Ms. Veselka has over 20 years of experience in stream bioassessments and reporting for a wide range of clients.

RELEVANT EXPERIENCE (CONT'D):

Diving / Scuba / Snorkeling

Habitat Assessments

Water Chemistry and Flow Monitoring

Stream Assessment

Scientific Collection Permits in KY, OH, PA, and WV

Water Withdrawal Monitoring

PROFESSIONAL AFFILIATIONS:

Freshwater Mussel Conservation Society

Association of Mid-Atlantic Aquatic Biologists

Ohio River Valley Mollusk Subgroup



Ms. Veselka has overseen the management and the execution of over 200 freshwater mussel surveys throughout the Mid-Atlantic and Midwest, reinforcing her expertise in project management, agency coordination, and all aspects of freshwater mussel surveys, relocations, and monitoring.

West Fork River, WV Dam Removal Project, Project Manager / Field Leader, 2015 - 2016. Ms. Veselka led a project in partnership with the USFWS and WVDNR to survey for and relocate freshwater mussels in conjunction with the removal of three low-head dams on the West Fork River in Harrison County, West Virginia. This project took place in the fall of 2015 and summer of 2016. Ms. Veselka was responsible for coordination, survey design and implementation, mussel identification, and relocation efforts. Over 1,500 freshwater mussels were relocated through the cooperative efforts of state and federal agencies, private industry, and volunteers. The success of this large-scale project demonstrates **Ms. Veselka's** ability to effectively work with numerous partners and coordinate large numbers of volunteers for successful survey and relocation efforts.

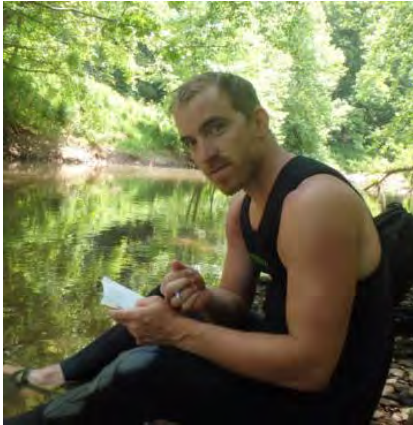
Threatened and Endangered Coalfields Crayfish Surveys, Project Manager / Field Leader, 2016 – Present. Ms. Veselka is certified to conduct surveys for the federally listed endangered Guyandotte River Crayfish (*Cambarus veteranus*) and the federally listed threatened Big Sandy Crayfish (*C. callainus*) throughout both of their ranges in Kentucky, Virginia, and West Virginia. She has led several surveys and successfully managed multiple projects for both species for WVDOH and private industry clients.

Grave Creek Stream Mitigation Project, Post-Construction Monitoring, Project Manager / Field Leader, 2016 - 2019. Ms. Veselka led the chemical, physical, and biological monitoring efforts for Murray Energy following the installation of in-stream mitigation measures along Grave Creek in Marshall County, West Virginia. Post-construction monitoring included water chemistry sampling and analysis, flow monitoring, physical habitat assessments, macroinvertebrate and fish community assessments, and reporting over a three-year period.

Water Withdrawal Monitoring on T&E Mussel Streams, Project Manager / Field Leader, 2016 – Present. Ms. Veselka coordinates with WVDNR and USFWS in the development and implementation of water withdrawal monitoring plans for water withdrawals on T&E mussel streams in West Virginia. This includes periodic flow monitoring, initial freshwater mussel surveys, and the installation of real-time flow, temperature, and dissolved oxygen loggers within and downstream of water withdrawal pools for the protection of T&E freshwater mussel species during long-term water withdrawal projects.

BRIAN CARLSON

Aquatic Biologist / Senior Scientist



EDUCATION

M.S. Wildlife & Fisheries Resources,
West Virginia University, 2013

B.S. Natural Resources
Management & Policy, The Ohio
State University, 2009

YEARS OF EXPERIENCE

EnviroScience, Inc.: <1

Previous Experience: 10

CERTIFICATIONS

Federal Threatened and
Endangered Species Recovery
Permit (TE41671D – 0)

USFWS Approved Surveyor for Big
Sandy Crayfish and Guyandotte
River Crayfish

Society for Freshwater Science
Certified Genus Level Taxonomist
(EPT East & North American
Chironomidae)

State Qualified Freshwater Mussel
Surveyor in West Virginia and Ohio

Certified Benthic Macroinvertebrate
Taxonomist – Maryland Department
of Natural Resources – MBSS

Certified Benthic Macroinvertebrate
Processing – Maryland Department
of Natural Resources – MBSS

Ohio EPA Qualified Data Collector
Level II Qualitative Habitat
Evaluation Index (QHEI)

PADI Certified Open Water,
Advanced Open Water, and
Rescue SCUBA Diver

American Heart Association CPR
and First Aid

Scientific Collection Permits Held in
IL, KY, MD, OH, PA, and WV

Mr. Carlson is an environmental professional who specializes in stream and river ecosystems, specifically benthic macroinvertebrates, fish, and freshwater mussels throughout Appalachia, the Midwest, and Mid-Atlantic regions. He has experience in managing projects from start to finish, including project budget development, client relations, agency correspondence, leading field crews, mussel surveys and relocations, data management and analysis, and report writing. Mr. Carlson is a SFS (formerly NABS) certified benthic macroinvertebrate taxonomist for EPT and Chironomidae genera. In addition, Mr. Carlson holds a Federal Threatened and Endangered Species Recovery Permit (TE41671D – 0) for mussels including: *Cumberlandia monodonta*, *Cyprogenia stegaria*, *Epioblasma obliquata perobliqua*, *Epioblasma obliquata obliquata*, *Epioblasma triquetra*, *Lampsilis orbiculata (=L. abrupta)*, *Obovaria retusa*, *Plethobasus cooperianus*, *Plethobasus cyphus*, *Pleurobema plenum*, *Quadrula cylindrica cylindrica*, and *Villosa fabalis*. He is also a USFWS Approved Surveyor for the federally threatened Big Sandy Crayfish (*Cambarus callainus*) and federally endangered Guyandotte River Crayfish (*Cambarus veteranus*).

SELECTED PROFESSIONAL EXPERIENCE

EnviroScience, Inc. Project Manager / Aquatic Biologist (March 2020-Present). Project manager, taxonomist and diver on endangered species survey and coordination projects throughout the eastern U.S., including T&E mussels and crayfish. Taxonomic expert for macroinvertebrate identification projects, as well as environmental inspector for construction and stormwater projects.

AllStar Ecology, LLC., Fairmont, WV Environmental Scientist III/ Aquatic Biologist (2012 – 2020). Benthic macroinvertebrate and stream/river fish identification and reporting for private industry, non-profits, and universities. Freshwater mussel plan development (based on project designs), surveys, relocations, and agency reporting. Long-term stream flow monitoring and data management. Started and managed water supply sampling program, making sure applicable policies and reporting requirements are maintained. Marketing and company representation at industry and engineering tradeshow and expos in WV, PA, and OH.

West Virginia University, Morgantown, WV Biology Teaching Assistant/ Graduate Research Assistant (2011 – 2013). As a biology teaching assistant, led four to five labs per semester for undergraduate students in the Biology Department

Mr. Carlson specializes in stream and river ecosystems, specifically benthic macroinvertebrates, fish, and freshwater mussels.

RELEVANT EXPERIENCE

Stream and River Ecosystems

Benthic Macroinvertebrates

Fish Species Identification

Freshwater Mussel Surveys and Relocations

Surface and Groundwater Resource Sampling & Monitoring

Budget Development

Client Relations

Agency Correspondence

Data Management and Analysis Reporting

PROFESSIONAL DEVELOPMENT

Member of Society for Freshwater Science

Member of Freshwater Mollusk Conservation Society

Member of Association of Mid-Atlantic Aquatic Biologists

with 25 – 35 students per lab. Executed lesson plans, guided students through labs, developed quizzes, graded assignments, and entered and managed grades within a university database. As a research assistant, identified hundreds of benthic macroinvertebrate samples backlogged each year from 2007, and continued to collect and identify samples for the long-term dataset.

Americorps VISTA, OSMRE, Department of the Interior, Morgantown, WV Watershed Coordinator, Friends of Deckers Creek (2009 – 2011). Watershed-wide benthic macroinvertebrate and fish community surveys and identification, stream physical habitat assessments, water chemistry and bacteria monitoring, fundraiser/event planning and execution, community and donor relations, managing volunteers and volunteer programs, environmental education in public schools, organization outreach at community events, bi-monthly reporting to board of directors, and quarterly reporting to Americorps VISTA.

Ohio Student Union, The Ohio State University, Columbus, OH Event Production Staff (2007 – 2009). Worked with professional and academic staff, as well as student organizations, to execute university sponsored events all over campus and Columbus, OH. Elected by professional staff to the “OSU Students Exhibiting Leadership in the Workplace” student staff group.

Glen Helen Outdoor Education Center, Antioch University, Yellow Springs, OH Education Staff (2008). Led benthic macroinvertebrate field trips and collections for 30+ students. Educated youth on the role and value of benthic macroinvertebrates on a watershed scale. Oversaw safety of all youth participating in classes and events.



REBECCA WINTERRINGER

Senior Scientist / Project Manager / Malacologist

Ms. Winterringer has 22 years of experience conducting aquatic faunal inventories across the U.S. and 18 years in the professional consulting industry. Ms. Winterringer is a proactive, hands-on manager who has supported many state departments of transportation, energy, transmission / pipeline corridor and large river navigation projects. She has extensive experience in aquatic ecology, and she is skilled in natural resource permitting, waterways assessments, GIS, environmental assessments, and aquatic surveys. Ms. Winterringer holds a USFWS Federal Fish and Wildlife recovery permit and several state collection permits for freshwater mussels allowing her to work across the Midwest, Southeast and Northeastern United States. She is listed as a qualified mussel surveyor statewide in Ohio, Pennsylvania, and West Virginia and has recently completed large-scale surveys in Michigan, West Virginia, and New York. She has been diving since 2000 and holds a Rescue Diver certification. Ms. Winterringer is active on various committees for both the Freshwater Mollusk Conservation Society (FMCS) and the Society of Freshwater Science (SFS) member.

EDUCATION

M.S. Biology, Arkansas State University, 2003

B.S. Fisheries Science, Virginia Tech, 2000

CERTIFICATIONS

Approved USFWS / State Mussel / Fish Contractor in >16 States

OH, PA, and WV Approved Malacologist

PADI – Rescue Diver

ODOT Ecological Resources and Water Permits Prequalification

OSHA – 10hr

40-hr HAZWOPER /

CPR / AED / First Aid / Oxygen Administration

YEARS OF EXPERIENCE

EnviroScience, Inc.: <1

TRC Environmental: 4

URS Corporation: 3

Ecological Specialists, Inc.: 7

CCR Environmental, Inc.: 2

Arkansas State University: 2

USFWS Ohio River Islands NWR: 1

Virginia Tech USFWS Coop. Unit: 2

SELECTED PROJECT EXPERIENCE

Marathon Petroleum Company LP, Mussel Survey for Ceredo Fleet Maintenance Dredging Project, Ohio River mile 315, Wayne County, West Virginia (Group 4 Stream), 2019 - Present Project Manager for a mussel survey of the Ceredo Fleeting area in the Ohio River near Kenova, West Virginia. Developed and submitted a Project specific survey plan, performed agency coordination, completed survey fieldwork, and submitted an agency and client required report documenting survey results. Over 3,000 feet of shoreline was surveyed to Protocols resulting in over 1,000 mussels, including two federally listed species. Ms. Winterringer assisted Marathon with Section 7 of the ESA consultation on behalf of the client.

Dow Chemical Company, Risk Assessment for Proposed Mussel Listings and Dow Chemical Facilities in Central Texas, 2019 – Present Ms. Winterringer was the project manager and lead investigator in preparing a risk assessment for Dow regarding several proposed federally listed species. The risk assessment analyzed historical and current known mussel distribution information and reviewed how **Dow's facilities in the Brazos and Guadalupe River Basins** could be affected when and if these species become federally listed. Level of risk and action steps for minimizing risk were presented in the risk assessment document prepared for the Project.

Ms. Winterringer is a proactive, hands-on manager who has supported many state DOT, energy, pipeline corridor, and large river navigation projects.

RELEVANT EXPERIENCE

Stream Ecology

Freshwater Mussels (Unionidae)

Environmental Permitting

Habitat and Biological Assessments (EPA RBP, IBI, IWB, MCI, QHEI, HHEI)

NEPA Compliance

Threatened and Endangered Species

Fisheries Habitat and Biological Assessments

RELEVANT EXPERIENCE

Freshwater Mollusk Conservation Society – Professional Development Ad-hoc Committee (Chair)

Society of Freshwater Science Technical Issues Committee (Co-chair)

West Virginia Division of Highways, Kanawha Falls Bridge Replacement, Mussel Survey of the Kanawha River, Fayette County, West Virginia, 2018 Performed a mussel re-evaluation within the Kanawha River for the proposed replacement of the Kanawha Falls Bridge. Re-evaluation entailed developing a survey design to address federally listed mussels potentially impacted by construction activities. Close coordination with WVDOH, WVDNR, and USFWS was conducted. Project responsibilities entailed scope development, survey plan, fieldwork, and reporting. *Work performed while at previous firm.*

Wellsburg Bridge Project, Brooke County, West Virginia, 2017 - 2018. Conducted Phase 1 of a freshwater mussel salvage and relocation on the Ohio River at river mile 75.8 in Brooke County, West Virginia for the Wellsburg Bridge Project. Ms. Winterringer was the field team leader and Dive Safety Officer (DSO) for this project. She coordinated with WVDNR for this effort and the salvage followed the West Virginia Mussel Survey Protocol. **Utilized the team's** dive vessel and Surface Supplied Air (SSA) equipment to salvage freshwater mussels in the Ohio River ahead of a major bridge construction project connecting Route 2 in Wellsburg, West Virginia and Route 7 in Brilliant, Ohio. *Work performed while at previous firm.*

Spectra Energy, NEXUS Gas Transmission Project, Rare, Threatened, and Endangered Species Coordination, Ohio and Michigan, 2015 – 2018 The NEXUS Project is a 250-mile FERC-regulated pipeline that crosses northern Ohio and southeastern Michigan. Project responsibilities were to manage and coordinate mussel surveys along the entire route, prepare technical documentation associated with surveys, provide agency coordination, and provide ecological survey support. *Work performed while at previous firm.*

Ohio Department of Transportation, Freshwater Mussel Study Bridge Replacement Projects, Freshwater Mussel Surveys, Various Counties throughout Ohio, 2012 – Present Conducted over 80 mussel surveys according to the Ohio Mussel Survey Protocol. Results of the surveys were incorporated into necessary Ohio DOT Environmental Survey Reports required for regulatory review of proposed bridge and municipal projects. Streams surveyed were located throughout Ohio.

Attachment B
WVDNR RFQ
(WVMSP omitted due to file size)