

Solicitation Response(SR) Dept: 0310 ID: ESR0818200000001004 Ver.: 1 Function: New Phase: Final

Modified by batch , 08/18/2020

Header 1



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: VS0000027705	SO Doc ID: DNR2100000008
Legal Name: NV5 Engineers and Consultants, Inc.	Published Date: 8/7/20
Alias/DBA:	Close Date: 8/18/20
Total Bid: \$37,421.00	Close Time: 13:30
Response Date: 08/18/2020	Status: Closed
Response Time: 11:12	Solicitation Description: Addendum No. 01 - Wildlife - Mussel Survey & Relocation
	Total of Header Attachments: 1
	Total of All Attachments: 1



N|V|5

REQUEST FOR PROPOSAL
West Virginia Division of Natural Resources
Mussel Survey & Relocation

Solicitation #: ARFQ DNR21*08

August 18, 2020

August 18, 2020

Mr. Jamie Adkins
West Virginia
Division of Natural Resources
Property & Procurement Office
324 4th Ave
South Charleston WV 25303-1228



RE: RFP – MUSSEL SURVEY & RELOCATION

Dear Mr. Adkins and Selection Committee:

NV5 Engineers and Consultants, Inc. (NV5) is pleased to present our proposed fee estimate for the performance of a mussel survey and potential relocation at the St. Albans Roadside Park in West Virginia.

The West Virginia Division of Natural Resources is making improvements to the boat ramp and dock located at the St. Albans Roadside Park. Some in-stream work in the Kanawha River is anticipated as part of this construction project, which requires a mussel survey and possibly a mussel relocation. The Kanawha River is classified as a High-Quality Water Group 4 Mussel Stream, which is known to support federally endangered species of freshwater mussels.

A **Phase I** mussel survey following the West Virginia Mussel Survey Protocols (WVMSP) will be conducted within the limits of the construction project and all surrounding buffer zones in order to determine whether a diverse mussel population exists and to delineate these populations if they exist. The Phase I survey will be designed using 1 meter wide transects that run perpendicular to the stream flow. These transects will be placed 10 meters apart in the area of direct impact as well as all surrounding buffer zones. According to section 7.4.5 of the WVMSP, a Phase I survey designed in this manner will provide sufficient data and effort needed to detect an endangered species and a **Phase 2** survey will not be required, even if a triggering event occurs during the survey. Depending on the results of the Phase 1 survey, a **Mussel Relocation** may be required at a later time.

Joining our team is Three Oaks Engineering, a woman-owned environmental engineering firm. They will support our efforts as needed with retrieval of mussels from deep water areas using self-contained underwater breathing apparatus (scuba) equipment.

NV5 Engineers and Consultants, Inc. personnel have over 50 years of combined experience surveying for freshwater mussels. Tom Fox is the aquatic surveys project manager and was previously a North Carolina Wildlife Resources Commission aquatic biologist that was responsible for the surveys and restoration of threatened and endangered mussel species in North Carolina. Tom Fox meets all of the surveyor qualifications as outlined in the March 2020, WVMSP and is currently listed on the 2020 WV Approved Freshwater Mussel Surveyor List.

Addendum: We acknowledge receipt of Addendum #1 issued on 8/7/2020

Insurance: We meet the insurance requirements identified on page 15 of the RFQ

Fee: We have uploaded our fee proposal to the links provided on wvOASIS and have included in the back of this submittal

All surveys and deliverables will be completed within 100 days of notice to proceed. If further information or additional documentation is required please feel free to contact me. We appreciate this opportunity to work for The West Virginia Division of Natural Resources.

Sincerely,

A handwritten signature in black ink that reads "Heather Wallace".

Heather Wallace | Environmental Services Group Manager | heather.wallace@NV5.com | cell: 919.357.3646

TEAM EXPERIENCE



ENVIRONMENTAL

Cary, NC

tom.fox@NV5.com

919.858.1893

EDUCATION

M.S. Fisheries, Wildlife, and Conservation Biology, North Carolina State University, 2013

B.S., Biology, The George Washington University, 2006

EXPERIENCE

15 years

TOM FOX

Project Manager/Senior Biologist



Tom is an aquatic biologist with over 15 years of experience in the environmental field. He is a sought-after subject matter expert on North Carolina mussels who routinely speaks at industry symposiums. Tom comes to NV5 from the North Carolina Wildlife Resources Commission (NCWRC), where he served as aquatic wildlife diversity biologist.

Licenses & Certifications

Federally Permitted, West Virginia Qualified Mussel Surveyor

North Carolina Wildlife Resources Commission - Endangered Species Permit for freshwater mussels, fish, crayfish, snails, Neuse River Waterdog, Eastern Hellbender, and Mudpuppy; Statewide, NC

North Carolina Wildlife Resources Commission Scientific Fish Collecting License for all species statewide

NOAA Permit to take/collect, receive/possess, and import/export protected species parts for scientific purposes: Atlantic Sturgeon and Shortnose Sturgeon

PADI Open Water Diver Certification (1997)

PADI Advanced Open Water Diver Certification (2005)

Project Experience

NCDOT, PROTECTED AQUATIC SPECIES SURVEYS

VARIOUS COUNTIES, NC

Since 2018, Tom has completed 37 tasks for NCDOT that would potentially have direct impacts to federally listed aquatic species. Tom served as the project manager for each project and was responsible for survey design, transect/grid layout, survey completion, supervision of field staff, data collection, data analysis, map design, and report writing, as well as writing the scope of work, developing fee estimates, and coordinating with various state and federal agencies.

NCDOT, NC 191 WIDENING AQUATIC SPECIES SURVEYS

BUNCOMBE COUNTY, NC

NV5 performed surveys for USFWS federally listed, USFS Species of concern, and North Carolina state listed species along a four-mile widening project of NC 191. Aquatic surveys of fish, mussels, amphibian and crustaceans included USFWS listed blotchside logperch (*Percina burtoni*), longhead darter (*Percina macrocephala*), hellbender (*Cryptobranchus alleganiensis*), Appalachian elktoe (*Alasmidonta raveneliana*), and French Broad crayfish (*Cambarus reburus*) in addition to 26 USFS and North Carolina special concern or listed species along 5,600 linear meters of aquatic habitat. In addition, NV5 biologists performed habitat assessments and noted potential habitat for federally protected northern long-eared bat (*Myotis septentrionalis*), and Indiana bat (*Myotis sodalis*). Additional botanical, arthropod, avian,

TEAM EXPERIENCE

TOM FOX

herpetological, and terrestrial gastropod surveys were conducted in 9.89 acres of forest service property potentially affected by the widening project. Notable discoveries included new occurrences of Federally endangered Appalachian elktoe (*Alasmidonta raveneliana*), North Carolina threatened creeper mussel (*Strophitus undulatus*), and North Carolina endangered slippershell mussel (*Alasmidonta viridis*) in the French Broad River. In addition, biologists confirmed the continued presence of French Broad Crayfish (*Cambarus reburrus*) in Bent Creek. A Biological Evaluation was prepared for this project to summarize findings of field investigations and predict potential effects on RTE species. Tom Fox served as the aquatics project manager.

NCDOT, PROGRAMMATIC BIOLOGICAL ASSESSMENT VARIOUS COUNTIES, NC

The purpose of the Programmatic Biological Assessment (PBA) was to evaluate the potential effects of proposed NCDOT bridge and culvert replacements, repairs, and rehabilitations with a federal nexus in NCDOT divisions 2, 4, 5, and 7 on a pair of aquatic species proposed for federal listing, and any future associated designated critical habitat associated with those species in accordance with Section 7 of the Endangered Species Act (ESA). The PBA evaluates 584 individual projects included in NCDOT's 2020-2029 State Transportation Improvement Program that may have adverse effects on the Carolina Madtom or Neuse River Waterdog. Coordination between NCDOT, Federal Highway Administration, U.S. Army Corps of Engineers, and U.S. Fish and Wildlife Service was necessary during this project to ensure compliance under Section 404 of the Clean Water Act and Section 7 of the ESA. This solution ensures ESA compliance is a programmatic approach for formal and informal consultation which streamlines the NCDOT project delivery process. Tom served as project manager.

NCWRC AND NC STATE UNIVERSITY, SURVEYS, BROODSTOCK COLLECTION, AND REFINING PROPAGATION TECHNIQUES FOR FRESHWATER MUSSELS VARIOUS COUNTIES, NC

Tom was both the lead and a team member for several projects throughout the state that focused on collecting and propagating freshwater mussels. Mussel species propagated include: Dwarf Wedgemussel (*Alasmidonta heterodon*), Tar River Spiny mussel (*Parvaspina steinstansana*), Appalachian Elktoe (*Alasmidonta raveneliana*), Carolina Heelsplitter (*Lasmigona decorata*), Yellow Lance (*Elliptio lanceolata*), Atlantic Pigtoe (*Fusconaia masoni*), Brook Floater (*Alasmidonta varicosa*), Creeper (*Strophitus undulatus*),

Eastern Creekshell (*Villosa delumbis*), Eastern Lampmussel (*Lampsilis radiata*), Notched Rainbow (*Villosa constricta*), Savannah Lilliput (*Toxolasma pullus*), Triangle Floater (*Alasmidonta undulata*), Wavyrayed Lampmussel (*Lampsilis fasciola*), Yellow Lampmussel (*Lampsilis cariosa*), Eastern Pondmussel (*Ligumia nasuta*). River basins worked in: Tar, Neuse, Chowan, Roanoke, Cape Fear, Lumber, Yadkin-Pee Dee, Catawba, French Broad, and Little Tennessee.

NCWRC, TAR RIVER SPINYMUSSEL (PARVASPINA STEINSTANSANA) BROODSTOCK COLLECTION, PROPAGATION, AUGMENTATION, AND MONITORING EASTERN NC

Tom was the project lead from 2015-2018. Freshwater mussel surveys via snorkeling and view scoping were conducted throughout the range of the Tar River Spiny mussel (*Parvaspina steinstansana*) in the Tar and Neuse River basins. All live individual Tar River Spiny mussels were collected and transported to the Conservation Aquaculture Center in Marion, North Carolina where captive propagation efforts took place. All juveniles that grew to a size of >15mm were individually tagged and released into the river. To date, more than 14,000 mussels have been released at seven locations in Fishing and Little Fishing Creeks. Every other year quantitative and qualitative mussel surveys were conducted at the augmentation areas to determine survival, growth rate, and movement patterns of propagated mussels.

NC STATE UNIVERSITY, APPALACHIAN ELKTOE (ALASMIDONTA RAVENELIANA) BROODSTOCK COLLECTION WESTERN, NC

Tom has propagated several federally endangered mussels, including the Appalachian Elktoe (*Alasmidonta raveneliana*). To collect gravid females for propagation efforts, mussel surveys in the Little Tennessee and French Broad river basins were completed. Gravid mussels were safely transported to the propagation facility and promptly returned to their collection location as soon as the propagation was completed.

NCWRC, STATUS ASSESSMENT AND DISTRIBUTION OF THE YELLOW LANCE (ELLIPTIO LANCEOLATA) EASTERN NC

From 2016-2017, Tom was the project lead conducting targeted surveys for the Yellow Lance (*Elliptio lanceolata*). As surveys had not been conducted in 10 years, this project updated the status of the Yellow Lance in North Carolina. Thirty sites throughout its range in the Tar and Neuse River basins were surveyed, and intensive surveys using transects were conducted at all sites which yielded a ≥ 0.85 probability

TEAM EXPERIENCE

TOM FOX

that a Yellow Lance will be found if they are present in the survey location. Habitat assessment, identification of future augmentation areas, and broodstock collection also occurred throughout the duration of the project.

NCWRC, EFFECTS OF NEW FERC MINIMUM FLOW REQUIREMENTS OF HYDROELECTRIC DAMS IN THE YADKIN-PEE DEE RIVER ON MUSSEL BED DENSITIES

ANSON, RICHMOND, STANLY, MONTGOMERY COUNTIES, NC

In 2013, 2015, 2017, and 2019, Tom was a key team member of this project with duties that involved laying out survey grids/transects, supervising field staff, data collection, data analysis, survey completion and species identification. Three longterm monitoring sites were established in the tailrace of three different hydroelectric dams to determine how new FERC mandated minimum flows will effect mussel populations. A three random start survey was used at existing mussel beds to conduct a quantitative and qualitative survey to determine species density and species richness. Visual surveys and excavations were conducted within .25-meters-squared quadrats.

NCWRC, HABITAT ASSESSMENT FOR POSSIBLE CAROLINA HEELSPLITTER REINTRODUCTION

CENTRAL NC

Tom was a key team member for a project with NCWRC that was tasked with identifying habitat for possible future reintroductions of the federally endangered Carolina Heelsplitter (*Lasmigona decorata*). NCWRC and NCSU started a Carolina Heelsplitter propagation program and quickly demonstrated positive results. Due to the severely degraded nature of the habitat where the broodstock were collected, new locations within its historic range needed to be identified for future reintroduction efforts. Mussel surveys throughout the Uwharrie River watershed were conducted to collect any broodstock and identify prime mussel habitat for reintroduction of the species.

NCWRC, EFFECTS OF HYDRILLA AND LYNGBYA TREATMENT ON FRESHWATER MUSSEL POPULATIONS IN LAKE WACCAMAW

COLUMBUS COUNTY, NC

In 2013, 2015, 2017, and 2019, Tom was a key team member of this project with duties that involved laying out survey grids/transects, supervising field staff, data collection, data analysis, survey completion and species identification. Four longterm monitoring sites were established at known mussel beds in Lake Waccamaw where herbicidal hydrilla and lyngbya treatment were taking place. A three random start survey was used at each site beds to conduct a quantitative

and qualitative survey to determine species density and species richness. Visual surveys and excavations were conducted within .25-meters-squared quadrats to determine if mussel populations were negatively effected by the herbicidal application.

NCWRC, BROOK FLOATER (ALASMIDONTA VARICOSA) STATUS ASSESSMENT

STATEWIDE, NC

Tom assisted on surveys meant to update the status of the Brook Floater (*Alasmidonta varicosa*) in North Carolina. The Brook Floater was petitioned for federal listing under the ESA, so to get a better understanding of the population size and distribution of the species in North Carolina, a rapid assessment protocol was utilized to aid decision making in the Species Status Assessment process.

NC STATE UNIVERSITY, FRESHWATER MUSSEL SPECIES INVENTORY OF THE WATERS ON FORT BRAGG

FAYETTEVILLE, NC

From 2014-2015, Tom was the project lead and performed grant proposal writing, preliminary surveys, site selection, survey design and implementation, data analysis, and final report preparation. Qualitative and quantitative surveys were completed throughout Fort Bragg to compare mussel populations found in four different waterways. Stream sediment metrics and samples were collected to be used for stream geomorphology modeling. Mussel populations and stream reaches that would benefit from stream restoration were also identified for future restoration projects.

NCWRC, MUSSEL RECOLONIZATION WITHIN A RESTORED BRAIDED-CHANNEL HABITAT BELOW THE ROANOKE RAPIDS DAM

ROANOKE RAPIDS, NC

In 2004, Dominion Power began releasing water into the bypass reach below Roanoke Rapids Dam to provide additional spawning habitat for anadromous fish species. This previously dewatered portion of the river now had the opportunity to be recolonized by native mussel species if the appropriate host fish occupies the new habitat. In 2007 and 2014, Tom was a key team member that surveyed the bypass channel, identifying any available mussel habitat and taking an inventory of the species found. Several species of mussel that use anadromous fish species as its host were documented during the surveys, indicating that the new minimum flow issued by Dominion Power has been beneficial to the native freshwater mussel community.

TEAM EXPERIENCE

TOM FOX

NCWRC, FRESHWATER MUSSEL TRANSLOCATIONS AND IMPACT ASSESSMENT FOR A CHOWAN RIVER BOAT RAMP

EASTERN NC

As the Eastern Region Aquatic Wildlife Diversity Biologist with NCWRC, in 2016, Tom was the lead on a project to determine the impact that a boat ramp construction would have on the native mussel community in the Chowan River. Since several state listed mussel species were known from the area, all mussels in the immediate impacted area of construction were removed via three pass depletion surveys using transect lines and quadrats, and mussels were translocated upstream, away from the construction activity. Initial comments, site reconnaissance, follow-up surveys, and construction recommendations to minimize impacts were provided to the engineering and planning teams responsible for boat ramp construction.

NCWRC, MUSSEL INVENTORY AND HABITAT ASSESSMENT OF THE UPPER YADKIN RIVER

CENTRAL NC

Tom was a key member in an effort to inventory the mussel distribution in the upper Yadkin River Basin. Very few targeted mussel survey have been conducted in the upper Yadkin River Basin. In order to get baseline mussel distribution data for that area, preliminary sites were selected and a habitat assessment was completed to determine the likelihood of mussel colonization. Exploratory mussel surveys were conducted at sites with suitable habitat throughout the river basin.

NCWRC, DWARF WEDGEMUSSEL (*ALASMIDONTA HETERODON*) HABITAT RESTORATION THROUGH BEAVER DAM REMOVALS

EASTERN, NC

Tom was a key team member in an effort to restore the federally endangered Dwarf Wedgemussel (*Alasmidonta heterodon*) habitat by trapping and removing beaver dams. Several of the locations that historically had the highest abundance of Dwarf Wedgemussel present have become inundated with water impounded by the creation of beaver dams. The inundation of flowing waters caused significant declines in the Dwarf Wedgemussel population numbers. A series of beaver dams in two different streams were removed, followed by trapping of beavers to prevent them from rebuilding the dams. Removal of the beaver dams has opened up more than five miles of previously inundated Dwarf Wedgemussel habitat, allowing for future mussel recolonization or augmentation efforts.

NC STATE UNIVERSITY, THE USE OF SEROTONIN TO INDUCE RELEASE OF GLOCHIDIA BY CONGLUTINATE-PRODUCING FRESHWATER MUSSELS

RALEIGH, NC

Tom was the lead on a study that investigated alternate techniques to minimize gill tissue damage on species that release conglutinates or mucous masses of glochidia. Chemically inducing glochidial release is an alternative for these species that could preserve gill integrity while allowing for larval collection in a timely manner. We exposed gravid *Strophitus undulatus* and *Ptychobranchus subtentum* to three concentrations of serotonin. The lowest two concentrations provided the quickest release of conglutinates and successfully transformed into juveniles on their host fish, proving to be a viable alternative to gill puncture.

NC STATE UNIVERSITY, APPALACHIAN ELKTOE METABOLOMICS

WESTERN, NC

Tom assisted in a study to characterize the metagenomics and metabolomics gut content of the Appalachian Elktoe (*Alasmidonta raveneliana*) and Wavy-rayed Lampmussel (*Lampsilis fasciola*) in the Little Tennessee and Tuckasegee Rivers. Conducted mussel surveys, caging, and necropsies of the Appalachian Elktoe.

NCWRC, AGE CLASS COMPOSITION OF THE TRIANGLE FLOATER IN THE NEUSE RIVER

RALEIGH, NC

Tom was the lead on a project to determine the age class composition of the Triangle Floater (*Alasmidonta undulata*) in the Neuse River. Very little is known about the age composition of mussel populations in North Carolina and the method of aging live mussels by reading external annuli is extremely inaccurate for some species, especially large mussels that are known to grow slowly. A large muskrat midden with several hundred Triangle Floater shells provided an opportunity to compare mussel aging techniques. A slow speed saw was used to thin section the mussel shells and read the internal annuli with a dissecting microscope. Significant differences were present between reading internal annuli vs external annuli, with internal annuli providing a more accurate age of mussel shells, ranging from 3-13 years old.

NC STATE UNIVERSITY AND NCWRC, HOST FISH COLLECTION FOR THREATENED AND ENDANGERED FRESHWATER MUSSEL SPECIES IN NORTH CAROLINA

STATEWIDE, NC

TOM FOX



Certificate of Completion

Presented to

Thomas Fox

In recognition for participation and completion of the professional development course

Freshwater Mussels of West Virginia:
Life History and Identification

This certificate is awarded from the

West Virginia University Natural History Museum

On the 28th day of February 2020

James T. Anderson
WVU Natural History Museum Director

Janet L. Clayton
Course Instructor
Wildlife Diversity Biologist - WVDNR

TEAM EXPERIENCE

MACK DES CHAMPS

Environmental Scientist



Mack has served as biologist, conducting field investigations, conducting surveys for a variety of species in various habitats and preparing ecological site assessments. He has worked closely with Departments of Transportation and public utilities to mitigate effect and remediation of damage. He and the NV5 environmental team are currently providing surveys and studies of the Gray Bat for various NCDOT projects

EDUCATION

B.S., Zoology, North Carolina State University, 2015

EXPERIENCE

7 years

Project Experience

NCDOT, WESTERN, EASTERN, & CENTRAL AQUATICS SURVEYS, VARIOUS COUNTIES, NC

Mack conducted field surveys for freshwater mussels and fish 400 meters downstream and 100 meters upstream of each bridge or road crossing. Additional responsibilities included site reconnaissance and data management.

NCDOT, PROTECTED AQUATIC SPECIES SURVEYS, VARIOUS COUNTIES, NC

Since 2018, Mack has assisted in the completion of 22 tasks for NCDOT that would potentially have direct impacts to federally listed aquatic species in eastern, central, and western North Carolina. Mack served in a supporting role to project manager and permitted aquatic biologist Tom Fox for each of the projects listed below. His contributions included through field surveys/habitat assessments, data collection and analysis, map design, and report writing. In 2019, he took lead on mapping and report drafts for eastern and central NC projects.

TREVOR HALL

Junior Environmental Scientist



Trevor's experience is focused on aquatic survey techniques (backpack and boat electro fishing and gillnetting) along with the use of snorkeling/scuba equipment for monitoring and collection. He has also assisted with wetland and stream identification and classification, endangered species surveys, mist netting and monitoring for bats, and macroinvertebrate identification. Trevor has assisted with aquatic species surveys for Appalachian Elktoe, Atlantic Pigtoe, Brook Floater, Cape Fear shiner, Carolina Madtom, Dwarf wedgemussel, Green floater, James River spiny mussel, Neuse River waterdog, Roanoke logperch, Tar River spiny mussel, and Yellow lance.

EDUCATION

B.S., Environmental Science, Ecology and Wildlife Biology concentrations, University of Delaware, 2016

EXPERIENCE

4 years

Project Experience

NCDOT, I-40 WIDENING, DURHAM & ORANGE COUNTIES, NC

NV5 evaluated several streams in the Neuse and Cape Fear River basins for endangered fish, mussels, and salamanders.

NCDOT, NC 191 WIDENING, BUNCOMBE COUNTY, NC

NV5 conducted Appalachian Elktoe surveys covering a roughly two mile stretch of the French Broad River. During these freshwater mussel surveys, a new occurrence of the Appalachian Elktoe was found, as well as a new occurrence for the Slippershell mussel.

NCDOT, BRIDGE REPLACEMENT OVER SWIFT CREEK, EDGEcombe COUNTY, NC

NV5 completed surveys for the Neuse River Waterdog via trapping and snorkeling on Swift Creek (Tar River Watershed). Eighteen individuals were found during this survey.

TIM SAVIDGE
Aquatic Biologist



Tim is an environmental manager/aquatic biologist with Three Oaks. His duties include protected species surveys, aquatic surveys, flora and fauna investigations, natural resource investigations, as well as project oversight. He regularly coordinates with state and federal agencies with regard to protected species and has over 28 years of experience in natural community classification, floral and faunal identification, wetland and stream delineation, SAV identification and relocation, and protected species surveys. Tim’s specialization lies in the field of aquatic ecology, with particular regard to freshwater mussels and he has led over 500 surveys for freshwater mussels in the southeast US. He currently is the Chair of the Scientific Council for Mollusks for the state of North Carolina.

Project Experience

FRESHWATER MUSSEL SURVEY TRAINING, MULTIPLE LOCATIONS, NC & SC

Tim provided training for two SCDOT staff members on freshwater mussel surveys and identification, targeting rare and federally endangered species. The final examination for the training program involved administering final exams on survey techniques and mussel identification, followed by a recommendation letter for the two participants to accompany their respective Endangered Species Collection Permit applications.

LAKE GREENWOOD FRESHWATER MUSSEL SURVEYS, VARIOUS COUNTIES, SC

As part of a FERC relicensing project, Tim and Three Oaks staff performed freshwater mussel surveys at 44 sites strategically placed throughout the 11,500-acre lake. Habitat types were evaluated at each location, including the use of SCUBA in deep-water habitats. Recommendations were provided on how to improve water quality and manage the Savannah Liliput populations observed throughout the Lake.

CAMP BUTNER, BIOLOGICAL INVENTORY, GRANVILLE COUNTY, NC

Tim led the Three Oaks staff in a faunal survey of the 4,880-acre Camp Butner Training Center. Surveys were conducted birds, mammal (including bats), fish, reptiles, amphibians, aquatic & terrestrial macroinvertebrates, freshwater mussels, freshwater snails, and crayfish. A detailed summary of survey efforts as well as management recommendations were provided for more than 480 invertebrates and 172 vertebrates.

MULTIPLE DAM REMOVAL PROJECTS, SOUTHEAST UNITED STATES

Tim has been the project manager for five dam removal projects, including four in North Carolina. He developed the baseline study, monitoring protocol, and mussel relocation study for each, oversaw their implementation, and authored the reports. He was instrumental in developing monitoring protocols that were effective, repeatable, and efficient. Species studied included freshwater mussels, anadromous fish, and aquatic salamanders.

NEUSE RIVER WATERDOG TRAPPING SURVEY, MULTIPLE BRIDGE REPLACEMENT PROJECTS, CRAVEN, HALIFAX, JOHNSTON, NASH, ORANGE AND WAYNE COUNTIES, NC

Three Oaks staff conducted surveys targeting the Neuse River Waterdog to determine potential for this species to occur within the respective project action areas.

EDUCATION

M.S., Marine Biology/Biological Oceanography, University of North Carolina – Wilmington, 1998;
 B.S., Biology, Guilford College, 1987

EXPERIENCE

28 years

LICENSES/ CERTIFICATIONS

Federal Fish and Wildlife Permit
 Endangered Species-Freshwater Mussels, North Carolina, South Carolina and Georgia – TE075920-0

North Carolina Endangered Species Permit-Freshwater Mussels (all species), Spotfin Chub, Cape Fear

Shiner, crayfish and aquatic snails, Survey and Collection Permit - NC-2020 ES 34

North Carolina Scientific Fish Collection Permit Category C, License No. 0732

Virginia Department of Game and Inland Fisheries Scientific Collection Permit – 023895 and

Threatened/ Endangered Species Permit-Freshwater Mussels – 023896

Georgia Dept. of Natural Resources Scientific Collecting Permit – 29-WMB-03-209

National Highway Institute-Project Development and Environmental Documentation Certification



West Virginia Contractor Licensing Board

Phone (304) 558-7890

labor.wv.gov

Facsimile (304) 558-5174

8/9/2018

NV5 LLC
200 SOUTH PARK RD STE 350
HOLLYWOOD, FL 33021

To Whom It May Concern:

The West Virginia Contractor Licensing Board has issued a contractor license to NV5 LLC. As of this date, the licensee is in good standing with the requirements of the Contractor Licensing Act.

Pertinent information regarding their license is listed below:

Company name: NV5 LLC
200 SOUTH PARK RD STE 350
HOLLYWOOD, FL 33021

License #: **WV057723**

Issue date: 8/9/2018

Expiration date: 8/9/2019

Classifications: BUSINESS & LAW

Untested Classifications: CONSULTING IN OIL & GAS INDUSTRY
(ENVIRONMENTAL INSPECTION & SUPERVISION)

If additional information is needed, please feel free to contact our office at (304) 558-7890 for assistance.

Sincerely,

Gene Thompson
Chairman

GT/MB

Tested Classification Descriptions Only

(A-Electrical) (B-General Building) (C-General Engineering) (D-HVAC) (E-Multi-Family) (F-Piping) (G-Plumbing) (H-Residential) (I-Specialty) (002-Excavation) (004-Masonry) (005-Remodeling & Repair) (007-Concrete) (011-Structural Steel) (013-Manufactured Home Installation) (014-Sprinkler & Fire Protection) (021-Utilities (Sewer & Water)

1900 Kanawha Boulevard East • State Capitol Complex • Building 3, Room 200 • Charleston, WV 25305



**WEST VIRGINIA
STATE TAX DEPARTMENT
BUSINESS REGISTRATION
CERTIFICATE**

ISSUED TO:
**NV5, LLC
200 S PARK RD 350
HOLLYWOOD, FL 33021-8798**

BUSINESS REGISTRATION ACCOUNT NUMBER: **2280-2116**

This certificate is issued on: **08/08/2018**

*This certificate is issued by
the West Virginia State Tax Commissioner
in accordance with Chapter 11, Article 12, of the West Virginia Code.*

*The person or organization identified on this certificate is registered
to conduct business in the State of West Virginia at the location above.*

This certificate is not transferrable and must be displayed at the location for which issued.

This certificate shall be permanent until cessation of the business for which the certificate of registration was granted or until it is suspended, revoked or cancelled by the Tax Commissioner.

Change in name or change of location shall be considered a cessation of the business and a new certificate shall be required.

TRAVELING/STREET VENDORS: Must carry a copy of this certificate in every vehicle operated by them.
CONTRACTORS, DRILLING OPERATORS, TIMBER/LOGGING OPERATIONS: Must have a copy of this certificate displayed at every job site within West Virginia.

atL006 v.19
L0584102336

NV5: DELIVERING SOLUTIONS — IMPROVING LIVES

NV5 provides engineering and consulting services to public and private sectors, delivering solutions that help our clients plan, design, build, test, certify, and operate projects that improve the communities where we live and work. As engineers, construction/program managers, commissioning authorities, and environmental professionals, we play a significant role in shaping our communities through the services we provide. NV5 takes pride in helping our clients develop and deliver cost-effective, sustainable projects that improve lives and deliver solutions.

NV5 CAROLINAS

For 26 years as CALYX Engineers and Consultants, we developed a reputation for providing quality services throughout the Southeast. Our ownership has changed, but our people have not. As NV5, we have the opportunity to build upon our service offerings, project opportunities, technology, and talent to best serve our clients. We remain ready to assist you with your most ambitious plans.

Same outstanding talent. More resources.

Corporate Structure: NV5 Engineers and Consultants, Inc. is a corporation, incorporated in North Carolina.

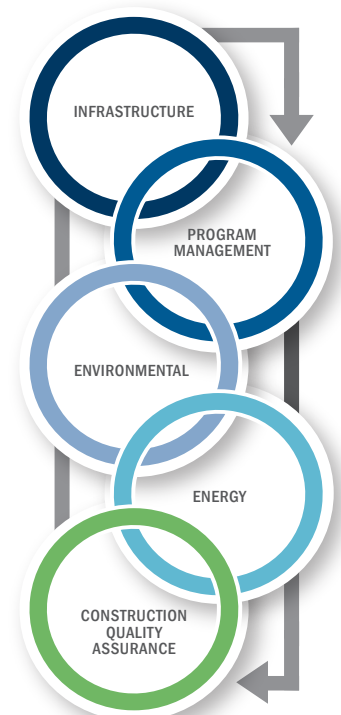
Years in Business: 26

Employees: 210 (regional)/3,400 (NV5 National)

For a comprehensive list of services around the world, visit us online.

NV5.com

SERVICES
Bridge/Structure Design
Building Structures
Construction Services
Cultural Resources
Environmental Services
GIS
MEP
Planning
Site/Civil Engineering
Surveying
Technology
Traffic Engineering
Transportation
Utility Services
Water Resources



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.



(Name, Title)

Heather Wallace - Environmental Services Group Manager

(Printed Name and Title)

PO Box 33127, Raleigh, NC 27636-3127

(Address)

P: 919.858.1812 | F: 919.836.4801

(Phone Number) / (Fax Number)

heather.wallace@NV5.com

(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.

NV5 Engineers & Consultants

(Company)



(Authorized Signature) (Representative Name, Title)

Jill Wells Heath, LEED AP - Executive Vice President

(Printed Name and Title of Authorized Representative)

August 18, 2020

(Date)

Phone: 919.836.4807 Fax: 919.836.4801 Email: jill.heath@NV5.com

(Phone Number) (Fax Number)

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	\$27,227.00	\$27,227.00
4.1.2	Phase II Mussel Survey	1	LS	n/a	n/a
4.1.3	Mussel Relocation Services (Daily Rate)	1*	Day	\$10,194.00	\$10,194.00
TOTAL BID AMOUNT:					\$37,421.00

08/18/2020

Authorized Vendor Signature

Date

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