

AtkinsRéalis



MIDDLE PENINSULA PLANNING DISTRICT COMMISSION

Guinea Resilience & Innovation for Tidal Wetlands [GRIT] – Phase I Project

RFP#: FY26-GRIT1

February 10, 2026



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Section 1

COVER SHEET

Section 1: Cover Sheet

- a. **The name of the firm and the location of the office that will have the responsibility for the services to be provided.**

Firm Name: AtkinsRéalis USA Inc.

Primary Location: 1925 Ballenger Avenue, Suite 400, Alexandria, VA 22314

- b. **The name, address and phone number of a key representative who is knowledgeable about the proposal.**

Key Representative: Doug Gaffney, PE, BC.CE

Address: 1925 Ballenger Avenue, Suite 400, Alexandria, VA 22314

Phone Number : 856.924.3363

- c. **The signature of an officer or employee having the authority to bind the company by their signature. Signatures by anyone other than the president, vice president, or general partner should have accompanying documentation that the individual is empowered to bind the company or partnership.**

Dean Goodison, Vice President is duly authorized to bind the company by his signature.



Dean Goodison, PE

Vice President

Dean.Goodison@atkinsrealis.com | 919.431.5248



COVER LETTER

AtkinsRéalis

Section 1a: Cover Letter

February 10, 2026

AtkinsRéalis USA Inc.

1925 Ballenger Avenue
Suite 400
Alexandria, VA 22314

Middle Peninsula Planning District Commission (MPPDC)

4521 Lewis B. Puller Memorial Highway
Mattaponi, Virginia 23110

Re: Request for Proposal for Guinea Resilience & Innovation for Tidal Wetlands (GRIT) – Phase I Project

Dear Ms. Strevig and esteemed Selection Committee Members,

AtkinsRéalis is pleased to submit our proposal for the GRIT – Phase I Project. We appreciate the opportunity to partner with the MPPDC to advance resilience planning for tidal wetlands and shorelines within the Guinea Marsh Wildlife Management Area and adjacent Mobjack Bay marsh islands. We understand the importance of this project to MPPDC as it directly advances the Commission's priority to safeguard and restore the region's tidal marshes and shorelines through innovative, nature-based resilience strategies—ensuring the long-term ecological health, community protection, and adaptive capacity of the Guinea Marsh system and surrounding coastal habitats in the face of climate change and sea-level rise.



Broad range of expertise: Our team consists of five "**Fight the Flood**" (FTF) companies—**AtkinsRéalis, Biogenic Solutions Consulting, Earth Systems Management, Getting It Done Company, and J&R Coastal Marine Services**—along with additional Virginia-based partners **CarverCo** and **Kent Communications**. This collective expertise spans design, dredging, beneficial use of dredged material, and nature-based shoreline protection solutions. As a proud member of the FTF program, our experience will lead to innovative, cost-effective strategies that can be built, aligned with regional resilience priorities and measurable ecological benefits.



Local experience: AtkinsRéalis partners have successfully competed for contracts and completed projects for, and in direct coordination with, **MPPDC** and other **Virginia project sponsors**. Our team has hands-on experience with reef products of our own design (**C-Domes, Castle Topper Reefs, Diamond Reefs, X-Reefs**) and shoreline-protection technologies from other companies, including: **Natrx, Inc.'s** ExoForms, Wave Brushes, and Wave Slopes; **Allied Concrete Company's** Oyster Castles; **Envirolok, LLC's** EnviroLok Bags; **Groh Land; Air and Water LLC's** and Biopolymer Flocculant; **Motz Enterprises, Inc.'s** Flexamat; **Native Shorelines' QuickReefs; ReadyReef, Inc.'s** Concrete Buttress Reefs, **SNF, Inc.'s** Polymer Flocculant; **SOX LLC's** ShoreSOX and DredgeSOX; **Solmax's** Geotubes (conventional and hybrid designs).





Depth of resources: MPPDC will have access to a multidisciplinary team of **coastal engineers, ecologists, GIS specialists, and permitting experts**, supported by an extensive network of collaborators. Our team has directly worked with organizations such as **Allied Concrete Company, Aragonite Products, Atlantic Reefmaker, Consociate Media, Native Shorelines, Natrx, Oyster Company of Virginia,**

ReadyReef, Seaward Marine Corporation, Shore Consulting Group, SOX LLC, Universal Laboratories, and many others.

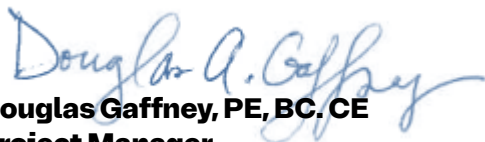
Members of our team have coordinated with and/or worked for agencies and entities including:

- Middle Peninsula Planning District Commission (MPPDC)
- Accomack-Northampton Planning District Commission (A-NPDC)
- Cities of Chesapeake, Norfolk, and Virginia Beach
- Counties of Gloucester, Mathews, Henrico, and Middlesex
- National Fish and Wildlife Foundation (NFWF)
- National Oceanographic and Atmospheric Administration (NOAA), US Army Corps of Engineers (USACE), US Environmental Protection Agency (EPA), US Fish and Wildlife Service (USFWS)
- Virginia State Agencies: Department of Environmental Quality (DEQ), Virginia Department of Transportation (VDOT), Virginia Institute of Marine Science (VIMS), Virginia Marine Resources Commission (VMRC)
- Virginia Pollution Abatement (VPA) (permit/program)
- Virginia Sea Grant
- RISE Resilience Innovations, Coastal Virginia Adaptation & Resilience Consortium (COVA)

This depth of resources assures the capacity and flexibility needed to meet Phase I project milestones and the experience and capability to execute Phase II. Our team is able to adapt to evolving conditions, whether they are financial, institutional or environmental.

We are confident that our proven approach, technical capabilities, and commitment to collaboration will help MPPDC achieve its resilience objectives. Our **project manager** and **key representative Doug Gaffney, PE, BC, CE** and our Onsite Technical Advisor **Russell Burke** from Biogenic Solutions Consulting, LLC will serve as the primary point of contact for MPPDC.

Sincerely,



Douglas Gaffney, PE, BC, CE
Project Manager

Doug.Gaffney@atkinsrealis.com

856.924.3363



Russell Burke, Ph.D.
Onsite Technical Advisor

rburke@biogenicsolutionsconsulting.com

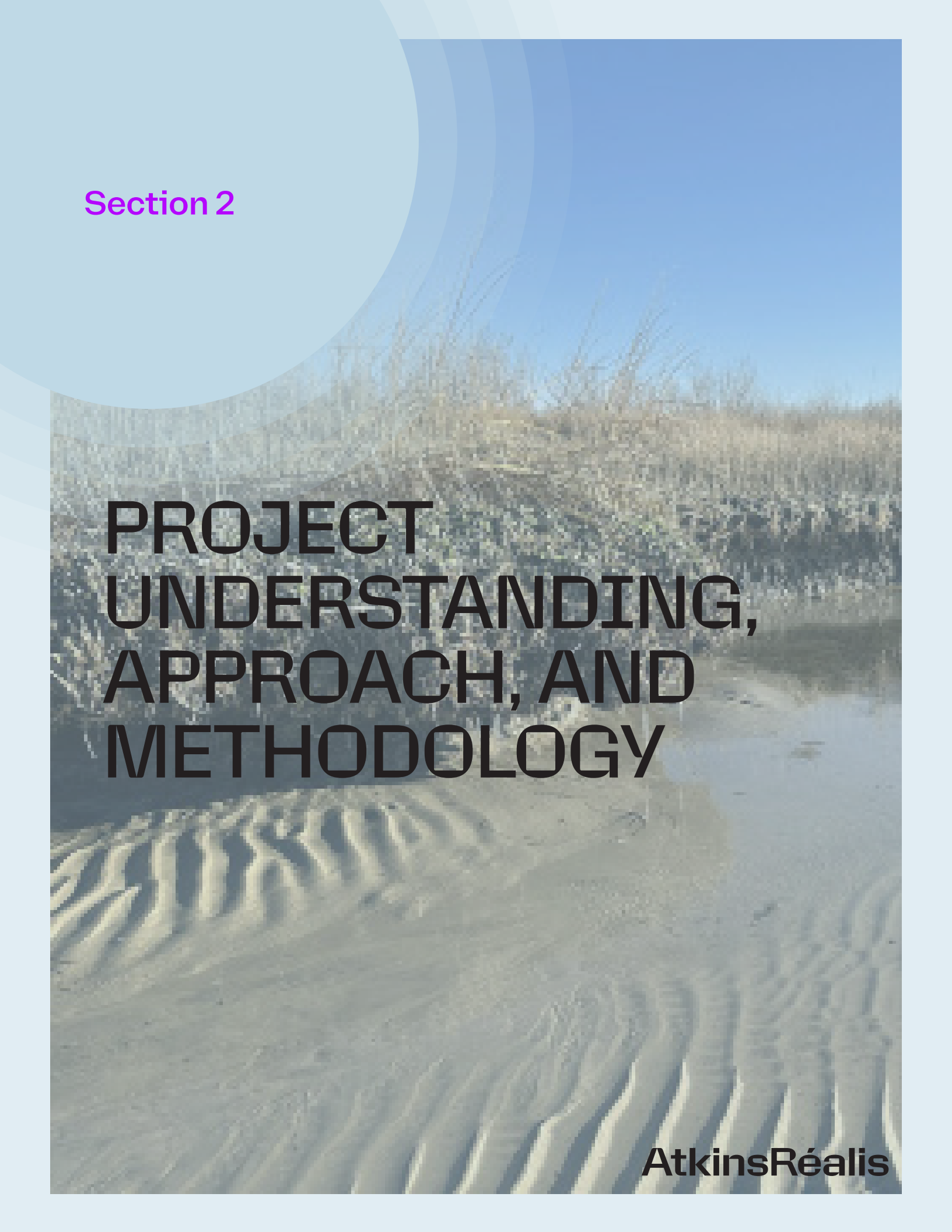
804.815.0272

Evaluation of AtkinsRéalis

We invite you to explore our Why AtkinsRéalis table, which illustrates how our team’s approach meets—and in many cases exceeds—the evaluation criteria outlined in the GRIT Phase I RFP. Our goal is to make your review process as straightforward and transparent as possible, to clearly connect our strengths to the needs of MPPDC and the GRIT Phase I Program Request For Qualifications.

Evaluation Criteria	Description	AtkinsRéalis Team Approach	Benefit to MPPDC
Project Understanding, Approach, & Methodology	• Demonstrated understanding of GRIT Phase I goals, scope, and deliverables • Clarity of technical approach including fieldwork, data collection, modeling, and design formulation • Integration of beneficial use, climate resilience, stakeholder coordination • Example graphics	• Develop a comprehensive existing-conditions baseline, create conceptual and preliminary nature-based shoreline and marsh-resilience designs, prepare a Basis of Design, and complete feasibility and land-conservation suitability assessments. Also, produce draft environmental and permitting documentation, manage coordination and reporting, and (optionally) conduct supplemental field data collection. • Structured coastal engineering and ecological science framework which may or may not integrate advanced numerical modeling, hydrodynamics, sediment transport, LiDAR/bathymetry, MidTRAM ecological surveys, and scenario-based climate analyses	• Full understanding of desired project outcomes • Rigorous science-driven foundation with tailored designs aligned with local conditions and regulatory expectations • Tried and true approaches including successful previous implementation of beneficial use of dredged material and living shorelines projects. • Graphics relay an understanding of site conditions and feasible solutions, and help explain the approach to stakeholders
Innovation & Resilience Integration	• Nature-based, adaptive, and climate-resilient design strategies • Innovation and alignment with regional programs	• Incorporates thin-layer placement, marsh elevation enhancement, oyster reefs, marsh sills, vegetated berms, hybrid NBS designs with innovative tools such as multi-spectral analysis and real-time monitoring concepts	• Cutting-edge resilience strategies that support long-term sustainability • Dovetail into other existing and ongoing solutions

Evaluation Criteria	Description	AtkinsRéalis Team Approach	Benefit to MPPDC
Schedule & Deliverables	- Realistic schedule - Clear review checkpoints - Risk mitigation	- Schedule development considers seasonal variables, early permitting coordination, teams' capacity and availability with float for unforeseen delays 5-step QA/QC process - Risk register development clearly identifies checkpoints and proactively identifies potential schedule and/or delivery risks	- Predictable delivery for timely completion - QC checkpoints throughout process support high quality final products - Proactive planned risk mitigation actions reduce impacts
Qualifications & Experience	Experience and capability on similar projects	- Team includes nationally-recognized experts, award-winning project experience, and local subconsultants providing regional knowledge. - Projects in Virginia, Delaware, New Jersey, Florida and Texas demonstrate experience similar to the scope of this RFP	- Proven provider of successful projects similar in scope - High-quality work with deep regional familiarity - Familiarity with timber, steel, concrete, rock and geosynthetic materials and major manufacturers of pre-cast units
Response Capability	Ability to allocate resources and respond	Project prioritized with dedicated PM, rapid-response field teams, surge capacity, digital collaboration tools	On-time delivery and schedule adherence
References	Quality and relevance	Coastal resilience and related scope references with positive client feedback	Validates reliability and high performance
Other Supporting Data	- Value-added services - Clarity	Smart monitoring, adaptive frameworks, GIS StoryMaps, beneficial use testing	- Enhances decision-making tools - Supports future funding
Local Economic Participation	Use of local firms	- Integration of several Middle Peninsula-and Virginia-based experts - Members of Fight the Flood Middle Peninsula	- Professionals intimately familiar with the Middle Peninsula - Supports regional economy - Builds local capacity



Section 2

PROJECT UNDERSTANDING, APPROACH, AND METHODOLOGY

Section 2: Project Understanding, Approach and Methodology



Doug and Russ recognize the extensive efforts that have been coordinated in support of protecting and restoring the Guinea Marsh Island complex in recent years, and understand the challenges of contending with the persistent effects of SLR, land subsidence, and shoreline erosion. Our vision for this project is to leverage cutting-edge scientific and at-scale restoration efforts while simultaneously addressing the litany of stressors impacting these marsh communities. In direct coordination with existing programs, including the USACE's Engineering With Nature (EWN) program (of which Norfolk District is now a formal participant), AtkinsRéalis, as it has with other projects, will work closely with the MPPDC's Project Team to design and implement a state-of-the-practice program for protecting and restoring the Guinea Marsh Islands, such that it will serve as the gold standard for similar projects in coastal Virginia.



AtkinsRéalis understands that the GRIT Phase I Project is designed to advance resilience planning for tidal wetlands and shorelines within the Guinea Marsh Wildlife Management Area and adjacent Mobjack Bay marsh islands.

The wetlands, islands, and shorelines of Mobjack Bay protect upland infrastructure from flooding and wave impact, and they represent highly valuable habitat. Both of these attributes have economic impacts – from reduced flooding and storm damage to ensuring sustainable fishery economics and recreational opportunities.

The goals of this project include developing comprehensive physical and ecological conditions as a baseline to measure future success, conceptual and preliminary designs for nature-based shoreline stabilization, and feasibility assessments that incorporate climate adaptation and beneficial use of dredged material.

Water-dependent uses often require dredging to maintain navigable water depths. Where dredging is needed for navigation or environmental purposes, the dredged material can often be used beneficially to counter erosion and raise the elevation of the coastal marshes to mitigate sea level rise (SLR). Our approach builds on proven methodologies applied in complex coastal and marsh environments, such as the ongoing **Little River Dredging / Beneficial Use project in Delaware**. When planned strategically, the beneficial use of dredged material can enhance natural processes, improve habitat quality, and extend the functional lifespan of coastal marsh systems.

Our team's approach will be tailored to the regulatory and stakeholder landscape of Virginia's Middle Peninsula, and is grounded in the principles of NOAA and USACE's Engineering With Nature (EWN) initiative, which emphasizes the intentional alignment of engineering practices with natural systems to

deliver multiple performance benefits while supporting traditional project purposes. Consistent with EWN, we prioritize nature-based and hybrid solutions that leverage sediment dynamics, tidal processes, and marsh ecology to increase system resilience while remaining compatible with navigation, habitat management, and other water-dependent uses. Our team brings the necessary coastal engineering and science skills and experience to the planning and implementation phases of this project. We have designed solutions for clients in ocean, bay, and river environments, using the full suite of viable alternatives.

Our team's proposed strategy for completing Phase I reflects the core principles of the Virginia Coastal Resilience Master Plan, including (1) risk informed decision-making, (2) coordination across jurisdictions and disciplines, and (3) the advancement of nature-based and hybrid solutions. The strategy is grounded in the following elements:

- A broad portfolio of coastal projects that includes design and construction of emergency and interim protective measures, as well as evaluation of structural, nonstructural, and nature-based approaches to reducing erosion and flood risk across diverse coastal settings.
- A demonstrated record of developing comprehensive, long-range coastal management plans, e.g. preparation of the State of Delaware's Plan for Bay Beaches and first Strategic Beach Management Plan for the Florida Department of Environmental Protection.
- The collective experience of a multidisciplinary team with expertise in coastal studies, engineering, disaster response and recovery, future risk reduction, and identification of state, federal, and regional funding programs that support coastal resilience planning and implementation.
- Detailed knowledge of coastal conditions and management challenges in Virginia, informed by statewide experience and by lessons learned from national and international efforts to address similar resilience, erosion, and flooding issues.

Early coordination with regulatory agencies, resource managers, and stakeholders is integral to our process to ensure that beneficial use and marsh enhancement strategies are implementable. Stakeholder input helps define constraints and opportunities for beneficial use placements. Agency coordination informs feasibility and regulatory pathways early in concept development.

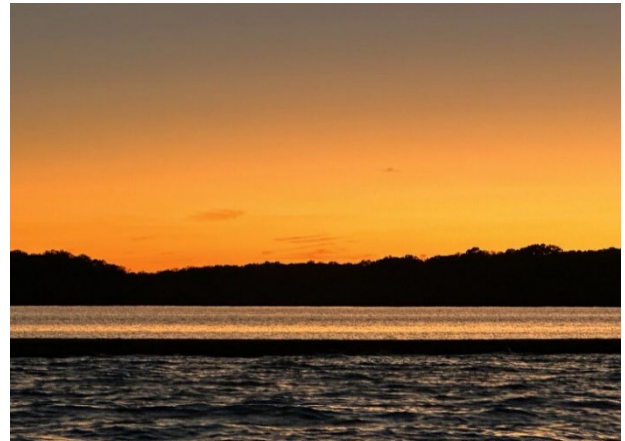


Figure 1: Sunset over Guinea Marsh

Technical Approach

Our technical approach for Phase 1 combines focused field reconnaissance with targeted use of available data and planning level analyses to advance practical, implementable concepts. **As requested in the RFP, conceptual sketches** and drawings of potential long-term solutions have been provided (see [Figures 5, 8, 9, 10, 12, 13 and 15](#)). In some cases, these concepts have been designed and implemented elsewhere while others have been conceptualized for Guinea Marsh.

Efforts will begin with a review and synthesis of existing datasets, including bathymetry, habitat mapping, shoreline condition information, and applicable vulnerability and flood risk assessments. Targeted site visits and field observations will be conducted to verify existing conditions, document geomorphic and ecological features, and refine understanding of site specific constraints and opportunities. At a screening level, sediment sources, transport pathways, and beneficial use opportunities will be evaluated to inform feasible resilience strategies. These findings will be used to develop

and compare concept-level design formulations appropriate for tidal wetlands and marsh island systems, supporting progression from identified risks to prioritized, planning-level alternatives. The overall objective of this approach is to support development of a coordinated, science-based plan that addresses current and future coastal risks while remaining responsive to regional priorities and implementation opportunities. By making a full range of technical and scientific expertise available throughout project development, our approach provides MPPDC with the information and analytical foundation needed to prioritize actions and make well-informed decisions that support both near-term resilience investments and long-term adaptation goals supporting development of adaptive and climate resilient strategic consistent with the Virginia Coastal Resilience Master Plan.

The organization chart in **Section 5** (Staff Qualifications), shows key members of our proposed project team including AtkinsRéalis and our specialized subconsultants. Our team is supported by **Biogenic Solutions Consulting, LLC, Earth Systems Management, LLC, J&R Coastal Marine Services**, and additional subject matter experts who contribute expertise in sediment management, coastal geomorphology, ecological restoration, marine construction, and field implementation. We believe the breadth of technical expertise, depth of local and regional experience, and range of resources provided by this integrated team distinguish our qualifications and position us well to support this effort.

Our proposed approach generally follows the tasks outlined in the RFP. There are two directions that the GRIT Phase I work can take based on the available duration. If the completion date of December 31, 2026 is required, a numerical hydrodynamic model would unlikely yield results in time to inform conclusions of the study. If, however, the extension is granted, then developing a numerical hydrodynamic model could benefit the study. In either case, the AtkinsRéalis team will use the most appropriate tools which can range from equations based on empirical evidence to physics-based numerical models.

Scenario 1: Accelerated Schedule, no numerical model

In the accelerated “no model” scenario, the collection of new field data coupled with empirical analysis and publicly-available information will yield valid conclusions. Since design elevations are critical to the performance of reefs, sills and breakwaters, water level elevations will be collected. As an example, in 2016 an evaluation of the attenuation provided by oyster castle reefs in Delaware Bay, NJ was conducted. The data indicated a nearly 1 ft offset from the predicted tides, thus rendering the reefs far less effective than designed. The reefs were designed to be emergent (above MHW); however, the designer did not take into account the fact that published tidal data are based on the 1983-2001 tidal epoch. This means that sea level adjustment since 1992 (mid-year of the epoch) needed to be added to the crest height of the reef.



Figure 2: CUDEM results for the Guinea Marsh area. Darker colors equal deeper water.

Even without a numerical model, several empirical approaches exist to design living shorelines that will help protect the marshes from erosion. Available data such as LIDAR topography and NOAA’s Continuously Updated Digital Elevation Model (CUDEM) (see [Figure 2](#)) can quickly provide base maps. The NOAA tide gauge at the Yorktown USCG Training Center will provide baseline tide and SLR data. The Corps’ North Atlantic Coastal Comprehensive Study (NACCS) can provide wave and storm surge data at nearby locations (see [Figure 3](#)).

Our team can then supplement the DEM with site-specific hydrographic data. The resulting



Figure 3. NACCS waypoints for the Guinea Marsh area. Each waypoint provides model results for storm event probabilities.

bathymetry can be used to generate the grid for a numerical model, if warranted.

Wave and storm surge data can help define the parameters to be used in designing the various shoreline protection alternatives. Design parameters include crest elevation, gap width between structures, and distance offshore.

Scenario 2: Time extension, with numerical hydrodynamic model

If the time extension is granted, then numerical modeling becomes a possibility. In addition to the field data collection described above, a Delft3D model can be developed. Data collected would be used to help calibrate the model and publicly-available data sets could verify the model. These two steps, calibration and verification, are vital to giving confidence that the model is able to accurately predict outcomes. A numerical model can provide insight during the design phase pertaining to effects on the wave climate and resulting sediment scour and accretion and marsh edge loss.

Prior to embarking on a numerical model, defining the questions to be answered is paramount to the choice of model, and how the model is to be used. The determination of which model is most appropriate will be determined in collaboration with the project team including- MPPDC. For the sake of this proposal, Delft3D will be the default model.

Engineering Analyses and Coastal Design Tools

AtkinsRéalis will apply a structured, coastal engineering approach that integrates site-specific process understanding with targeted field observations, existing datasets, and empirical analysis to inform concept development and project formulation. A clear understanding of the regional and local coastal and estuarine processes influencing the project area is fundamental to advancing resilient and implementable alternatives. Key processes evaluated during Phase I include tides and circulation, waves, sediment transport, and shoreline and marsh response, all of which influence the feasibility and performance of nature-based, hybrid, and structural solutions.

Where appropriate to support planning-level decisions, the team will apply state-of-the-practice coastal engineering tools, including hydrodynamic and sediment transport numerical models where feasible. These tools may be used to evaluate tidal circulation patterns, wave transformation, and sediment pathways under-existing conditions and representative future scenarios. Coupled hydrodynamic and sediment transport analyses can support screening-level assessment of sediment sources, sinks, and transport mechanisms affecting marsh edges, shorelines, shoals, and navigation features. Results will inform conceptual evaluation of beneficial use opportunities, material placement strategies, and shoreline and marsh stabilization approaches that work with prevailing coastal processes.

Our team's approach recognizes that erosion and shoaling are inherently sediment-driven processes governed by wave energy, currents, and sediment availability. Different coastal and estuarine settings exhibit distinct response mechanisms; for example, marsh edge erosion differs fundamentally from beach erosion, and current-driven bedload transport differs from alongshore wave-driven transport.

Understanding these physical processes and working with them—rather than against them—is central to effective and sustainable coastal engineering design.

This process-based approach has been successfully implemented by our team on prior projects, including the **Sargent Beach**, Texas stabilization effort (see [Figure 4](#)), where both alongshore and cross-shore sediment transport were modeled to identify an optimal intervention strategy. In that high energy environment, numerical modeling informed the design and placement of rock breakwaters and a terminal groin to reduce erosion while minimizing shoaling at Mitchell's Cut and protecting the adjacent Intracoastal Waterway from breaching. This project includes the beneficial use of sand

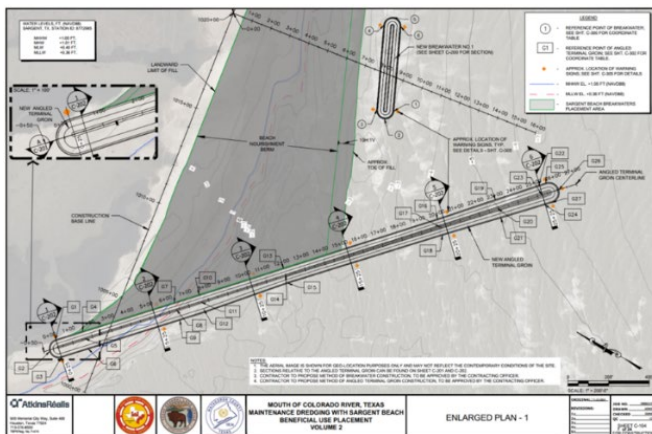


Figure 4: In this high wave energy location along the Gulf of Mexico, an angled groin and breakwater system was designed to restore Sargent Beach, Texas. Construction began in early 2026. The structures are intended to reduce erosion, which is currently averaging 32 ft/year.

dredged from the mouth of the Colorado River. Similar analytical rigor and application of coastal engineering tools will be applied to this project to provide solutions that are technically sound, constructible, and aligned with long-term coastal dynamics. Our team of hydrodynamic modelers can evaluate each project site with the focus of optimizing design properties. Hydrodynamic models can simulate tidal flows and water quality under existing and proposed conditions, ensuring that conceptual alternatives optimize circulation and habitat resilience. Scenario-based assessments of SLR and storm surge impacts will lead to designs that are adaptive and climate-resilient.

The amount of wave energy at a site will dictate what types of intervention may be required. When designing coastal interventions, the engineer needs to understand and work with these forces.

Since not all materials or designs work in all cases, the team will develop a range of options and attempt to classify areas of the marsh based on their features and orientation to prevailing wave energy. Consistent with GRIT Phase 1 objectives, the team will develop and compare a range of conceptual alternatives tailored to the distinct shorelines and marsh typologies within the project area. These alternatives will be qualitatively screened and comparatively evaluated based on anticipated performance, relative cost considerations, and alignment with resilience objectives, providing a clear technical foundation for prioritization and progression toward future design, funding, and implementation.

Field Data Collection and Site Investigations

AtkinsRéalis will conduct a focused program of field data collection and site investigations to support Phase I planning objectives, validate desktop analyses, feed into numerical models where warranted, and address key data needs related to shoreline and tidal wetland resilience. Field activities are intended to provide sufficient resolution and coverage to inform engineering and ecological evaluations, support development of planning-level concepts, and improve confidence in the feasibility of proposed resilience strategies.

Sediment probing and field reconnaissance will be conducted, as appropriate, to characterize substrate conditions and identify areas suitable for sediment placement, marsh enhancement, or shoreline stabilization.

Biological field investigations will be conducted by the firm's ecological sciences team using the Commonwealth of Virginia's established Mid-Atlantic Tidal Wetland Rapid Assessment Method (MidTRAM). This standardized field protocol will be applied to assess wetland condition, habitat quality, and site stressors in a consistent and defensible manner. AtkinsRéalis recently completed a large-scale MidTRAM assessment for the **Delaware Little River Maintenance Dredging and Beneficial Use Project**, (see in [Figure 5](#)) and project staff will

apply this proven field methodology to efficiently support the proposed effort.



Figure 5: Little River MidTRAM

All field-collected data will be systematically documented, quality-checked, and managed throughout the project. Data will be stored and processed in GIS-compatible formats to support spatial analyses, facilitate integration with desktop evaluations, and inform conservation and project planning efforts. This integrated approach ensures that field observations directly support Phase I deliverables including engineering analyses, ecological assessments, and final project recommendations.

Stakeholder Engagement and Regulatory Coordination

AtkinsRéalis recognizes that stakeholder input and the regulatory compliance are essential to project success. We will support engagement sessions with MPPDC, the State Historic Preservation Office (SHPO), Virginia Department of Wildlife Resources (DWR), local governments, Tribal representatives, and community stakeholders to assure that design alternatives reflect ecological priorities and cultural values.

Our staff have experience with Section 106 consultation and response to agencies if historical or archeological issues arise. For example, a vertebra was found during excavation at the Parallel Thimble Shoal Tunnel

project. Mr. Gaffney worked with the Chesapeake Bay Bridge Tunnel District and SHPO to determine that the bone was, in fact, a pig vertebra, and of no historical importance.

AtkinsRéalis' local Virginia partners have extensive experience with public outreach and stakeholder engagement within Virginia's Middle Peninsula and Eastern Shore communities, including the counties of Gloucester, Mathews, Middlesex, Accomack and Northampton. Specifically, Dr. Burke has worked closely with Consociate Media, RISE, Growth Opportunities Virginia (GOVA), Virginia Sea Grant (VSG), and the Middle Peninsula Planning District Commission in support of shoreline protection projects in the counties of Gloucester (Hog Island and Whittaker Creek) and Middlesex (Urbanna Creek). He has also attended and provided expert testimony at Gloucester and Mathews Wetlands Board meetings surrounding shoreline protection proposals and technologies newer to Virginia, has drafted letters of explanation and support describing the viability and local benefits of said projects/technologies, and, most recently, upon the request by leaders of the town of Mathews (i.e. Board of Supervisors), he helped guide them as they explored local dredging and economic development plans.

And, after more than a decade of engagement with communities on Virginia's Eastern Shore, the Accomack-Northampton Planning District Commission, and the US Army Corps of Engineers, Dr. Burke and his colleagues have partnered with the Virginia Ecological Solutions Foundation to Help Protect Tangier Island via a dedicated fundraising campaign to support shoreline protection projects at the western and eastern entrances of Tangier Island. The Tangier campaign, the many living shoreline projects, and extensive, dedicated efforts in support of Chesapeake Bay Native Oyster Restoration – spanning more than 20 years – have been highlighted and showcased for 4th and 7th graders, as well as the public, nearly every year at the Urbanna Oyster Festival, where the Middle Peninsula Planning District Commission's Fight-The-Flood (FTF) Program is on full display, boasting participation by half a dozen FTF companies. Collectively, these outreach efforts have

engaged tens of thousands of Virginia residents, as well as many out-of-state visitors. Our team simply thrives in engagement with the public and local communities – they are one of the main reasons we chose to form our businesses, and their coastal resilience needs directly inform how we continue to strategically grow.

One of the other festival participants has been the Coastal Virginia Adaptation & Resilience Consortium (CoVA A&R). Since its creation by the Institute for Coastal Adaptation & Resilience (ICAR) at Old Dominion University, “to help business communities across Hampton Roads, the Middle Peninsula, and the Northern Neck prepare, adapt, and thrive in a changing environment,” Dr. Burke and Mr. Betit have been active members of this organization. And, in the last few months, Dr. Burke was nominated and elected to serve as an Industry Representative on the Coastal Resilience and Adaptation Economy Consortium Steering Committee, where he will “work with university, business, industry, and government leaders to promote practical solutions that mitigate the risks of coastal flooding, connect businesses and organizations with funding, and grow the resilience economy.”

In summary, outreach, education, and stakeholder engagement is a cornerstone of AtkinsRéalis and its local Virginia partners. Whether we are presenting at VSG-hosted Legislative Receptions in Richmond, participating in conferences such as the GOVA Summit or the Virginia Coastal Resilience Collaborative, or simply attending Chesapeake Bay Foundation-hosted events like “Virginia Tribes and the Path to Climate Resilience,” our team actively promotes the good work being done by participants in the coastal resilience sector and seeks continuous input from those stakeholders that we are serving, as their perspectives and perceptions on what needs to be addressed in their region are the true drivers behind much of what we ultimately do to sustainably support these communities and Virginia’s natural, coastal resources.

Early coordination with permitting agencies, including U.S. Army Corps of Engineers (USACE), Virginia Marine Resources

Commission (VMRC), Virginia Department of Environmental Quality (DEQ), National Marine Fisheries Service (NMFS), and U.S. Fish and Wildlife Service (USFWS), will streamline approvals and address potential impacts to listed species and critical habitats. AtkinsRéalis’ team of communications professionals is well versed in public outreach (see [Figure 6](#)) and can help build or further enhance relationships with key audiences and implement engagement strategies to reach broader audiences. Our team’s strategic outreach efforts have proven successful for statewide initiatives, regional projects, and hyper-localized studies. We have also created and hosted virtual rooms to support public outreach, and have observed significantly higher stakeholder engagement when virtual options are provided, enhancing accessibility and the effectiveness of public information delivery.



Figure 6: AtkinsRéalis actively engaging with stakeholders at a public meeting

Integration of Climate Resilience and Beneficial Use

Consistent with GRIT objectives, our approach will incorporate beneficial use of dredged material where possible. This could include thin-layer placement and marsh elevation enhancement or filling geotextile tubes as a structural element of a project similar to our **Whittaker Creek** project. Reusing material reduces disposal costs and supports habitat migration under SLR scenarios.

Conceptual designs will include hybrid features such as marsh sills, oyster reefs, and vegetated berms to provide natural storm surge attenuation while maintaining ecological connectivity. Each alternative will be screened for constructability, ecological uplift, sediment compatibility, long-term resilience and cost, and then stress tested in models under SLR and storm scenarios. Our **Philippe Park** project (see [Figure 7](#)) is an example of a living shoreline project having multiple segments with variations in the approach.

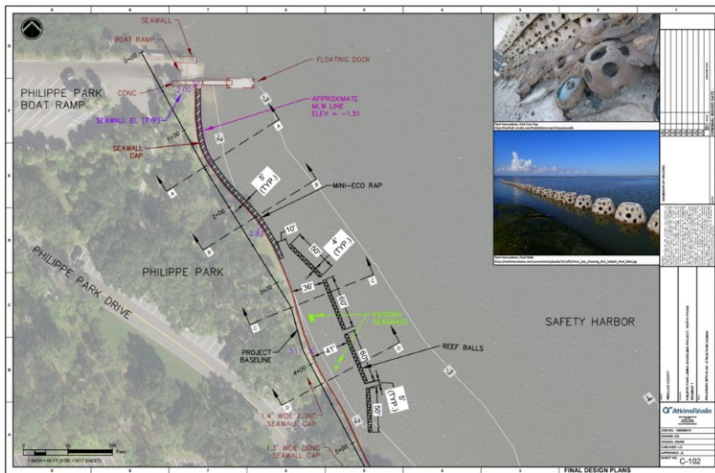


Figure 7: The AtkinsRéalis design at Philippe Park included multiple segments using a variety of materials such as shell bags and reef balls to reduce erosion and increase habitat (2024).

Some concepts are bolder than others. The outer islands that protect the Guinea Marshes (Site E3 in [Figure 8](#) and [Figure 9](#)) are being lost. This can be verified by comparing aerial imagery from 1994 to present. Similar to Hart-Miller Island in Maryland, an island can be created through beneficially using dredged material from local dredging projects and eventually become a restored marsh island providing ecological uplift and sheltering from erosive waves. In this configuration, the new island could accept approximately 450,000 cubic yards of dredged material and would provide 46 acres of coastal marsh. Other configurations could be designed to enhance a particular species or habitats such as SAV.



Figure 8: Conceptual island restoration

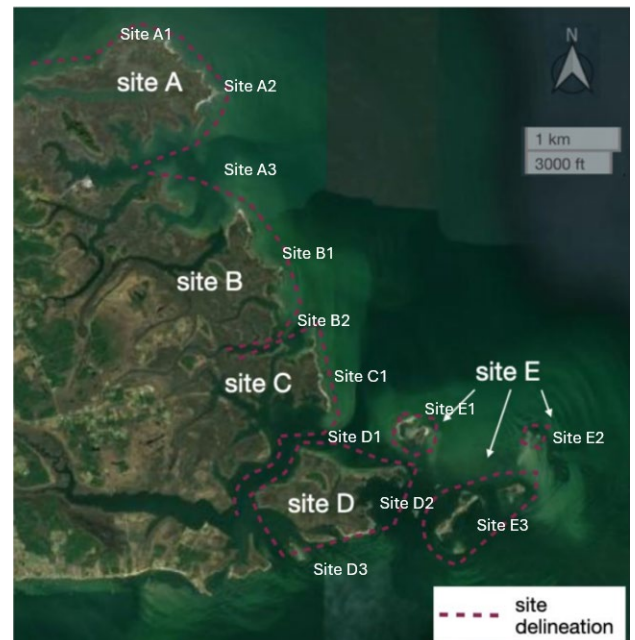


Figure 9: Site delineation based on orientation to incident wave energy, adapted from Natrx Slides within NFWF Grant Application 84028 "Finalizing a Design for Transformative Marsh Habitat Restoration and Protection in Mobjack Bay (VA)"

Feasibility

The feasibility of any design will seek to integrate engineering performance metrics, ecological uplift potential, and cost/benefit considerations. For example, coir logs and vegetation alone only work in low-energy environments; therefore while relatively inexpensive, this option would not be a resilient, long-term design if used in the wrong location. Coir logs are densely packed coconut husk fiber within a coir netting. They were successfully employed with existing rock to elevate and re-establish the riverside edge of a park along the Hudson River (see [Figure 10 and 11](#)).

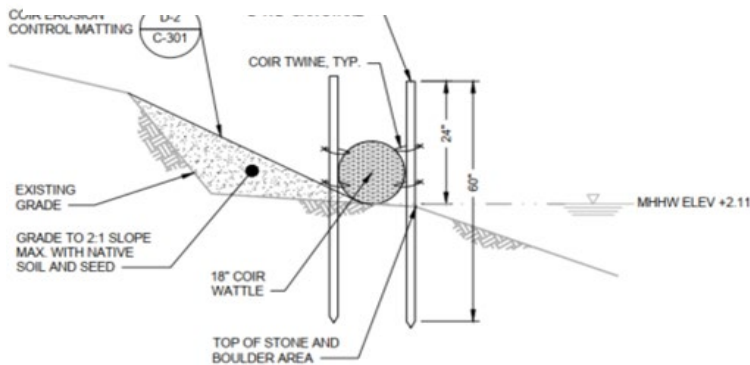


Figure 10: Coir erosion control Log



Figure 11: In a design by Doug Gaffney, coir logs were used to restore the Hudson River shoreline of a waterfront park affected by SLR and winter storms. Rapid response was facilitated by an understanding of permit rules (2023).

Another concept that could provide protection to a larger marsh area and creek system is the use of wave breaks as (see in [Figure 12](#)). The marshes within area B2 are eroding which will eventually lead to open water and a loss of

protection to upland infrastructure such as boat ramps and other water-dependent uses. Where viable, this concept may be more cost effective than treating the entire shoreline with linear nearshore sills.



Figure 12: Conceptual arrangement of wave breaks designed to reduce wave energy within Little Monday Creek. Gaps in the wave breaks would allow navigation to pass freely.

During the GRIT Phase 1 project, our team will develop the Resilience Feasibility Assessment (Task 5) to evaluate the need for intervention, a variety of options, the comparative costs and permissibility of each alternative. The assessment report will present clear rationale for preferred alternatives, implementation phasing (near-term, midterm, and long-term adaptation pathways) and adaptive management triggers tied to monitoring results. Feasibility assessments will provide MPPDC with clear, actionable recommendations for implementation.

Quality Assurance



Figure 13: Quality Assurance Plan

Quality work products are more likely to be achieved with sound management practices. AtkinsRéalis has developed a formal Quality Assurance Plan (QAP) that employs our 5-step review process (see [Figure 13](#)), which begins at project initiation and continues through all deliverables. Each design phase will include internal peer reviews and interdisciplinary checkpoints to verify technical accuracy and regulatory compliance. Our focus is on the quality of the project and deliverables. By specific corporate policy, every project deliverable must undergo quality review to ensure that the product was prepared in accordance with accepted standards of professional practice and in accordance with the requirements of our client contract. This quality management system is ISO 9001 compliant.

A Project Quality Manager (PQM) is assigned to every project to implement uniform QA/QC procedures across all work deliverables. **Victoria Kincell, PE** is the PQM identified for this project. Victoria has a background in a wide variety of engineering specialties, including coastal, and is Waterfront Edge Design Guidelines (WEDG) certified. The PQM produces the project QAP, regularly communicates that plan to project staff, and audits the project to verify QAP implementation. QC reviews must be conducted by qualified staff that are independent of the project. All milestone deliverables go through our 5-step review process. This quality process is required of all AtkinsRéalis staff and our subconsultants. Subconsultants must

submit their own QA/QC procedures for approval or agree to adhere to the AtkinsRéalis QAP.

Proposed Scope of Services

The following is a proposed outline of the scope of services that would be provided based on our current understanding of the work described in the RFP. These services are subject to modifications through opportunities to coordinate with MPPDC.

Task 1 – Project Initiation, Work Plan, and Scheduling

1.1. Kickoff & Mobilization

- The AtkinsRéalis team will conduct a project kickoff meeting with the MPPDC.
- At this meeting, we will confirm objectives, success criteria, schedule(s), roles, and communication protocols.
- The Project Principal, Project Manager (PM) and Deputy PM will establish a **Project Execution Plan (PEP)**, including staffing plan, data standards, and risk register.

1.2. Detailed Work Plan & Schedule

- In consultation with team members, the PM will develop a milestone-based schedule with **formal review checkpoints** mirroring GRIT requirements.
- Define deliverables and critical path.

Task 2 – Comprehensive Existing Conditions Report (ECR)

2.1. Desktop Assessment

- The team will compile and synthesize legacy datasets: shoreline studies, bathymetry (e.g. NOAA CUDEM), submerged aquatic vegetation (SAV) maps, tidal marsh inventories, aerials (historical and current), hydrologic/climate models (NACCS wave and surge data, SLR), soils/geotechnical summaries, and regulatory baselines.
- Map constraints (species/habitat, cultural, ownership, easements, access).
- Conduct a gap analysis.

2.2. Field Data Coordination & Gap-Filling

- Coordinate LiDAR, single/dual-frequency bathymetric surveys, sediment probing/cores, and ground-truthing.
- Biological/habitat and MidTram surveys (SAV, marsh types, oyster/shell, dune, avian use); deploy sondes or short-term loggers for **water levels, salinity, DO, turbidity** as needed to validate models and establish baselines for comparison with future success criteria and project monitoring. Turbidity is an important parameter for SAV. Water level monitoring will likely be necessary to establish site-specific tidal elevations, e.g. Mean Low Water (MLW). Structure height is a critical engineering factor due to the effect on wave attenuation. Most of the publicly available tidal water level elevations are based on the 1983-2001 epoch, and therefore tend to be low when used for design.
- Low cost, shallow water wave gauges can be deployed on either side of existing reefs at Hog Island to establish coefficient of transmissivity and attenuation. Field data collection may be valuable for assessing wave-induced scour and foundation settlement.
- Accurate data collection is essential for effective project planning and execution. At AtkinsRéalis, we utilize advanced tools such as sub-meter accurate handheld GPS units, LiDAR-equipped drones, and other

can be used and checked in real-time to improve accuracy and efficiency.

- Where rugged terrain with heavy underbrush is difficult to access, we will rely heavily on remote sensing. This may be in the form of LiDAR, drone data collection, or satellite data sets. Use of publicly-available data will always be our priority to save both schedule and cost. However, when needed, and appropriate, targeted site-specific field investigations will be utilized.

2.3. Data Processing & GIS

- Produce Digital Elevation Models (DEM), processed bathymetric surfaces, habitat maps, and metadata per GRIT standards; populate centralized geodatabase.

2.4. Existing Conditions Report (ECR) Authoring & Reviews

- Draft report, review & final report.

Task 3 – Conceptual Design Development

3.1. Alternatives Analysis

- Develop up to three conceptual alternatives for marsh-edge stabilization, dune/beach restoration, hybrid Nature Based Solutions (NBS) (e.g., marsh-sills, oyster reefs, vegetated berms, bioengineered low-crests). An example

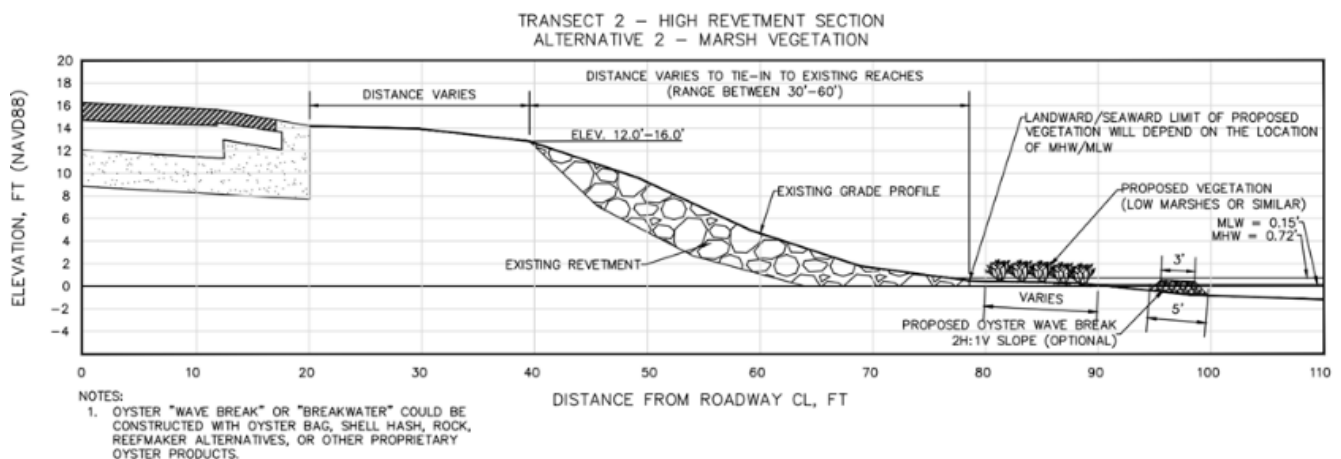


Figure 14: Oyster wave break alternative at Choctaw Beach, FL along the Choctawhatchee Bay

specialized equipment and sensors to collect high-resolution data for design, mapping, and analysis. Coupled with state-of-the-art platforms from Esri and Bentley, our approach to data collection ensures the data

hybrid Nature-based solution can be seen in our Choctaw Beach Alternatives Analysis and Conceptual Design (see Figure 14). In this alternative, an oyster wave break is proposed with low marsh vegetation. A Vulnerability Assessment was conducted for the Florida DOT

to assess the most vulnerable locations based on storm return period.

Another example is the Intertidal Living Shoreline Reefs at Naval Weapons Station Yorktown (NWSY) R3 Pier which raised the crest elevation by using the innovative Castle Topper (see [Figure 15](#)). The use of precast concrete shapes to form stackable sills and reefs has many benefits including ease of installation. In some cases, however, a large footprint is required to achieve the target design elevation.



Figure 15: Living shoreline reef with Castle Toppers constructed at the NWSY Summer 2024 by Getting It Done Co. A tombolo of sand can be seen forming in the lee of the structure after 1 year.

Concrete units can be designed for stability and height while providing protection and a substrate for oysters to attach. **Biogenic Solutions is developing the capability to 3-D print large proprietary blocks.**

3.2. Engineering Analyses

- Predict the effectiveness of pre-cast concrete units based on literature review, field data and manufacturer's test data.
- If warranted, hydrodynamic modeling for tidal exchange, residence times, and circulation can be implemented. The purpose for this type of modeling would be to improve the water quality in an impaired waterbody.
- The hydrodynamic model can be used to model the transformation of waves interacting with structures such as reefs. This can help fine-tune gap width and distance offshore to optimize the sediment and shoreline response.
- Assess short-term and long-term foundation stability and stability of the concrete units.

- Develop concept-level OPCC (opinions of probable construction cost) and anticipated Operations and Maintenance costs (O&M).

3.3. Design Review Workshop

- Facilitate an interactive design review workshop with team and stakeholders; document feedback and refinements.

Task 4 – Basis of Design Report (BOD)

Establish design criteria, assumptions, performance targets (hydraulic, geomorphic, ecological uplift), phasing, and constructability constraints. Identify tidal datums to be used in the designs, anticipated SLR, design wave heights for various locations within the Guinea Marsh study area, extreme water levels (surge) by probability of occurrence, salinity and geotechnical assumptions.

4.1. Technical Appendices

- Modeling results and calibration summaries; design parameters and preliminary sizing; beneficial use placement envelopes; monitoring concepts.
- Resilience co-benefits (materials choices, hybridized designs).

4.2. Cost & Phasing

- Refined OPCC for preferred alternatives, staging/sequence, environmental windows, and procurement strategy
- Participate in a BOD review meeting with the full project team

Task 5 – Resilience Feasibility Assessment

5.1. Alternatives Screening

- Evaluate **thin-layer placement, beneficial reuse**, elevation enhancement, marsh migration corridors, dune/beach systems, and hybrid structures under **SLR scenarios and storm surge**.
- Feasibility across technical, environmental, and economic dimensions.

5.2. Scenario and Sensitivity

- Assess performance under low/med/high SLR (e.g., NOAA intermediate) and representative storm conditions; sediment sourcing logistics; permitting risks.

5.3. Recommendations

- Identify “no regrets” early actions; phasing pathways; contingencies; monitoring triggers for **adaptive management**.

Task 6 – Land Conservation Suitability Assessment

6.1. GIS-Based Screening

- Evaluate parcels/corridors for **future marsh migration**: ownership, elevation bands, projected inundation, habitat value, connectivity, and management feasibility.

6.2. Prioritization & Mapping

- Produce ranking tables; maps; parcel dossiers; metadata packages; review session with project team.
- Hydrodrone navigation in support of Simultaneous Localization and Mapping (SLAM), using technologies such as Point 3D’s FARO Orbis mobile mapping solutions; dual-real time correction GPS will be utilized to groundtruth all ground survey GPS data collected.

6.3. Conservation Pathways

- Outline potential easements, acquisitions, and incentive mechanisms; integration with regional programs.

Task 7 – Environmental & Regulatory

7.1. Regulatory Strategy & Pre-Application Coordination

- Early coordination with **USACE, VMRC, DEQ, NMFS, USFWS, DWR**, and relevant localities; identify listed species considerations (e.g., Atlantic sturgeon, migratory birds), Essential Fish Habitat (EFH)/SAV issues, sovereign submerged lands, and policies.

7.2. Draft Environmental Review Summary

- Impact analysis (physical/biological/water quality),

avoidance/minimization, mitigation framework (e.g., SAV offsets, marsh creation credits), compliance matrix.

7.3. Draft Joint Permit Application (JPA)

- Prepare draft JPA package (narrative, plans, impact tables, alternatives analysis, monitoring plans).
- If beneficial use of dredged material is envisioned, a Dredged Material Management Plan (DMMP) may be warranted. This would facilitate future individual dredging permits.

Task 8 – Optional Field Services (As Needed)

8.1. Survey & Monitoring

- Execute LiDAR, bathymetry, sediment sampling, and verification surveys to close data gaps identified in Task 2.

8.2. Biological & Water Quality

- Implement focused biological surveys (SAV delineation, marsh condition), deploy short-duration sondes for validation, and conduct turbidity baseline/threshold planning.

8.3. Cultural Resource Assessment

- Perform Cultural Resource Assessment Survey and reporting consistent with agency guidance (optional scope).

8.4. Wave and Water Level Data Collection

- Obtain wave data at Hog Island to assess performance of the recently installed sills. Obtain wave data to confirm design wave parameters at specific sites not well described by existing data. Obtain water level data to confirm tidal datums and degree of SLR.

8.5. Geotechnical Assessment

- Obtain surface grab samples and/or shallow cores to evaluate the sediment grain size, erodibility and potential foundation settlement in the presence of structures.

Section 3

INNOVATION AND RESILIENCY INTEGRATION

Section 3: Innovation and Resilience Integration

AtkinsRéalis will deliver a comprehensive resilience strategy that integrates Nature-based Solutions (NBS) with regional resilience and dredging needs to meet the objectives of the GRIT Phase I Project. Our approach combines advanced engineering, ecological restoration, and stakeholder collaboration to advance concepts that support long-term sustainability and climate adaptability for the Guinea Marsh Wildlife Management Area and adjacent Mobjack Bay marsh islands.

Beneficial Use as a Core Resource Strategy

Dredging is often needed to maintain navigability of a waterway for local anglers, waterfront businesses and recreational boaters. Dredging produces material that can then be considered a resource for marsh restoration, or beach nourishment. The essential component for a successful program is marrying the resource with the beneficial use (BU) placement site. Three key elements are required to make a project happen (see Figure 16) are:

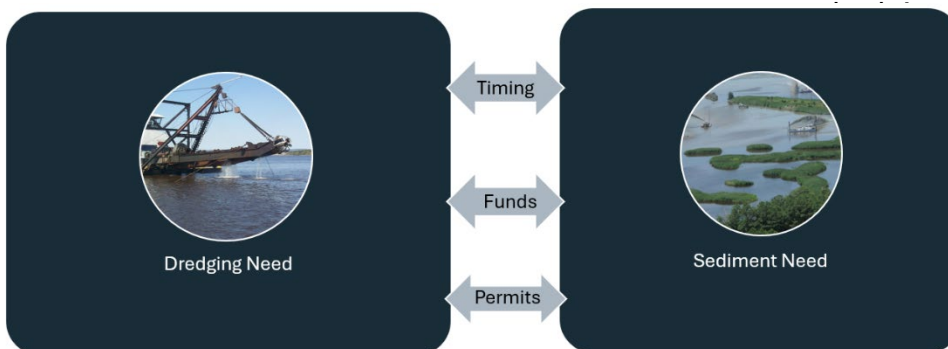


Figure 16: The three key elements to a successful Beneficial Use Program

1. Scheduling Alignment. Since double-handling of dredged material (DM) often adds cost, the **timing** of when the waterway needs to be dredged has to coincide with the availability of the beneficial use site.

2. Funding Alignment. Disposing of DM is often the cheapest option, so availability of additional **funds** may help make the project a reality.

3. Readiness. Beneficial use sites need to have **permits** be in place (or nearly in place), with a design, and the dredged material has to have been tested to assure compatibility.

To achieve economies of scale, the team will evaluate programmatic placement concepts, such as strategically-designed placement cells or reconfigured islands that accept clean dredged material and deliver dual benefits: ecosystem uplift and wave energy attenuation for marsh and upland protection. Near-term, repeatable thin-layer placement and elevation enhancement concepts can progress in tandem with longer-horizon options that build capacity for sustainable sediment reuse.

Dredging of shallow-draft channels in the Middle Peninsula have historically been conducted by the U.S. Army Corps of Engineers (USACE). Due to funding reductions in recent

projects have been delayed resulting in hazardous, shoaled conditions, reduced economic activity, shoreline property values, and real estate taxes. Clean sand dredged from channels can be used to restore beaches and dunes in certain areas. Muddy, highly-organic dredged material can be used to elevate marsh platforms to compensate for Sea Level

Rise (SLR). If these beneficial use projects could be permitted and “shovel-ready,” then some of the necessary navigation channels could benefit from the cost savings.

As described earlier, one way to increase the economy of scale of beneficial use would be to develop a dredge disposal island (similar to Hart Miller Island in Maryland) that could accept a finite amount of DM, and be designed to accomplish two goals:

- ✓ Ecosystem enhancement, and
- ✓ Act as a wave barrier to protect existing marsh and uplands.

Some of the islands east of the Middle Peninsula Mainland have experienced area loss over the years due to chronic erosion, storms and SLR. One or more of these islands could be reconfigured to accept clean DM within the context of a designed habitat. This could be a long-term goal while repeatable, individual projects and placement concepts can provide near-term nature-based and climate-resilient solutions.

Nature-Based and Hybrid Solutions

The AtkinsRéalis team will prioritize nature-based interventions that restore and enhance tidal wetlands while reducing shoreline erosion. Conceptual designs will incorporate living shorelines featuring oyster reefs, marsh vegetation, and submerged aquatic habitats to stabilize edges and improve ecological connectivity. Beneficial use of dredged material will be integrated through thin-layer placement and elevation enhancement to support marsh resilience under SLR scenarios. These strategies will be evaluated for constructability, ecological performance, and cost-effectiveness, ensuring alignment with NFWF's National Coastal Resilience Fund objectives.

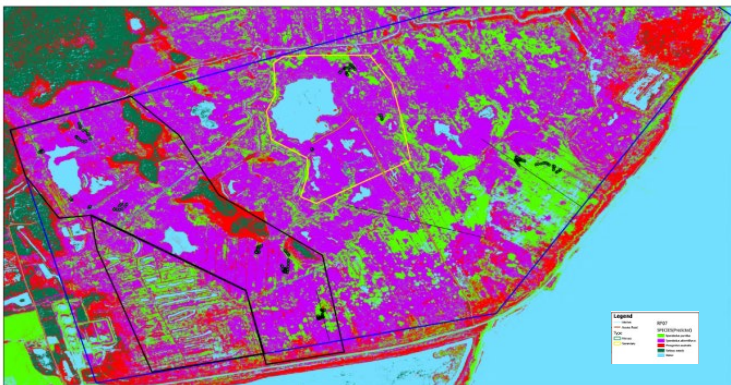


Figure 17: Species identification via remote sensing

Climate-Resilient and Adaptive Design

Our design methodology will embed adaptive features informed by climate projections. AtkinsRéalis will apply scenario-based analysis to assess performance under varying SLR and storm surge conditions, enabling phased implementation and future adaptability. Structural components will be modular and scalable, allowing incremental upgrades as environmental conditions evolve. Material selection will emphasize durability, low-carbon alternatives, and compatibility with sensitive coastal ecosystems, reducing lifecycle impacts while maintaining resilience.

Integration with Regional Programs

AtkinsRéalis will coordinate closely with Virginia's Resilient Coastline Program, regional dredging initiatives, and local conservation strategies to optimize resource use and regulatory compliance. By synchronizing sediment reuse opportunities with dredging schedules, we will reduce costs and accelerate implementation. Our team's experience in multi-jurisdictional projects promotes seamless integration with state and local resilience frameworks, while fostering partnerships that enhance permitting efficiency and leverage co-funding opportunities.

Innovation and Monitoring

AtkinsRéalis applies innovation throughout every phase of project delivery, from planning and design to implementation and closeout. We don't just adapt to challenges; we anticipate them and engineer solutions that reduce costs, improve efficiency, and enhance ecological and community outcomes. Our teams regularly develop creative approaches through value engineering and alternatives analyses, identifying opportunities to streamline permitting, reduce ecological impacts, and maximize ecological benefits.

Innovation will be central to our approach as we continue to identify areas within the marsh that require intervention. For example, during the Delaware Department of Natural Resources and Environmental Control (DNREC) Little River Maintenance Project, we were able to utilize multi-spectral imagery

integrated with topographic data to model vegetation species distribution across a 1,000-acre site. AtkinsRéalis ecologists utilized their conducted MidTRAM field assessments to ground-truth model results and establish monitoring locations. This innovative approach enabled predictive analysis of marsh type establishment and invasive species risk, informing sustainable design decisions that will result in creation of high marsh nesting habitat for the salt marsh sparrow. By correlating vegetation health with elevations and tide water level data, the team delivered a scalable, data-driven solution that enhances ecological resilience and can be applied to future restoration projects.

Much like what was performed on the Little River project, AtkinsRéalis will deploy innovative solution to the GRIT project such as smart monitoring systems, including real-time sensors for water levels, sediment transport, and habitat health, to support adaptive management and performance tracking. Predictive modeling tools will guide design refinements and resilience optimization under future climate scenarios. GIS-based analytics will inform land conservation suitability assessments, identifying priority parcels for marsh migration corridors and long-term habitat protection.

Innovation will be central to our approach as we continue to achieve on project such as the DNREC Little River Maintenance Project where we were able to utilize multi-spectral imagery integrated with topographic data to model vegetation species distribution across a 1,000-acre site. AtkinsRéalis ecologists utilized their conducted MidTRAM field assessments to ground-truth model results and establish monitoring locations. This innovative approach enabled predictive analysis of marsh type establishment and invasive species risk, informing sustainable design decisions that will result in creation of high marsh nesting habitat for the salt marsh sparrow. By correlating vegetation health with elevations and tide water level data, the team delivered a scalable,

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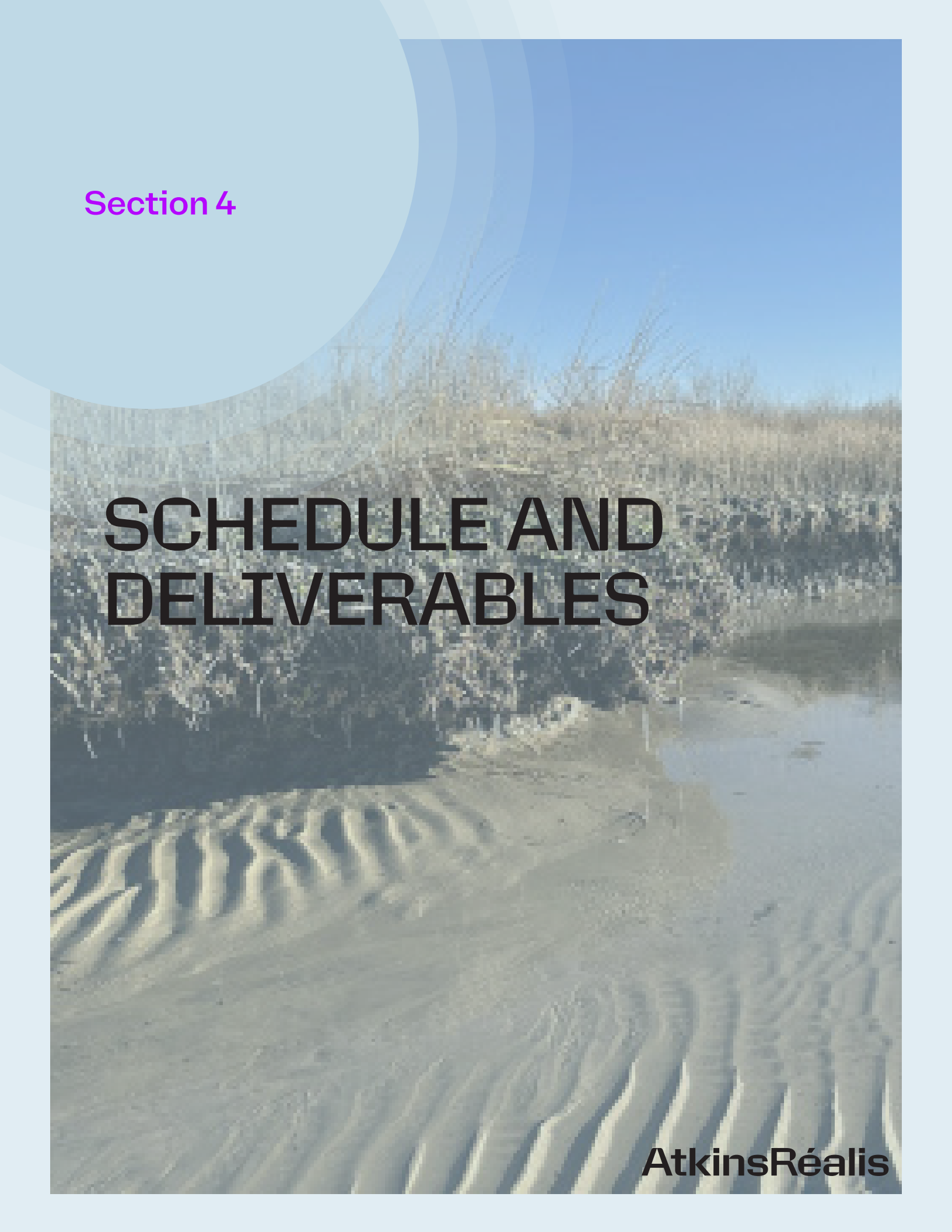
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Community Engagement and Co-Benefits

Recognizing the social dimension of resilience, AtkinsRéalis will integrate community co-benefits into project design (see [Figure 18](#)). Features such as educational signage, recreational access, and workforce development opportunities will strengthen public engagement and stewardship. Through collaboration with project partners, we strive to reflect stakeholder priorities and cultural values, including Tribal perspectives. This inclusive approach will enhance project visibility, foster local economic participation, and contribute to a resilient Middle Peninsula coastal economy.



Figure 18: Community Engagement



Section 4

SCHEDULE AND DELIVERABLES

Section 4: Schedule and Deliverables

Schedule

The proposed schedule for scenario 1 is provided in appendix B. A graphic summary of the process is provided below. This schedule has been prepared with the following considerations in mind:

- Coordinate all work with the MPPDC as the key elements of the GRIT project are being developed.
- Allow work to proceed in parallel wherever practical.
- Provide multiple opportunities for AtkinsRéalis to present the MPPDC with interim results and recommendations so the MPPDC and the AtkinsRéalis team can.
- Adjust work as needed, especially as detailed elements of the plan are being formulated.
- Start to apply key results as soon as they become available.
- Ensure that the final plan meets the MPPDC priorities and is set up in a manner that facilitates ongoing updates.

Under scenario 1, To meet the December 31, 2026 project completion deadline outlined in the RFQ, we have developed a proposed schedule with an estimated total duration of 10 months. We recognize that this is an aggressive timeline; however, we have the resources and capabilities to achieve this accelerated schedule. This schedule does not include the development of a hydrodynamic model. Data obtained during this phase could, however, be very useful in modeling in future phases.

We acknowledge that Addendum 2 dated January 13, 2026 states that an extension of the grant is under review. A numerical model could definitely be accomplished and would be beneficial under scenario 2. In either case, our team is open to adjusting the project scope and timing, based on the preferences of the MPPDC. If additional time is desired for activities such as interim product reviews or public input, it may be appropriate to lengthen the schedule. This will be a key topic for discussion during contract award negotiations and before the initial kickoff meeting.

Once established, AtkinsRéalis will closely manage all work elements and will provide monthly progress reports to the MPPDC. Because some aspects of the schedule are influenced by factors outside our control, we will communicate any issues to the MPPDC on a routine basis. Below are assumptions that could affect the final project schedule. These assumptions do not prevent project completion; rather, they represent potential hurdles the project team will address:

- A Notice-to-Proceed is issued to AtkinsRéalis after March 1, 2026.
- Access to private lands is not available, and permissions from property owners outside MPPDC's control are required.



Deliverables

Task 1 – Project Initiation, Work Plan, and Scheduling

- Approved Project Work Plan & Schedule
- Monthly Progress Reports
- Meeting Agendas & Minutes
- Final Technical Data Package

Task 2 – Existing Conditions

- Draft Existing Conditions Report (ECR)
- Final ECR
- GIS Data Package with Metadata

Task 3 – Conceptual Design

- Conceptual Design Drawings
- Alternatives Summary
- Design Review Workshop Notes

Task 4 – Basis of Design

- Draft Basis of Design Report (BOD)
- Final BOD with Technical Appendices

Task 5 – Feasibility

- Draft Resilience Feasibility Assessment
- Final Feasibility Assessment Report

Task 6 – Land Conservation

- Draft Land Conservation Suitability Assessment
- Final Assessment Report
- GIS Parcel Prioritization Package

Task 7 – Environmental & Regulatory

- Draft Environmental Review Summary
- Draft Joint Permit Application (JPA)

Task 8 - Cultural Resource Assessment (Optional)

- Field Data Collection Reports
- Updated GIS Layers
- Cultural Resource Assessment Survey (if authorized)

Potential risk and Mitigation strategy

Schedule Challenges & Mitigation Strategies

At AtkinsRéalis, we evaluate the potential impacts to our projects budget and schedule. We develop a risk register of the risks we identify on the project and their impacts to the critical path. The following provides a short description of several items we see as potential challenges and mitigations strategies for each.

Data Collection and Environmental Window Constraints

Field surveys (LiDAR, bathymetry, biological assessments) may be delayed by weather, or seasonal conditions required for submerged aquatic vegetation (SAV) mapping and marsh assessments. This may be mitigated by understanding potential delays and front-loading data acquisition scheduling such as LiDAR and bathymetric surveys immediately after project initiation to avoid seasonal/weather constraints and accelerate baseline development. Also the project team must all understand and define scheduling constraints (in both data collection and construction) due to environmental windows.

Regulatory Review Timelines

Coordination with multiple agencies can extend permitting timelines, particularly if formal consultations for listed species or Essential Fish Habitat (EFH) are triggered. This could be mitigated with coordinating with agencies early. Conducting pre-application meetings during Task 1 to clarify permitting pathways, identify potential issues early, and reduce risk of late-stage delays can provide a project understanding and buy-in by the regulatory agencies early in the project stages.

Stakeholder Engagement Complexity

Scheduling Tribal and community engagement sessions may require additional time to allow inclusive participation and consensus-building. By locking in engagement dates during kickoff and leveraging virtual workshops for interim reviews project momentum can be maintained and scheduling conflicts can be minimized. Our team is also positioned and able to coordinate with stakeholder engagements efforts by others that are in place and underway.

Task Interdependencies

By performing parallel task execution while conceptual design work is underway, we may reduce the overall timeline.

Risk Management Planning

We take a proactive approach to risk management that begins with contract execution and continues through every phase of project delivery. Our teams identify, rank, and mitigate risks specific to each scope, integrating cost, schedule, and technical considerations to keep the focus on high-impact issues. Leveraging our regional expertise, we anticipate potential design and permitting challenges early in the process and build realistic schedules that reduce the likelihood of costly delays. For example, seasonal survey restraints, jurisdictional ambiguity, and agency review times can individually or cumulatively impact project schedules.

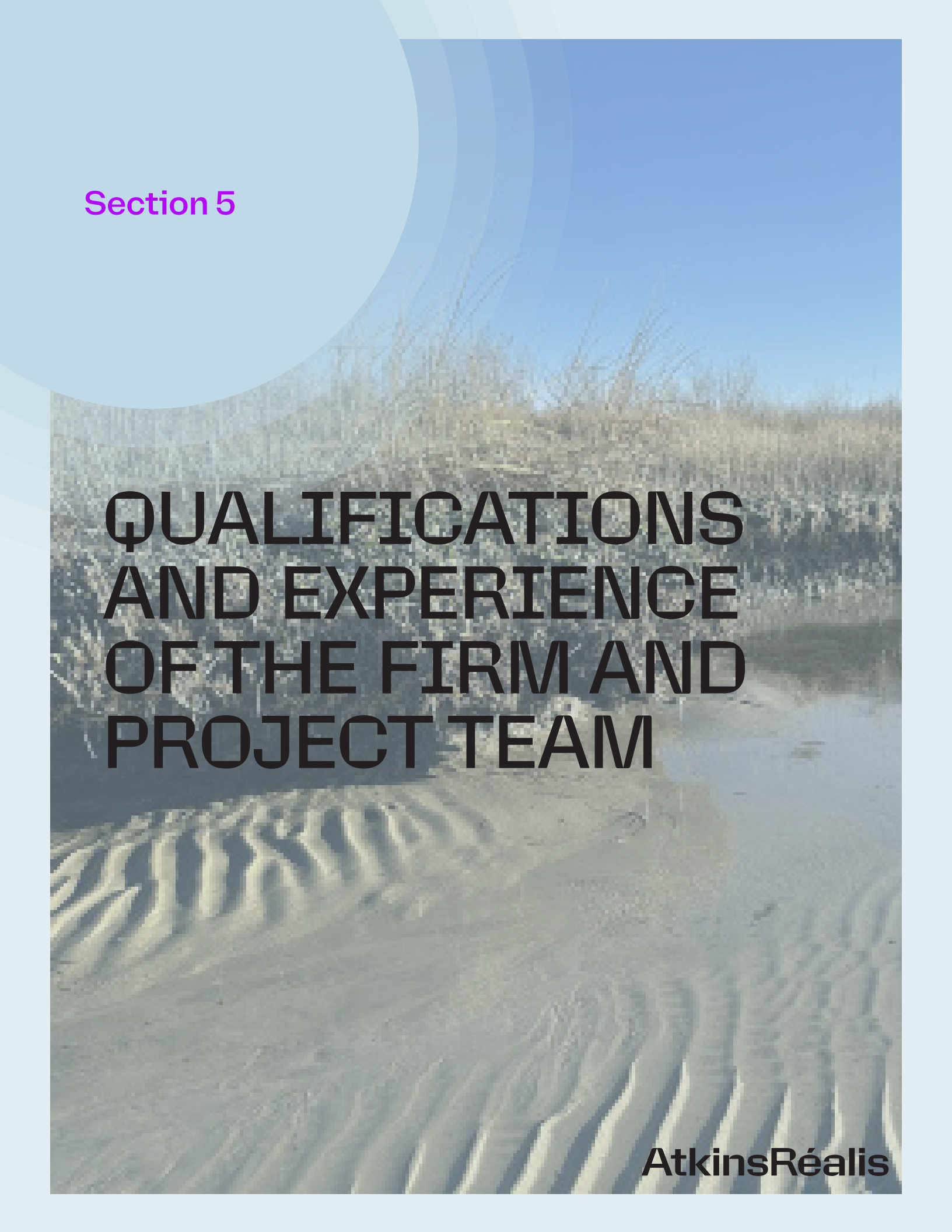
A risk register is required for all projects and serves as the foundation for monitoring and controlling risks throughout the project lifecycle.

By embedding risk management into every stage of delivery, we provide clients with confidence that challenges are anticipated, addressed, and resolved before they become costly obstacles, ultimately improving efficiency, reducing uncertainty, and strengthening project outcomes.

Budget Controls

AtkinsRéalis employs a comprehensive and proactive approach to budget control, combining structured methodologies with advanced technology to ensure financial discipline and project success. We leverage our company-wide Oracle accounting software for real-time cost tracking and performance evaluation. These systems are integrated with our Cost Breakdown Structures (CBS) and Work Breakdown Structure (WBS), ensuring consistency and traceability across all project components.

We continuously monitor project costs through forecasting and variance analysis, enabling us to identify potential issues early and predict their impact. Our earned value tracking tool enhances this capability by providing insights that inform the development of corrective actions when needed.



Section 5

QUALIFICATIONS AND EXPERIENCE OF THE FIRM AND PROJECT TEAM

Section 5: Qualifications and Experience of the Firm and Project Team

Overall technical experience

The AtkinsRéalis' coastal engineering team is organized around five communities of practice, as illustrated in (see in [Figure 19](#)), and is supported by a broad bench of engineers, scientists, and specialists with direct experience in coastal processes, sediment management, numerical modeling, ecological restoration, and regulatory coordination. This integrated structure enables efficient deployment of appropriate expertise throughout the project and supports continuity from planning through implementation.

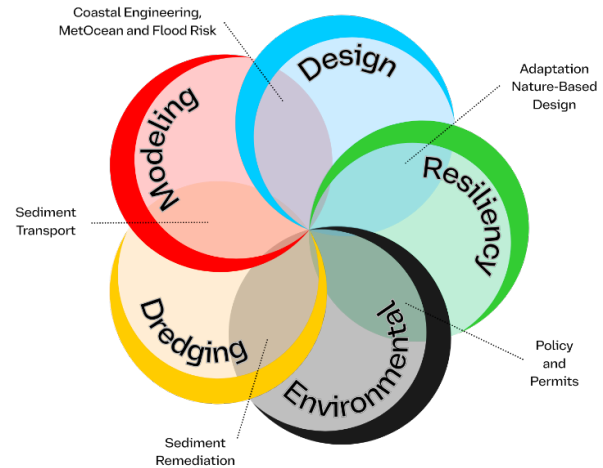


Figure 19: AtkinsRéalis' Coastal Communities of Practice

Section 5 of this proposal highlights representative projects that demonstrate our technical competence and past performance on coastal engineering and resilience efforts similar in scope and complexity to the GRIT Phase I project. These examples reflect our ability to integrate beneficial use of dredged material, nature-based and hybrid design strategies, and climate-resilient planning within structured, multi-stakeholder environments.

In addition to AtkinsRéalis' in-house capabilities, our team is strengthened by specialized subconsultants who provide targeted expertise and local knowledge that enhance project efficiency and outcomes. Together, this integrated team offers MPPDC a high level of technical depth, capacity, and availability, positioning AtkinsRéalis and its partners to deliver high-quality, timely, and actionable Phase I results.

Performance reviews

Performance reviews come in many forms. To us, there are none more rewarding than the emails and letters we receive from satisfied clients; and while we can't include them all within the confines of this proposal, below we have included several excerpts from some of our client feedback for our recent coastal engineering work. At any time, we'd be happy to share with you the complete documents for your reference.

DNREC, Waterway Management Tool Project
2021 Sierra Davis, Oceanographer, NOAA/NOS/CO-OPS - DNREC
Regional Waterway Management Geospatial Tool

"This came together really well! Thanks for all of your efforts and sharing this work... Great job!"

2021 Ashley Norton, Planner, DNREC Waterway Management Tool Project

In reference to the regional waterway management tool that Atkins developed: *"I use it almost weekly!"* For DNREC, the geodatabase now serves as an important management tool, especially in the current age of COVID. Never before had all of the geospatial datasets relevant to Delaware Waterways been aggregated, vetted, and visualized together. This was stated by DNREC at the Coastal Geo Tools Conference.



Prime Hook National Wildlife Refuge Restoration

2017 Press Release, U.S. Fish and Wildlife Service (USFWS)

"And in just 18 months, the USFWS and it's partners completed one of largest and most complex coastal restorations ever attempted on the east coast. A model for sustainable coastal resiliency around the country and around the world." – USFWS on the successful implementation of the Prime Hook NWR Restoration scheme. Building a Stronger Coast: Prime Hook National Wildlife Refuge

<https://www.youtube.com/watch?v=lTHbYoTs6bc>



2017 Best Restored Beaches Award – American Shore and Beaches Preservation Association (ASBPA)

Prime Hook National Wildlife Refuge Restoration – Beach Restoration Phase

<http://asbpa.org/about-us/awards-program/best-restored-beaches-past-winners/>



2016 Silver Environmental Excellence Award – World Organization of Dredging Associations (WODA) – Presented

to Atkins on behalf of all project participants at the 21st World Dredging Congress (WODCON XXI) in Miami, June 16, 2016

Prime Hook National Wildlife Refuge Restoration – Overall Project Award

WODA Press Release – 2016 Environmental Excellence Awards

https://westerndredging.org/phocadownload/2016_Env_Awards/WODA%20Prime%20Hook%20Final%20Submission1.pdf%20-%20Adobe%20Acrobat.pdf

Project Team

AtkinsRéalis provides you with a multidisciplinary team of experts in the fields of coastal, beaches, shoreline, and waterway engineering and management. We employ a management approach that has been demonstrated to be highly effective for ensuring strict quality and contract compliance in the performance of work conducted for MPPDC and other clients. Our management philosophy involves the following critical components:

- A highly qualified project manager who has a proven track record managing and completing assignments on time will be assigned to be the primary point of contact. He will be supported by a Deputy PM and on-site technical advisor to provide immediate access to MPPDC.
- An efficient, functional organizational structure that provides clear lines of authority, responsibility, accountability, and communication. (see [Figure 20](#)).
- Strict cost and schedule control procedures that address planning, scheduling, budgeting, and performance measurement.
- Highly refined and tested subcontractor procurement and management methods.
- A quality assurance and quality control (QA/QC) plan designed to expedite progress, minimize rework, and provide high quality deliverables.

Led by our project manager, **Doug Gaffney, PE, BC.CE**, the AtkinsRéalis team has the requisite experience, skills, and capacity to fully support MPPDC's coastal needs. Doug will be supported by **Russell Burke, Ph.D.** as the on-site Technical Advisor. Doug and Russ have worked together on various initiatives starting with the Parallel Thimble Shoal Tunnel project in 2017.

The following staff play an intricate part in our design, analysis, permitting, planning, bid support, and construction management.



Figure 20: Organizational Chart

Subconsultant Bio



Biogenic Solutions Consulting, LLC is a Virginia-based coastal resilience innovator led by Dr. Russell Burke. The firm's work spans beneficial reuse of dredged material, flocculation technologies (biological and polymer), and nature-based shoreline stabilization, demonstrated in the RISE Rural Coastal

Community Resilience Challenge at Whittaker Creek, VA with ReadyReef, J&R, GID, and others, supported by Virginia Sea Grant and regional partners. Publications and project documentation emphasize applied research, multi-technology installations (GeoTubes, ShoreSox, FlexaMat, EnviroLok), and regulator engagement. Biogenic Solutions Consulting, LLC boasts a strong record for managing complex projects under challenging physical and regulatory conditions, including working in shallow-water, nearshore environments to install living shoreline projects (i.e. Hog Island, Whittaker Creek, and Urbanna Creek).



Earth Systems Management, LLC is a leading Virginia-based land surveying and geomatics consulting firm dedicated to delivering precise and innovative solutions for environmental and infrastructure projects. Founded by Joseph W. Betit, a veteran with over five decades of experience, the company specializes in GPS survey control

networks, construction layout, and boundary determination, while supporting complex land development and restoration initiatives. With a strong commitment to technical excellence and education, Earth Systems Management has pioneered advancements in geospatial engineering and continues to serve as a trusted partner for clients seeking accuracy, reliability, and forward-thinking expertise.



J&R Coastal Marine Services

J&R Coastal Marine Services is a Virginia-based family-owned marine operations and coastal restoration company committed to protecting and revitalizing shorelines across Virginia's waterways. Co-owned by Raymond Donn, a retired U.S. Navy Chief Petty Officer with over 35 years of marine expertise, and Jarod Donn, a biology

graduate specializing in marine ecology, the firm offers a full suite of services including living shoreline construction, oyster reef restoration, underwater sediment sampling, and project management for complex coastal resilience initiatives. Known for technical proficiency, adaptability, and hands-on experience, J&R has partnered with state agencies, nonprofits, and private clients to deliver sustainable solutions that enhance habitat, mitigate erosion, and strengthen community resilience against coastal challenges.

Subject Matter Experts Bio



Getting It Done Company (GID), owned and operated by Louis Barrett Belvin and Jennifer Belvin Hayes, specializes in designing, fabricating, transporting, and deploying shoreline protection and oyster reef restoration projects. Since joining the MPPDC Fight The Flood Program in 2021, GID has completed projects across Virginia's waterways, including the Middle Peninsula, Elizabeth River, Lynnhaven

River, Piankatank River, and Bayside Eastern Shore. The company collaborates with state, federal, and nonprofit partners to deliver sustainable coastal solutions, working closely with BSC and J&R Coastal Marine Services on reef fabrication, monitoring, and deployment.

CARVER CO CarverCo LLC is a specialized real estate advisory and development firm focused on projects that integrate environmental sustainability, cultural heritage, and economic viability. The company partners with private investors, institutional owners, and public entities to deliver strategic solutions for complex initiatives involving land stewardship, hospitality, mixed-use development, and coastal resiliency. With a proven track record in structuring and closing high-value transactions, CarverCo leverages deep expertise in due diligence, acquisition, development planning, and public-private partnerships to create projects that balance financial performance with long-term community and environmental benefits.



Kent Communications is a full-service advertising, marketing, and public relations agency led by President Tom Kent. Since 1999, the firm has helped clients navigate timely transitions in an ever-changing media and digital environment, manage global client portfolios, and execute high-visibility awareness campaigns. The agency is known for long-standing client partnerships and sector expertise that includes environmental outreach across Virginia's Middle Peninsula—educating diverse audiences on the ecological and economic value of oysters and shellfish in the Chesapeake Bay. Kent Communications continues to evolve with technology and artificial intelligence while delivering strategic, results-driven campaigns for public, private, and nonprofit clients.

Staff Bios

AtkinsRéalis Staff Bios are mentioned below:



Doug Gaffney, PE, BC.CE **Project Manager**

Douglas A. Gaffney is a Technical Director at AtkinsRéalis and the Global Technical Authority for Maritime and Coastal Engineering within the Water Global Technical Network. With over 35 years of experience in waterfront and coastal projects, Doug is recognized for his expertise in coastal resilience, living shorelines, beneficial use of dredged material, and climate change adaptation.

Doug has managed and delivered complex, multidisciplinary programs, including serving as Environmental Manager for the Hampton Roads Bridge-Tunnel Expansion and leading nature-based restoration projects across the U.S. and internationally. Notably, he played a key role in the Gandy's Beach Beachfront Sustainability Project (NFWF-funded) and the Government of Guyana mangrove restoration. Doug's professional background includes government (U.S. Army Corps of Engineers), manufacturing (geosynthetic tubes and polymeric marine mattresses), and coastal and waterfront engineering design.



Dean Goodison, PE **Principal-in-Charge**

Dean Goodison brings 30 years of engineering and management expertise, specializing in water resources and transportation systems. His multidisciplinary background enables him to navigate technical and administrative challenges in evolving infrastructure environments. As a seasoned project manager, Dean has successfully delivered projects ranging from rapid assignments to multimillion-dollar designs. He has managed nine large-scale contracts, including a \$5 million design/environmental study for a \$90 million construction project and FEMA floodplain mapping contracts totaling over \$5.7 million for New York State. These efforts positioned his firm as a leader in FEMA's Risk MAP program. Dean's technical proficiency spans infrastructure planning, environmental studies, hydraulic modeling, and forensic engineering. With experience on 40+ water resource projects, he ensures cost, scope, schedule, and quality are met through proactive communication and timely delivery. His leadership and proven track record make him an ideal Principal-in-Charge for complex, high-value projects.



Tereza Hernandez **Deputy Project Manager**

Tereza Hernandez brings nearly three years of floodplain mapping, resilience planning, and community engagement experience across FEMA, LOFD Risk MAP and CERC programs, local government support, and federal grant development. At AtkinsRéalis, she supports multidisciplinary delivery by managing task trackers, schedules, and QA/QC workflows; performing technical editing with ADA Section 508 compliance; and producing GIS/remote-sensing outputs (ArcGIS Pro/Online, Survey123, ENVI, Google Earth Engine) for stakeholder-ready maps, figures, and data packages. Her

portfolio includes program support to FEMA's STARR II CERC (memorandums, toolkits, outreach), Henrico County Floodplain Management (facilitating workshops, permit intake, technical edits to the Strategic Operations Plan), Regional Service Center ad-hoc GIS (FIRM georeferencing, Hazus validation, public map packages), FEMA FFRMS GIS (HUC analyses and QC), the DOE FloodSmart Homes initiative (coordinating 100+ assessments and resident communications—award-recognized), and USDOT PROTECT grant support (drafting budget and schedule timelines).

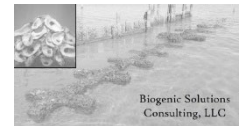


Victoria Kincell, PE, CFM, WEDG
QA/QC Manager

Victoria Kincell, PE, CFM, WEDG is a QA/QC Manager with 6 years of experience in water resources and utility design, project management, permitting, and stormwater engineering. Victoria has led quality control reviews, managed drainage and utility projects, and performed field inspections and site visits for both public and private sector clients. Her expertise includes developing project drawings, technical specifications, cost estimates, and bid documents, as well as coordinating with agencies and stakeholders. Victoria is a licensed Professional Engineer in Texas, a Certified Floodplain Manager, and a Waterfront Edge Design Guidelines Associate. She holds a B.S. in Ocean Engineering from Texas A&M University and has completed advanced training in project quality management and engineering software.



Russell Burke, Ph.D.
Onsite Technical Advisor



Russell is the owner and Chief Marine Scientist of Biogenic Solutions Consulting, LLC, bringing 23 years of marine biology experience and 12 years leading BSC. He has managed over \$1.8 million in contracts and served as an Environmental Biology Professor for 14 years. Russell's expertise spans native oyster reef restoration, living shorelines, and nutrient credit program development. He has directly supervised and managed field operations, construction, and monitoring for projects funded by the U.S. Army Corps of Engineers, Virginia Port Authority, and Middle Peninsula Planning District Commission, including shoreline stabilization, oyster reef monitoring, sediment and water investigations, and innovative use of dredged materials. Russell's leadership has informed regulatory policy and enabled large-scale wetland protection within the region. He is experienced in coordinating with public agencies, private partners, and community stakeholders. Russell holds a Ph.D. in Marine Science from the College of William and Mary and a B.S. from Rider University.



Janet Luce, PMP
Lead Resiliency

Janet Luce is a seasoned project manager with 34 years of specialized experience in coastal and waterway management. Her expertise spans resiliency planning, emergency response and recovery, geographic information systems (GIS), regulatory permitting, public outreach, and grants administration. She has led projects for the Florida Fish and Wildlife Conservation Commission (FWC) and the Florida Department of Environmental Protection (FDEP), where she also provided staff augmentation for the FDEP Resilient Florida Program. Janet has authored numerous research studies and guidance documents for state agencies and local governments and has played a key role in disaster response and recovery efforts for federally declared events, including hurricanes, flooding, wildfires, and the COVID-19 pandemic. She is highly proficient in Esri GIS applications and frequently leads stakeholder engagement initiatives through data-driven public outreach.



Jack Weaver, EI
Lead Sustainability

Jack Weaver has 4 years of coastal engineering experience involving waterway marker project design, project management, and reporting for the Florida Fish and Wildlife Conservation Commission (FWC), construction management, field data collection, and design,

planning, and deployment of living shorelines through the Indian River Lagoon Research Institute. Jack also has experience with Federal Emergency Management Agency (FEMA) data sorting and collecting through FEMA's internal database (MIP). He also has experience working in Florida Department of Environmental Protection (FDEP) offices reviewing and writing resilient Florida grants, Hurricane relief grants, and permit applications. Jack has research experience from writing technical whitepapers, guidance documents, and technical specifications for the American Bureau of Shipping (ABS), FDEP, and FWC.



Lizbeth Childs, PE
Technical Advisor

Lizbeth Childs has nearly 20 years of coastal engineering project management, policy, permitting, design, and construction expertise. She has supported a variety of projects including inlet dredging, beach restoration, shoreline protection structures, marinas, and fishing piers. Lizbeth also provides detailed quality control reviews for reports, permit applications, project drawings, and specifications.



Justin Bartusek, PE
Lead Dredging Designer

Justin Bartusek is a licensed Professional Engineer with eleven years of specialized experience in the dredging industry. Justin has contributed to projects involving navigation and beneficial use dredging, marsh restoration, disposal and placement operations, permitting support, and environmental impact assessments. His hands-on expertise includes performing weekly field work and developing innovative solutions that enhance project outcomes and client satisfaction.

Beyond dredging, Justin's coastal engineering experience spans revetment design, FEMA Flood Hazard Analysis and Emergency Response, grant and proposal development, navigation hazard assistance for the Florida Fish and Wildlife Conservation Commission, inspections, reporting, and data analysis. Committed to continuous learning, Justin brings fresh perspectives and creative techniques that drive efficiency and sustainability in coastal and marine projects.



Mike Salisbury, PE, D.CE
Numerical Modeling Lead

Mike Salisbury, P.E., D.CE, is a seasoned numerical and hydrodynamic modeling expert with more than a decade of experience leading coastal and ocean modeling initiatives. As a Coastal Engineering Team Leader, he has served as project manager and lead modeler on major circulation and flood-risk modeling projects across the U.S. and internationally. His expertise includes developing, calibrating, and validating hydrodynamic and ocean-circulation models for applications such as risk assessment, floodplain mapping, and long-term climatology studies. He has authored peer-reviewed publications on model development and performance evaluation, contributing to advancements in coastal and ocean modeling science. Salisbury also serves as Chair of the Coastal and Estuarine Hydroscience Committee within ASCE's Coasts, Oceans, Ports, and Rivers Institute—recognition of his leadership in numerical modeling and coastal hydroscience. With graduate and undergraduate degrees in civil engineering, Salisbury blends strong technical capability with practical engineering insight, guiding multidisciplinary teams to deliver data-driven, high-fidelity modeling solutions for resilient coastal planning.



Nicole Elridge, PE
Living Shorelines Design

Nicole's 15 years of experience includes coastal engineering involving shoreline protection structure design and planning, beach nourishment template design and monitoring, field data collection, permit and construction drawings, construction observation,

dredge design, numerical modeling, and Federal Emergency Management Agency (FEMA) coastal flood hazard analysis, and mapping studies. Her FEMA coastal flood hazard analysis experience includes numerical modeling, nearshore hydraulics and statistical data analysis, coastal flood hazard area mapping, public outreach support, production of non-regulatory coastal flood risk products, coastal appeal review and resolution support, coastal Letter of Map Revisions support, and quality control for FEMA Regions I, V, VI, IX, and X.



Leslie Manzello
Regulatory and permitting Lead

Leslie Manzello has 20 years of experience in environmental sciences. She has worked on a wide variety of projects and her areas of expertise include environmental permitting, marine benthic assessments, environmental assessments, and technical writing. Leslie has a firm grasp on environmental rules and regulations on the local, state, and federal level and is able to identify the best permitting pathways/mechanisms to obtain regulatory authorizations as quickly as possible. Over the years, She has built strong relationships with agency personnel. Through direct and frequent coordination with the agencies, she is able to keep projects moving forward, with the goal of avoiding or minimizing any requests for additional information which can lengthen the permitting process. If impacts to natural resources are unavoidable, Leslie also has ample experience in formulating mitigation plans.



Jonathan Rakowski
Coastal Ecologist

Jonathan Rakowski is an environmental scientist with 9 years of experience specializing in water resources management. He is skilled in applying MidTRAM and using ESRI's ArcGIS desktop and is knowledgeable in water law, policy, and management concepts. Additionally, Jonathan has experience with designing using Autodesk's AutoCAD and programming in Python.



Jarod Donn
Deputy Field Operations Manager

Jarod Donn is co-owner of J&R Coastal Marine Services alongside his father, Raymond Donn. During college, Jarod gained hands-on experience in native oyster restoration and living shoreline projects through an internship with Dr. Russell Burke and extensive field work in Hampton Roads estuaries and rivers. This work shaped the marine ecological focus of his biology degree, completed in 2024.

Since graduating, Jarod has focused on expanding his company's capabilities to include project management, broadening the scope of services offered. In growing the business, he has developed diverse skills—from seamanship to welding—essential for marine operations. Jarod strives to be a valuable partner for any organization, bringing technical expertise, adaptability, and a strong commitment to coastal restoration and marine services.



**J&R Coastal
Marine Services**



Raymond Donn
Field Operations Manager

Raymond Donn – Owner & Operator, J&R Coastal Marine Services
Raymond Donn, a retired U.S. Navy Chief Petty Officer, brings over 35 years of expertise in marine operations, maintenance management, and hazardous materials handling. After his military career, he served as Liquids Terminal Operations Manager at Kinder Morgan Inc., Armory Supervisor and Ordnance Equipment Mechanic



**J&R Coastal
Marine Services**

at Yorktown Weapons Station, and currently works as Ammunition Administrator and Manager at Naval Station Norfolk.

Raymond holds certifications including OSHA HAZWOPER 40-hour and ICS 300, and has extensive experience with fire suppression systems and technical maintenance. His diving skills have made him the lead scientific diver for reef sampling and deployment on multiple contracts, as well as a consultant for Biogenic Solutions Consulting's in-water projects.

He actively supports wetland protection through the Middle Peninsula Planning District Commission's Fight-The-Flood Program, collaborating on project management, installation, and monitoring with leading coastal resilience firms.



Joe Betit
LIDAR & Survey Specialist

Joseph Betit is the founder and CEO of Earth Systems Management, LLC, with 50 years of experience as a Professional Land Surveyor and Geomatics Engineer. He has led major land development, environmental, and infrastructure projects, including survey management for the Dulles Metrorail Project and global innovation roles at Bechtel. Joseph pioneered distance learning in engineering surveying at Old Dominion University and has been instrumental in developing autonomous hydro drone mapping systems for coastal resilience. His expertise spans project management, advanced geospatial technologies, and workforce development. Joseph is a licensed California Professional Land Surveyor, a life member and past president of the California Land Surveyor Association, and an active contributor to the Fight-The-Flood Program. He is recognized for his leadership in integrating innovative survey solutions and mentoring the next generation of geospatial professionals.



Matthew Cusack, PWS, PMP
Lead Spatial Analysis

Matthew Cusack brings 26 years of experience in project management and technical performance within environmental consulting. As a Spatial Analyst, Matthew excels in environmental permitting, supporting projects from large-scale initiatives like the William States Lee Nuclear Power Station to innovative coastal floodwater storage systems in North Carolina. His expertise includes spatial data analysis, GIS mapping, and regulatory compliance, enabling effective solutions for complex environmental challenges. Matthew's collaborative approach with local and Federal agencies has earned him recognition, including the FHWA Award for Environmental Excellence and the USACE Commander's Award for Public Service. He is known for developing rapid functional assessments for wetlands and for building strong partnerships that keep projects on schedule and deliver lasting benefits. Matthew's analytical skills and commitment to client success make him a valuable asset to the GRIT team.



Jennifer Whitte
Spatial Analyst

Jennifer Whitte is a skilled GIS Specialist with expertise in spatial analysis, data management, and mapping for environmental and infrastructure projects. She supports permitting, wetland and habitat assessments, land use analysis, and environmental impact studies across multiple states. Jennifer is proficient with GPS data processing, ESRI ArcGIS tools, and CAD file integration. Her experience spans projects in Texas, Florida, Louisiana, and beyond, providing critical GIS support for diverse clients and regulatory needs.



Meghan Day
CADD

Meghan has approximately 4.5 years of applied civil engineering experience involving design and engineering of civil infrastructure, water and sewer utility

pipings, lift station design, utility master planning, water and wastewater hydraulic modeling and drainage.



L. Barrett Belvin
Field Scientist

Louis Barrett Belvin is the owner of Getting It Done Company (GID) and an experienced environmental professional with a strong background in marine and coastal restoration. He holds a Bachelor of Science in Biology from East Tennessee



State University and has completed advanced training in Environmental Law, Stormwater Management, and Air Quality through Virginia DEQ and NOAA. Louis is certified in stormwater management and erosion control at multiple levels, OSHA Hazardous Waste Operations (40-hour), and marine safety, and is a certified SCUBA diver with over 120 dives. His career spans roles as a Fisheries Biologist at Saltwater, Inc., Compliance Inspector for the Virginia Department of Agriculture, Environmental Scientist at Mott MacDonald, and Environmental Compliance Coordinator at Dominion Energy's Surry Nuclear Power Station. Combining technical expertise with hands-on experience, Louis leads GID in delivering innovative shoreline protection and oyster reef restoration projects across Virginia.



Hampton Carver
Land Assessment Specialist

Hampton Carver is a senior real estate executive with over 35 years of experience



leading complex, capital-intensive enterprises that integrate development, land stewardship, historic assets, hospitality, habitat preservation, and public engagement. He has served as a trusted partner to owners, investors, and public entities on high-visibility initiatives where political, financial, and operational considerations intersect. Known for his collaborative leadership and international operating experience across the U.S., Europe, and Asia, Mr. Carver has delivered due diligence, acquisition, development planning, and public-private partnerships for projects involving agriculture, environmental sustainability, cultural and architectural heritage, hospitality, mixed-use development, and coastal resiliency. He has originated, structured, and closed more than \$1 billion in advisory and transactional engagements for private capital, institutional owners, and public entities, ensuring disciplined capital allocation and alignment across public and private interests. His representative clients include James City County, Cooke Seafood of Canada, City of Newport News, Chase Manhattan Bank, UBS Asset Management, Commonwealth of Virginia, Hill Studio, Prudential, CIGNA, Highwoods Properties, TYCO, NRP Group, Apollo China, and Progress Russia.



Tom Kent
Outreach Coordinator

Tom Kent is a veteran advertising, marketing, and public relations leader with a 40-year track record of national awards, enduring client relationships, and results that include



guiding a client awareness campaign to a congressional hearing. As President of Kent Communications, the agency he founded in 1999, he continues to advise long-term clients from his home on the James River, staying current with evolving media, digital platforms, and the rapid influence of artificial intelligence. In Virginia's Middle Peninsula, he has spent 12 years promoting the environmental and commercial benefits of oysters and other shellfish to the Chesapeake Bay and its tributaries, producing education campaigns for the Oyster Company of Virginia and collaborating on similar initiatives with the Virginia Ecological Solutions Foundation, Biogenic Solutions Consulting, and J&R Coastal Marine Services, with past work for Drakes Bay Oyster Company (CA) and No Shuck Oysters (VA).

Similar Work Experience

Project Name (graphics for post-construction photo, drawings, concept plans, or other visual depiction) Little River Dredging and Beneficial Use

Brief Project Description:

AtkinsRéalis is proud to support the Delaware Department of Natural Resources and Environmental Control (DNREC) in the design and permitting of maintenance dredging for the Little River federal navigation channel, as well as the beneficial use (BU) of dredged material to restore degraded wetlands along the Delaware Bay Coastline. This project involves the dredging



Figure 21: Little River

of approximately 80,000 cubic yards of silty sediment to maintain navigability of the waterway.

A key component of the project is the beneficial use of dredged material through Thin Layer Placement (TLP) techniques. Dredged sediment will be strategically placed across degraded wetlands located approximately 1 mile north of the dredge site. This innovative approach addresses wetland degradation due to SLR and human disturbance, while also supporting the creation of high marsh nesting habitats for the potentially federally threatened Saltmarsh Sparrow.

AtkinsRéalis is currently designing the project and leading comprehensive data collection efforts, including:

- Topographic and bathymetric surveys
- Geotechnical sampling and testing (physical and chemical properties, including PFAS, surface water, and elutriate testing)
- Environmental assessment using the Mid-Atlantic Tidal Wetland Rapid Assessment Method (MidTRAM)

Advanced design techniques include the use of satellite spectroscopy which uses multi-spectral band analysis to evaluate site conditions such as vegetation density and topographic changes. A Normalized Difference Vegetation Index (NDVI) was generated to assess vegetation health and inform elevation targets for material placement, ensuring optimal conditions for native vegetation establishment and minimizing the risk of invasive species.

AtkinsRéalis continues to coordinate with USACE, USFWS, and DNREC to refine the design and support permitting efforts. This project exemplifies our commitment to sustainable, science-driven solutions that enhance ecological resilience and preserve vital waterways.

Location of the office responsible for the project: Calverton, MD

Budgeted Cost: \$732,000

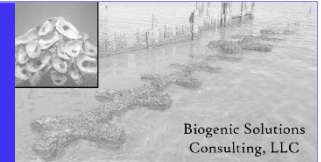
Completed Cost: Project is still ongoing

Year Completed: Ongoing

Actual Completion Date: Ongoing

Project Name (graphics for post-construction photo, drawings, concept plans, or other visual depiction)

Hog Island Living Shoreline Project



Biogenic Solutions Consulting, LLC

Brief Project Description:

Biogenic Solutions Consulting, LLC implemented the Hog Island Living Shoreline Project in accordance with the Middle Peninsula Planning District Commission's Hog Island Request for Proposals (RFP), the Hog Island Project Permit, and other published project materials. Field Assistance was provided by Getting It Done Company, Golden Oyster Marine Services, and J&R Coastal Marine Services.



The stacked concrete oyster structures (NatrX ExoForms) were placed two on the bottom and one on top in a line along the shore to form a nearshore reef that will extend to about +2.5 ft MLW. The crest elevation was just above mean high water to help reduce the effects of larger waves that impact the site during storms. Blocks were placed strategically at existing headlands and along the marsh between the headlands along the south-

Figure 22: The Hog Island Shoreline Protection Project, as viewed from an aerial drone in 2024

facing shoreline. Gaps were between 10 ft and 30 ft wide, purposefully minimized to reduce waves impacting the marsh between the structures. The structures were placed inshore of existing SAV on subaqueous bottom to maximize oyster colonization, and stretched a total of 977 linear ft. The small concrete structures were placed along the marsh scarp at MLW on the east-facing shoreline, and stretched a total of 372 linear ft. Each reef segment was between 52 ft and 150 ft long, with small gaps of 12 ft to 20 ft wide.

Since the completion of construction, sand has accreted behind many of the structures, marsh erosion has slowed (and, in some areas has been fully arrested), and the reefs have become wrapped up in oysters, mussels, barnacles, etc.

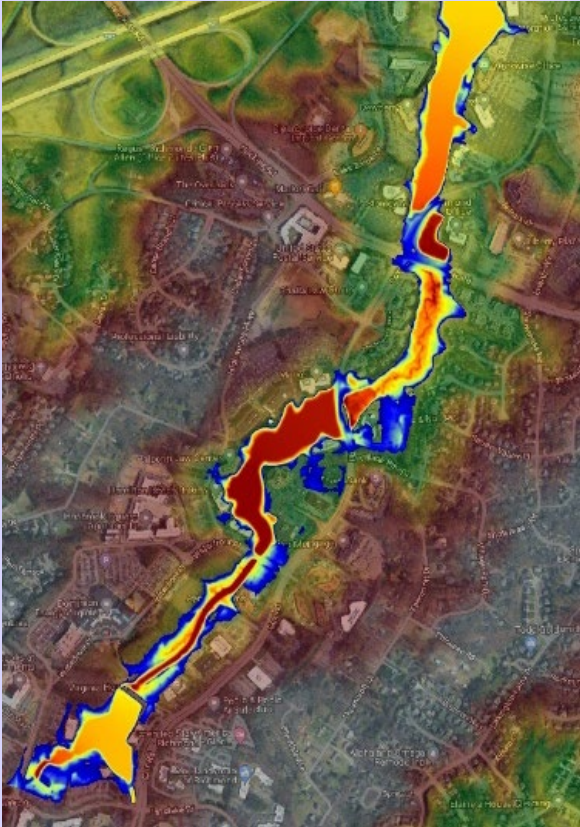
Location of the office responsible for the project: Newport News, Virginia

Budgeted Cost: \$799,948

Completed Cost: \$799,948.00

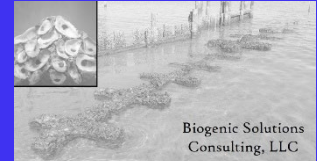
Year Completed: 2024

Actual Completion Date: 17 March 2024

Project Name (graphics for post-construction photo, drawings, concept plans, or other visual depiction)	Commonwealth of Virginia, County of Henrico, Professional Engineering Services- Annual Drainage Contract
Brief Project Description: AtkinsRéalis is delivering a suite of integrated services to strengthen Henrico County's flood resilience, drainage infrastructure planning, and dam safety programs. This multi-year, multi-task order support included hydrologic/hydraulic modeling, GIS-based prioritization tools, regulatory and permitting support, operational planning, and community engagement strategies. Specific support has included:  Figure 23: Henrico County Flood resilience area • Developed a countywide drainage prioritization tool integrating GIS storm-sewer data, precipitation gauges, and CIP inputs to guide objective, data-driven drainage investment decisions. • Performed HEC-HMS and HEC-RAS 2D modeling for a dams-in-series study assessing cascading failure, climate change impacts, and rehabilitation options for Cox Road Dam. Delivered EAPs and an EOP annex, supported by consequence modeling (e.g., DSS-WISE™ Lite) for risk-based decision-making. • Designed stormwater improvement projects to mitigate chronic flooding and erosion from an undersized storm sewer system, incorporating downstream outfall solutions, detention options, wetlands delineation, SUE investigations, surveys, and staged design development with full regulatory and stakeholder coordination. • Developed a GIS dashboard and parcel-level outreach tools to support FEMA flood map update communications, including equity-aware analysis using FEMA RAPPT indicators. Facilitated a developer symposium to align stakeholders with updated County standards. Henrico County received the National Association of Floodplain and Stormwater Management Agencies (NAFSMA) Excellence in Communications Award (2024) and ASFPM Outreach/Media Award (2025) for the floodplain map change campaign supported by our team. They also received recognition by the American Public Works Association's Mid-Atlantic Chapter in 2024 for the Developer Symposium.	
Location of the office responsible for the project: Primarily Alexandria, VA	
Budgeted Cost: Multiple Task Orders totaling over \$1.4M	
Completed Cost: All task orders were completed within or below budget	
Year Completed: Task orders have been completed in 2024, 2025 and some are still ongoing	
Actual Completion Date: Task orders have been completed in 2024, 2025 and some are still ongoing	

Project Name (graphics for post-construction photo, drawings, concept plans, or other visual depiction)

Whittaker Creek Shoreline Restoration Project



Brief Project Description:

This innovative project was led by Biogenic Solutions Consulting, LLC, in coordination with ReadyReef, Inc., J&R Coastal Marine Services, Getting It Done Company, and Golden Oyster Marine Services. Additional assistance was provided to the team by Tencate/Solamax (GeoTubes), SOX Shoreline Solutions, Inc. (DredgeSOX), Groh Land Air and Water LLC (biopolymer flocculant and dredging support), and SNF, Inc. (polymer flocculant and specialty pump support). The project sponsor, the Middle Peninsula Planning District Commission, was organized by RISE, and Growth Opportunities Virginia, and was funded by the Virginia Sea Grant. The project was completed at a Middle Peninsula Chesapeake Bay Planning Access Authority property in fall 2023, with marsh grass planting completed in spring 2024.



Figure 24: Whittaker Creek Shoreline Protection Project seen with lush marsh grasses thriving months after project completion in 2024 at this Middle Peninsula Chesapeake Bay Public Access Authority Property - Captain Sinclair's

This was a proof-of-concept demonstration project to which Virginia regulators have paid close attention, due to the beneficial reuse of dredged material, flocculation of said material with biological and chemical polymers, and implementation of numerous technologies, including GeoTubes, ShoreSox, FlexaMat, EnviroLok Bags, and Concrete Buttress Reefs. This project continues to flourish and serves as an example of how channel-dredging needs, dredged-material management, and shoreline restoration can be simultaneously, and cost-effectively, addressed at a given site.

Location of the office responsible for the project: Newport News, Virginia

Budgeted Cost: \$197,554

Completed Cost: \$197,554

Year Completed: 2024

Actual Completion Date: April 2024

Project Name (graphics for post-construction photo, drawings, concept plans, or other visual depiction)

Prime Hook National Wildlife Refuge Marsh Restoration

Brief Project Description:

Located 22 miles southeast of Dover, Prime Hook National Wildlife Refuge and its adjacent water bodies are important natural features along the western shore of Delaware Bay and throughout the region. Prior to the project, a number of storm events caused flooding and erosion as well as the opening of several breaches between the Refuge and Delaware Bay, inundating portions with significant amounts of saltwater from tidal exchange.

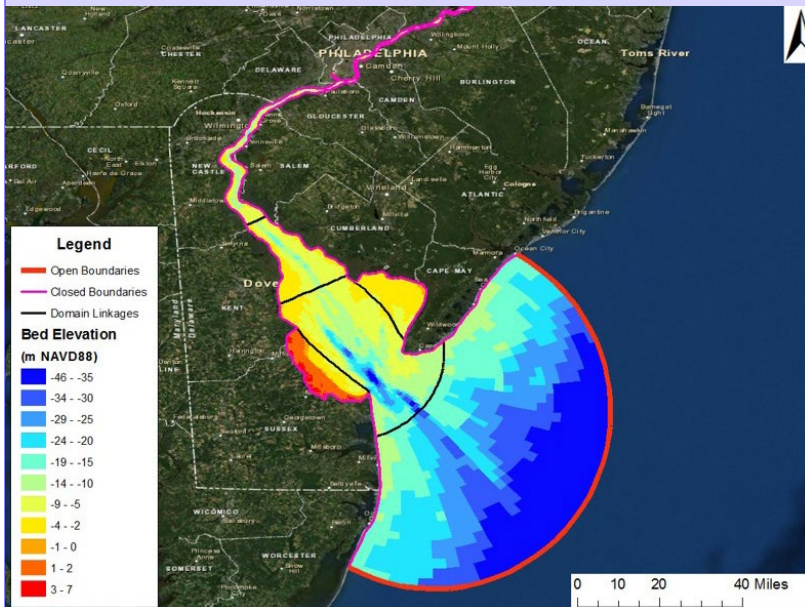


Figure 25: Prime Hook

Due to the change in the habitat, and in the face of climate change and rising sea levels, USFWS decided that the best solution would be to restore and manage the system as a salt/brackish marsh, as it existed before disruption. AtkinsRéalis engineers and scientists helped determine the repairs and changes necessary to make that possible. A hydrodynamic and numerical model of the Refuge and adjacent bay region was created using Delft3D, chosen for its ability to account for the effects of tides, wind, waves, and fresh and saltwater mixing. The model was driven by tidal, riverine, and wind forces for both

operational ("normal") conditions and for extreme conditions during Hurricane Sandy, for which a wealth of measured data was available within the Refuge for model verification.

The model framework was designed to test a number of potential restoration alternatives under normal and extreme conditions and identify the scenarios which maximized conditions favorable for saltmarsh habitat restoration and growth.

The Prime Hook restoration project won multiple awards, including the World Organization of Dredging Association's 2016 Silver Environmental Excellence Award and the American Shore and Beach Preservation Association 2017 Best Restored Beaches Award.

Location of the office responsible for the project: Milton, DE

Engineer Cost: \$510,000

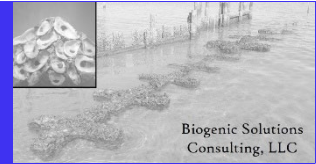
Construction Cost: \$31M

Year Completed: 2016

Actual Completion Date: 2016

Project Name (graphics for post-construction photo, drawings, concept plans, or other visual depiction)

Urbanna Creek Living Shoreline Project



Brief Project Description:

Biogenics Solution Consulting, LLC (BSC) completed a living shoreline project at a private residence in Urbanna Creek (tributary of the Rappahannock River) in fall 2024. This was a project led by Biogenic Solutions Consulting, LLC, in coordination with J&R Coastal Marine Services, Getting It Done Company, and Natrx, Inc. (the reef vendor and permit agent). The project sponsor was the Middle Peninsula Planning District Commission and the funding came from the Infrastructure Investment and Jobs Act of 2021.



Figure 26: Photo Evidence of a Once-Eroding Shoreline in Urbanna Creek flourishing months after completion of an MPPDC-supported living shoreline project (summer 2025)

The homeowners were concerned with land loss/collapse from erosion (left photo) and sought a Natural and Nature-Based Feature solution. BSC conducted the field survey for the permit application. Upon the homeowners' receipt of the approved permit(s), they formally engaged BSC in October 2024. After clearing all debris, and cutting away overhanging bush and tree limbs, the reefs were transported by barge and installed on site. Then, large sandbags were filled off site, transported via crane truck, loaded onto the barge, and the sand released from each bag and distributed behind the reefs. Once all of the sand was spread and compacted, marsh grass was planted, and goose net fencing was installed.

The marsh grass has since grown to maturity (right photo). In addition, a line of smaller reefs (not pictured here) was installed in front of a portion of the property fringed with marsh grass; since the slope was shallow there and the grass was healthy, no additional sand was deposited; nor was any additional grass planted. Overall, the sponsor and homeowners were pleased with the outcomes of this project.

Location of the office responsible for the project: Newport News, Virginia

Budgeted Cost: \$101,831

Completed Cost: \$101,831

Year Completed: 2024

Actual Completion Date: November 2024

Project Name (graphics for post-construction photo, drawings, concept plans, or other visual depiction)

Barbours Cut Dock Expansion and San Jacinto Marsh Restoration Project

Brief Project Description:

The San Jacinto Marsh is a 350-acre tidal wetland complex which lies at the confluence of the Houston Ship Channel and the San Jacinto River. The site is designated as a National Historic Landmark within the San Jacinto Battleground. The area is surrounded by heavy industrial uses and significant subsidence in the project area has converted much of the marsh into a small lake.



Figure 27: Aerial view before and after for Barbours Cut Dock Expansion and San Jacinto Marsh Restoration Project



Figure 28: Existing Condition on January 9, 2026

The project was a collaboration between Texas Parks and Wildlife Department (TPWD), AtkinsRéalis, and a private client. AtkinsRéalis began design work for marsh restoration in April 2015, with the design beneficially using new-work dredge material from a dock expansion project completed for the private client. The San Jacinto Marsh would be restored with the target outcome of a functioning tidal wetland that was similar in appearance to the original conditions at the site. A team of AtkinsRéalis engineers, dredging specialists, archaeologists, scientists, and permitting specialists delivered the multifaceted project for bid in 8 months.

The final project incorporated an innovative design that challenged conventional thinking on traditional dredge project by utilizing a unique combination of dredging techniques to transport approximately 500,000 cubic yards of new-work dredge material along the 9.7-mile Houston Ship Channel route. An additional challenge included a tight 1:1 dig to fill ratio requiring close oversight to ensure target fill elevations were not exceeded. The successful placement of material was directed by AtkinsRéalis staff

and was completed in June 2016.

AtkinsRéalis was also tasked with performing post-construction site monitoring for 2 years. Monitoring included observing and documenting site changes resulting from material settlement and stabilization, hydraulic route evolution, and vegetation growth. The freshly placed dredge material supported a variety of targeted vegetation species, large numbers of wading bird populations, a few nesters, and marine life.

Location of the office responsible for the project: Houston, TX

Budgeted Cost: \$22,320,000 (budgeted construction cost)

Completed Cost: \$22,280,000 (actual construction cost)

Year Completed: 2016

Actual Completion Date: 2016

Design Advisory Participation & Procurement

AtkinsRéalis acknowledges that participation in the design advisory process, including the provision of technical information or non-binding recommendations, does not constitute a conflict of interest and will not preclude a firm or manufacturer from submitting proposals during the future construction procurement, provided that firm does not have access to non-public procurement information nor assists in the preparation of future procurement documents. All data and information compiled during this project will be submitted to MPPDC and will therefore be considered public information.

Section 6

RESPONSE CAPABILITY

Section 6: Response Capability

AtkinsRéalis will assign the GRIT – Phase I Project the highest priority within our coastal resilience portfolio to assure timely delivery and exceptional quality. We have assembled a multidisciplinary team of coastal engineers, ecologists, GIS specialists, and permitting experts with extensive experience in resilience planning, dredging and nature-based shoreline design.

To strengthen local engagement and regional expertise, AtkinsRéalis has integrated Biogenic Solutions Consulting and their consortium into the project team. These local experts will provide on-the-ground knowledge of the Guinea Marsh and Mobjack Bay systems, assist with field data collection, and support stakeholder engagement activities. Our staffing plan includes a Project Manager with dredging and environmental management experience in Virginia, Doug Gaffney, as the primary point of contact for MPPDC and the Project Team, ensuring rapid responsiveness and seamless coordination. He will be supported by a Deputy Project Manager, Tereza Hernandez who graduated from the University of Richmond in Sustainability and the Environment. Additional technical staff will be allocated based on the required discipline and task complexity, with surge capacity available to address schedule accelerations or unforeseen challenges. By leveraging our regional offices, local partnerships, and digital collaboration tools, we can provide immediate availability for meetings, stakeholder engagement, and technical reviews. AtkinsRéalis' resource flexibility and proactive workload management enable us to meet all milestones while maintaining open communication and adaptability throughout the project lifecycle.

Name	Role	Responsibilities	Percentage of Availability
Dean Goodison, PE	Principal-in-charge	Program Management	5%
Doug Gaffney, PE, BC.CE	Project Manager	Project Management and Design	50%
Russell Burke, PhD.	Onsite Technical Advisor	Living Shoreline Advisory	25%
Tereza Hernandez	Deputy Project Manager	Project Management and Stakeholder Outreach	75%
Victoria Kincell, PE, CFM, WEDG	QA/QC Manager	QA/QC	10%
Janet Luce, PMP	Lead Resiliency	Vulnerability and Resilience	50%
Jack Weiner, EI	Lead Sustainability	Sustainability	80%
Lizbeth Childs, PE	Technical Advisor	Coastal	25%
Justin Bartusek, PE	Lead Dredging Designer	Beneficial Use of Dredged Material	75%
Mike Salisbury, PE, D.CE	Numerical Modeling Lead	Numerical modeling and Coastal Hydroscience	50%
Nicole Eldridge, PE	Living Shorelines Design	Engineering Design	50%
Jonathan Rakowski	Coastal Ecologist	Coastal Resource Assessment	50%
Leslie Manzello	Lead Coastal Ecology	Resource Management and Permitting	50%
Jarod Donn	Deputy Field Operations Manager	Field Operations	50%

Name	Role	Responsibilities	Percentage of Availability
Raymond Donn	Field Operations Manager	Field Operations	25%
Joe Betit	LIDAR & Survey Specialist	Surveying	50%
Matthew Cusack, PWS, PMP	Lead Spatial Analysis	GIS and remote Sensing	25%
Jennifer Whitte	Spatial Analyst	GIS	50%
Meghan Day	CADD	Drafting	50%
L. Barrett Belvin	Field Scientist	Coastal Construction	25%
Hampton Carver	Land Assessment Specialist	Land Ownership and Real Estate Consultation	35%
Thomas Kent	Outreach Coordinator	Stakeholder Outreach	50%

Section 7

INSURANCES

Section 7: Insurance

AtkinsRéalis maintains all required insurance certificates in accordance with the RFP's terms and conditions. Upon award of the contract, we will promptly provide the necessary Certificates of Insurance for client review and approval.

Section 8

REFERENCES

Section 8: References

Project Name	Little River Dredging and Beneficial Use, Delaware
Description of services provided	Engineering Design, Geophysical and Environmental Data Collection, Permitting, Agency Coordination
POC Client name	Joanna French
Address	285 Beiser Blvd., Suite 102, Dover, DE 19904
Telephone Number	302.739.9000

Project Name	Strathmere, New Jersey Living Shoreline
Description of services provided	Design, public outreach, permitting, grants management
POC Client name	Wayne Thomas, PE, President, Strathmere Fishing and Environmental Association
Address	PO Box 77, Strathmere, NJ 08246
Telephone Number	201.832.3351

Project Name	Sebastian Inlet District Coastal Engineering Consultant Services
Description of services provided	Engineering Design, Geophysical and Environmental Data Collection, Permitting, Agency Coordination, Post Construction Environmental Monitoring, Bidding Services, Construction Oversight and Permit Compliance Services.
POC Client name	James Gray, Executive Director, Sebastian Inlet Taxing District
Address	114 Sixth Ave, Indialantic, FL 32903
Telephone Number	321.724.5175

Project Name	Hog Island Shoreline Restoration
Description of services provided	Living Shoreline Construction, Oyster Reef Installation, Wave Energy Reduction, Marsh Protection, Habitat Enhancement
POC Client name	Lewis Lawrence, MPPDC
Address	4521 Lewis B Puller Mem Highway, Mattaponi, VA 23110
Telephone Number	804.785.8100

Project Name	Whittaker Creek Shoreline Restoration
Description of services provided	Beneficial Use of Dredged Material, Polymer Flocculation, GeoTube & ShoreSox Installation, Concrete Reef Construction, Marsh Grass Planting
POC Client name	Lewis Lawrence, MPPDC
Address	4521 Lewis B Puller Mem Highway, Mattaponi, VA 23110
Telephone Number	804.785.8100

Project Name	Urbanna Creek Living Shoreline
Description of services provided	Living Shoreline Design & Construction, Reef Installation, Sand Fill & Marsh Grass Planting, Erosion Control, Habitat Restoration
POC Client name	Lewis Lawrence, MPPDC
Address	4521 Lewis B Puller Mem Highway, Mattaponi, VA 23110
Telephone Number	804.785.8100

Section 9

OTHER SUPPORTING DATA

Section 9: Other Supporting Data

Coastal Engineering And Science

AtkinsRéalis has a coastal practice in the US led by Doug Gaffney. Within this practice are coastal engineers and scientists having both academic and real-world experience. The Coastal Practice intersects with our eco-sciences group to bring clients the full range of disciplines necessary to design and implement living shorelines and nature-based solutions. Our Coastal Practice provides opportunities for staff to share experiences and learn cutting edge techniques from other professionals.

Dredge Design, Permitting, and Material Management

AtkinsRéalis brings extensive experience in dredge design, permitting, and long-term dredged material management for coastal waterways and inlets, having successfully completed over 50 dredging projects across a wide range of applications. This expertise is demonstrated by more than a decade of service to Martin County supporting maintenance of the federally authorized St. Lucie Inlet (SLI). Since 2009, we have delivered more than 50 beach, inlet, and dredging-specific assignments encompassing studies, design, permitting, construction oversight, and comprehensive physical and biological monitoring, all in accordance with the state-approved Inlet Management Plan. Our experience also includes ongoing sediment bypassing at Sebastian Inlet and navigation dredging with beneficial use of dredged material to support wetland restoration through the Little River Maintenance Dredging project. Collectively, these projects reflect our full-spectrum dredging capabilities—from evaluating sediment characteristics across silts, sands, and clays, to developing innovative, cost-effective, and bid-competitive designs, and implementing long-term management strategies for dredging and beneficial use sites. By providing sustained management services, AtkinsRéalis supports a proactive approach to planning future needs, including routine maintenance dredging and scheduled placement of beneficial use material.

Living Shoreline Expertise And Experience

Living shorelines promote sustainable shoreline stabilization while preserving or enhancing natural habitats. The AtkinsRéalis team has designed shoreline projects to reduce erosion, buffer storm impacts, and enhance water quality using natural elements like oyster reefs, mangroves, and salt marsh vegetation. In higher-energy environments, rock or precast concrete elements may be required. The design process begins with a thorough site analysis, considering factors such as wave energy, soil type, and existing vegetation. Implementation involves careful placement of organic and structural materials to work with the natural coastal processes. These projects not only protect infrastructure and ecosystems but can provide recreational and educational opportunities, making them a valuable investment in the resilience and ecological health of coastal habitats and shorelines.

One example is at Philippe Park in Pinellas County, Florida where AtkinsRéalis designed an innovative living shoreline solution along a 2,850 ft segment of aging seawall. During conceptual design (see [Figure 29](#)), the study area was divided into four shoreline segments. Based on feedback and comments from the client, a stakeholder working group, and regulatory agencies on the potential design alternatives, a preferred design alternative was selected for each segment. The design alternatives incorporated features such as eco-rap (small reef balls that work similar to riprap), nearshore reef balls, oyster wave breaks, and marsh grass plantings. The locations were strategically designed to dissipate wave energy, create habitat, and improve shoreline stability. These elements will not only protect against erosion but also establish coastal wave environments conducive to the natural recruitment of seagrasses. By integrating coastal engineering principles with local ecological expertise, our living shoreline projects support biodiversity and long-term resiliency of shorelines.

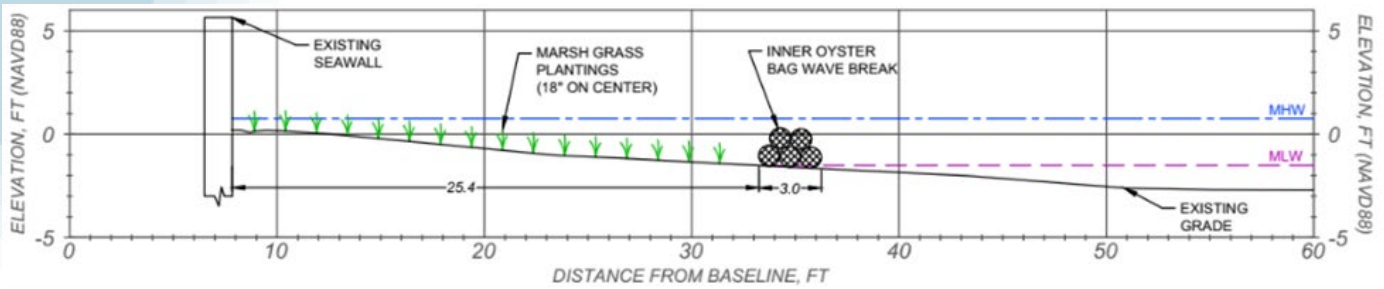


Figure 29: Cross-section of living shoreline design at Philippe Park

Another example is our work along the backbay of Strathmere, New Jersey. We have been assisting the Strathmere Fishing and Environmental Association (SFEA) with the execution of their NOAA grant to implement a stone sill to reduce erosion of a coastal marsh and lessen high tide flooding of the community (see Figure 30). Assistance has included design, public presentations, grant writing, and technical assistance during the permitting process.



Figure 30: Coastal marsh along Whale Creek, Strathmere, NJ

Experience With Statewide Coastal Planning

AtkinsRéalis has a history of partnering with state governments and local agencies to deliver comprehensive beach and shoreline management planning. Our team has worked with the State of Delaware since 2010, on beneficial reuse, shoreline stabilization and erosion control strategies. We have also worked with the State of Florida for over 25 years on coastal resilience initiatives, permitting, and habitat restoration, in addition to the Strategic Beach Management Plan mentioned prior. These collaborations demonstrate our ability to integrate science-based solutions with regulatory requirements to protect and enhance coastal resources.

State of Delaware DNREC Management Plan for Delaware Bay Beaches

The beaches along the western shore of Delaware Bay have long experienced varying levels of shoreline erosion due to intermittent storm events and the resultant wind, wave, and water level

forces acting on the beach system. In the past, beach nourishment projects and shoreline protection structures along the Delaware Bay were implemented on an as-needed basis.

The State of Delaware initiated a long-term beach management plan and associated cost analysis. The goal of the plan was a cost-effective strategy for the future management of the Bay beaches. AtkinsRéalis (at the time doing business as PBS&J) was tasked by DNREC's Shoreline and Waterway Management Section to develop a ten-year beach management plan for the communities of Pickering Beach, Kitts Hummock, Bowers Beach, South Bowers Beach, Slaughter Beach, Primehook Beach and Broadkill Beach. The management plan addressed the impacts of beach erosion caused by waves and storm surge. The plan incorporated existing literature and data, previous historical analyses, coastal processes modeling, conceptual beach nourishment designs, and cost estimates and schedules. The plan provided recommendations to protect and enhance the beach and dune system in each of the communities included in the study.

State of Delaware DNREC Waterway Management

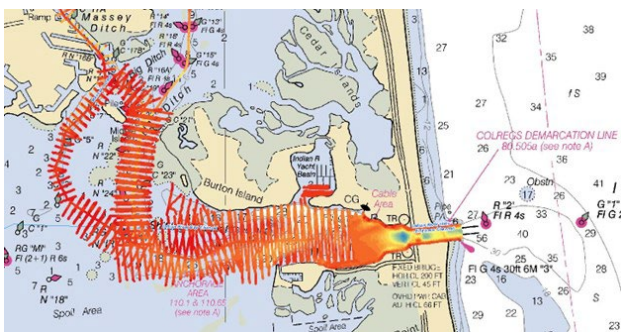


Figure 31: Geodatabase showing shoaling and scour within Indian River Bay Channel

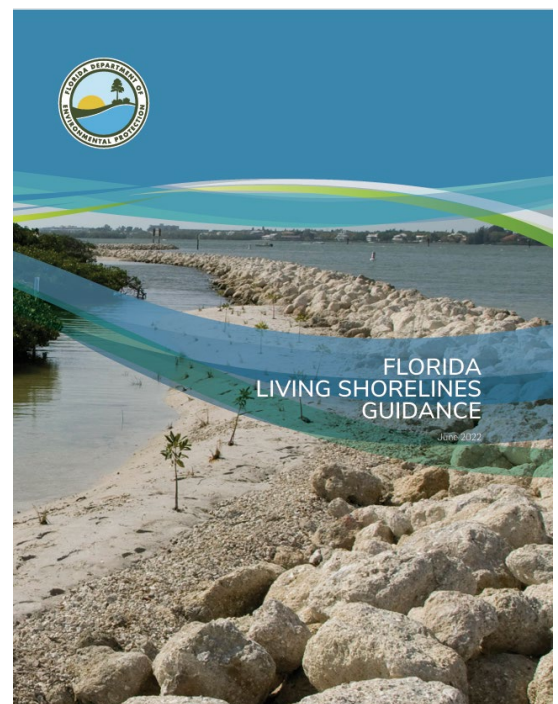
The State of Delaware is responsible for maintaining navigable waterways across its coastal system, from the Delaware River and Bay to the Inland Bays. To improve efficiency in managing these waterways, and to optimize sediment use for dredging and beach replenishment, DNREC partnered with AtkinsRéalis to develop a statewide, data-driven prioritization tool. This project demonstrates AtkinsRéalis' deep understanding of DNREC's vision and ability to deliver a solution that balances funding limitations with critical needs. By structuring historical datasets and integrating bathymetric surveys, navigation markers, channel

centerlines, and dredging history into a centralized geodatabase, AtkinsRéalis provided DNREC with a holistic regional management approach that promotes data-driven decision making.

The geodatabase now serves as a powerful repository that improves accessibility across DNREC teams, supports survey planning, and enables efficient coordination between field and office staff. It functions as a statewide tool for evaluating channel conditions, prioritizing dredging, and addressing navigational challenges, while remaining scalable to accommodate future datasets as DNREC's needs evolve. Survey plans developed by AtkinsRéalis establish baseline conditions for each waterway, supporting future dredging efforts and long-term monitoring. The success of this project was driven by clear dialogue and DNREC's openness to innovative solutions, resulting in a system-wide platform that enhances operational efficiency, interagency collaboration, and resource optimization across Delaware's waterways.

State of Florida Living Shoreline Guidance Document

AtkinsRéalis created a statewide Living Shoreline Guidance Document for the Florida Department of Environmental Protection's Resilient Florida Program. This guidance document provides Resilient Florida grantee's with a fundamental understanding of the considerations involved in managing, planning, and designing a living



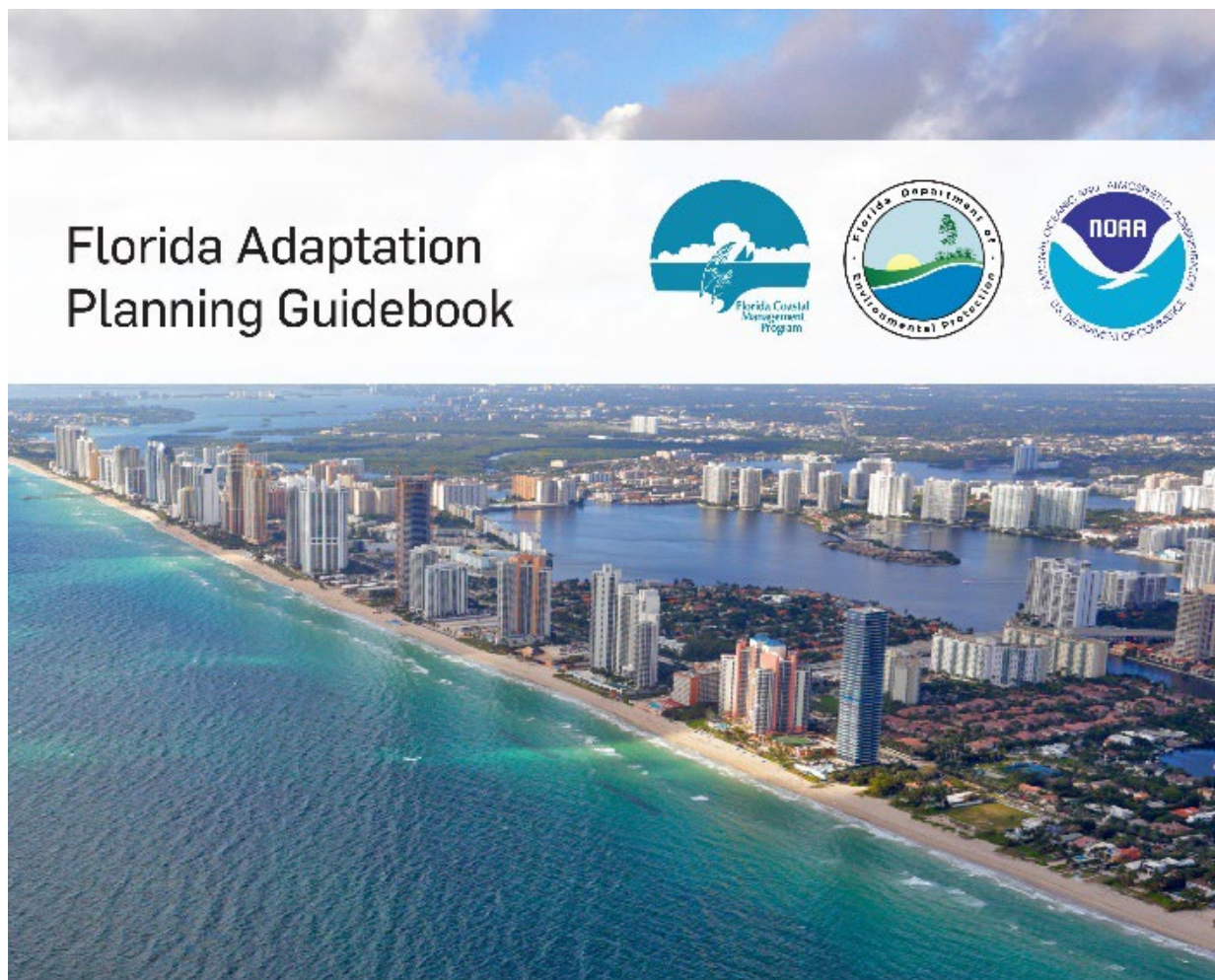
shoreline project in Florida. The Guidance Document addresses and provides details on the following:

- The different types of living shoreline projects that are effective in Florida;
- The primary design elements when considering a living shoreline project;
- Questions an applicant should ask when meeting with a design professional; and,
- Other items that should be considered as part of a living shoreline project such as permitting, construction, costs, and maintenance.

State Of Florida Adaptation Planning Guidebook

AtkinsRéalis was tasked with compiling and developing a suite of documents, including the Adaptation Planning Guidebook and its accompanying pamphlets. These resources were designed to enhance awareness of adaptation planning processes, funding sources, and best practices for hazard mitigation and SLR adaptation. The guidebook is scalable, catering to local government planners in cities and counties of all sizes, and provides a framework for developing or updating Adaptation Plans in line with Florida's laws and requirements.

The project faced several complexities, including the need to revise existing guidelines to reflect changes in local government planning requirements. Our team conducted thorough assessments of community planning processes, vulnerabilities related to SLR, and storm surge impacts. We recommended actionable adaptation strategies for local governments, ensuring that the materials were not only informative but also practical and implementable.

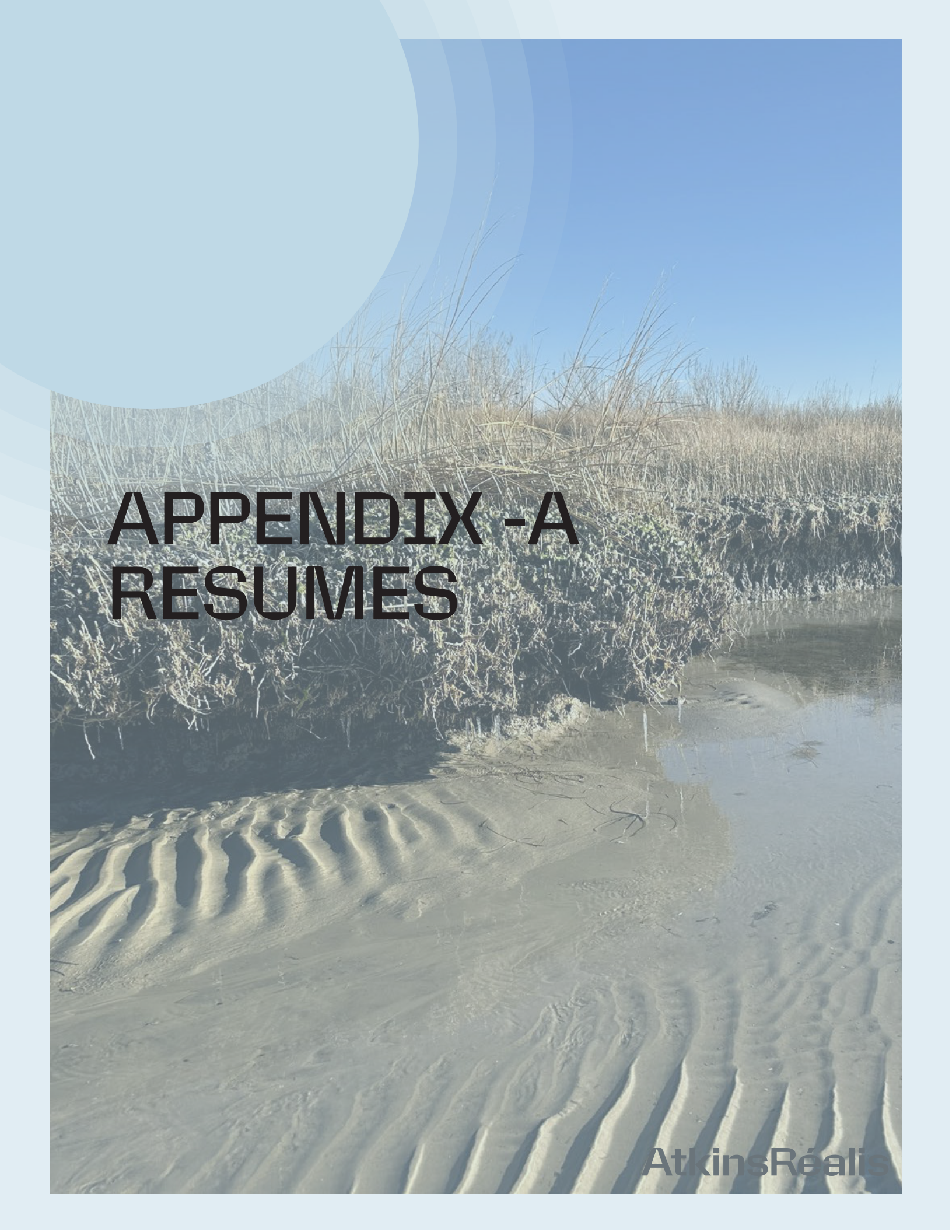


Section 10

SUBMISSION OF PROPRIETARY INFORMATION

Section 10: Submission of Proprietary Information

We acknowledge the provisions of the Virginia Public Procurement Act (Va. Code § 2.2-4342) regarding the designation of trade secrets or proprietary information. Our submission does not contain any trade secrets or proprietary information requiring protection under this statute. Accordingly, we have not invoked any confidentiality designation for this proposal.



APPENDIX -A RESUMES

Douglas (Doug) Gaffney, PE, BC.CE
Project Manager

Doug Gaffney is a Technical Director at AtkinsRéalis and the Global Technical Authority for Maritime and Coastal Engineering within the Water Global Technical Network. With **35 years** of experience in waterfront and coastal projects, Doug is recognized for his expertise in **coastal resilience, living shorelines, beneficial use of dredged material, and climate change adaptation**. Doug has led complex, multidisciplinary programs—serving as Environmental Manager on major design-build tunnel and bridge initiatives, including the **Hampton Roads Bridge-Tunnel Expansion**—and has delivered nature-based restoration from **Biloxi Marsh (LA)** and **Little River (DE)** to shoreline redesigns in **New York City** and ecosystem restoration in **Barneget Bay (NJ)**. His international work includes advising the **Government of Guyana** on mangrove restoration and innovative coastal protection. As Project Manager, Doug will oversee integrated design, permitting, stakeholder coordination, and delivery of resilient, ecosystem-enhancing solutions grounded in rigorous coastal analysis and practical construction experience.

Doug’s project experience includes:

Gandy’s Beach Beachfront Sustainability Project, Downe Township, NJ. Project Manager / Lead Coastal Engineer. Led a National Fish and Wildlife Foundation (NFWF)-funded initiative to protect developed community areas and enhance estuarine habitat. Responsible for coastal analyses, shoreline change mapping, numerical modeling of alternatives, and final design of breakwaters to support beachfill longevity and ecological habitat (horseshoe crab spawning, Red Knot foraging). Coordinated with NJDEP, USACE, and township stakeholders for regulatory compliance and project delivery.

Bulkhead Evaluations and Living Shoreline/Beneficial Use of Dredged Material Assessment, Ocean County, NJ. Project Manager. Managed inspection and assessment of bulkheads at waterfront properties acquired after Superstorm Sandy. Developed recommendations for repair/replacement and conceptual designs for fringing marshes, pocket beaches, and beneficial uses of dredged material. Oversaw stakeholder engagement, technical reporting, and resilience planning.

Little River Dredging and Beneficial Use, Delaware Department of Natural Resources and Environmental Control (DNREC), Delaware. Technical Advisor. Provided technical guidance for a dredging project aimed at restoring a degraded coastal marsh using dredged material. Advised on project design, ecological enhancement strategies, and beneficial use of materials to support marsh resilience and habitat restoration.



Total years of experience

35

Years with firm

1

Education

M.S. Marine Studies (Applied Ocean Science), University of Delaware, 1989
B.S. Marine Engineering, US Merchant Marine Academy, Kings Point, NY 1984

Registrations/licenses

Professional Engineer
New Jersey, 1997
New York, 2015
Pennsylvania, 2021
Texas, 2025

Military

LT US Navy Reserve (1984 – 1994)

Certifications

Diplomate, Coastal Engineering
ASCE Academy of Coastal, Ocean, Port, Navigation Engineers, 2011
Surface Air Supplied Work Diving Safety and Supervision Course, Key West, FL

Douglas Gaffney, PE, BC.CE

Project Manager

Bluff Restoration – Navesink River, Monmouth County Parks Department, Monmouth County, NJ. Project Manager. Managed the restoration of a bluff using an innovative living wall and geosynthetic mattress slope protection system. Led conceptual design, permitting, erosion and sediment control, and development of final plans and specifications. Oversaw construction and compliance with environmental restrictions.

Hampton Roads Bridge Tunnel Expansion Project, Virginia Department of Transportation (VDOT), Norfolk, Virginia. Environmental Manager.

Responsible for acquisition of federal and state permits, NEPA coordination, environmental assessment, mitigation planning, and development of the Environmental Management Plan. Led stakeholder engagement, regulatory compliance, and coordination with maritime community for marine-based construction.

Mangrove Restoration and Protection, Government of Guyana, Guyana, SA. Coastal Engineering Advisor. Assisted in developing a science-based restoration program and designing innovative coastal structures to protect and restore mangroves. Provided coastal engineering expertise, wave data collection, and on-site support during construction of breakwaters for mangrove protection.

Strathmere Fishing and Environmental Association Living Shoreline Project, Strathmere Fishing and Environmental Association (SFEA), Strathmere, NJ. Technical Advisor. Advised on a \$1.5 million living shoreline design and construction funded by NOAA. Provided engineering review of flood insurance rate maps, conducted studies on chronic flooding, and contributed to climate change adaptation strategies, resulting in local ordinance changes.

Biloxi Marsh Living Shoreline, Coastal Protection and Restoration Authority of Louisiana (CPRA), St. Bernard Parish, Louisiana. Geosynthetics and Foundation Technical Support. Provided technical support for the design and construction of approximately 11 miles of living shoreline protection to reduce erosion and enhance ecological habitat. Coordinated with design teams, manufacturers, and modelers for design and construction specifications.

Bay Park Marina Living Shoreline, Bay Park Marina, Avalon, NJ. Designer. Designed a living shoreline with nearshore sills, marsh plantings, and reinforced vegetated slopes to replace a concrete embankment, supporting shoreline resilience and habitat creation.

Special Projects Engineer – Borough of West Wildwood, Borough of West Wildwood, NJ. Special Projects Engineer. Refined a living shoreline project to reduce wave impacts and storm flooding, including stone breakwaters and marsh restoration. Supported project approval for BRIC funding.

Wave Monitoring Program, Delaware Bay, The Nature Conservancy, Delaware Bay, NJ. Program Developer. Developed and implemented a low-cost wave monitoring program to assess the efficacy of oyster reefs for shoreline protection.

PADI Open Water SCUBA Diver

Professional affiliations

American Society of Civil Engineers (ASCE), Member

Coasts, Oceans, Ports, and Rivers Institute (COPRI)

American Shore and Beach Preservation Association (ASBPA) – editorial board

Northeast Chapter President ASBPA – past President 1997 – 2019

Publications

Gaffney, D.A., Incorporating Climate Change into the Design of Coastal Infrastructure, presented at the Connecticut Valley Chapter of ASCE Geo-Institute, Spring Geotechnical Seminar, 2024

Gaffney, D.A., Living Hybrid Wall/Revetment for Stabilizing a Coastal Bluff after Hurricane Sandy, Northeast Shore and Beach Preservation Association Conference, Atlantic City, NJ, October 2022.

Gaffney, D.A., Quantifying Resilience for Adaptation of Coastal Structures – Going Beyond the Concepts, presented at the American Shore and Beach Preservation Association Annual Conference, New Orleans, LA, 2021

Russell P. Burke, Ph.D.

Onsite Technical Advisor

Russell Burke is the owner of, and **Chief Marine Scientist for, Biogenic Solutions Consulting, LLC (BSC)**. Russ has **23 years of experience** working as a marine biologist, and has been an **Environmental Biology Professor for the last 14 years**, including managing **oyster reef restoration/mitigation monitoring and/or construction grants/contracts (>\$1.5 million) for the U.S. Army Corps of Engineers and Virginia Port Authority** in five different Chesapeake Bay tributaries. As an **entrepreneurial Marine Science Consultant (2014-Present)**, Russ has managed **>\$1.8 million in contracts for BSC**.

Russ has fostered **innovation in the fields of native oyster reef restoration, living shorelines, and oyster nutrient credit program development**; he has served private homeowners and companies, large consulting firms, government agencies, and nonprofit organizations. His **leadership within the Chesapeake Bay scientific community** has galvanized the federal government's **long-term native oyster restoration goals, which were achieved in 2025**. His **extensive experimental testing and assessment of the effective use of alternative oyster and shoreline protection reef substrates** has informed the **Commonwealth of Virginia's regulatory and advisory agencies' policies and practices**. His work has also helped to **enable large-scale wetland protection within the Middle Peninsula Planning District Commission's (MPPDC) Fight-The-Flood (FTF) Program (of which BSC is a founding member)**. Russ works closely with many of the other active FTF companies, such as Atlantic Reefmaker, Getting It Done Company (GID), Native Shorelines, Natrx, Inc., Oyster Company of Virginia, and ReadyReef, Inc., including advisory service, teaming (on contracts, bids, and proposals), project management (installation, implementation, and supervision), and project monitoring. In many cases, Russ has partnered with **FTF companies**, including Earth Systems Management (ESM), Getting It Done Company, and J&R Coastal Marine Services (J&R), to coordinate **cost-effective responses to the coastal resilience needs of the rural, underserved communities in Virginia's Middle Peninsula**. **BSC shares an office with ESM, GID, and J&R at the HUB33 building in King and Queen County**.

Russ' project experience includes:

Hog Island Living Shoreline Restoration Project, Middle Peninsula Planning District Commission, National Fish and Wildlife Foundation, National Oceanic and Atmospheric Administration, Hog Island, York River, Gloucester County, VA. Project Team Lead. Led a multi-firm team (J&R, GID, Golden Oyster Marine Services, Natrx, Inc.) to transport and install concrete shoreline protection reefs offshore of Hog Island. Oversaw project planning, logistics, installation, and coordination with federal and local partners for habitat restoration and shoreline protection.



Total years of experience

23

Years with firm

12

Education

Ph.D. Marine Science, College of William and Mary, 2010

B.S. Marine Science and Environmental Science, Rider University, 2002

Professional Affiliations

Better Business Bureau, A+ Rating, Accredited Since 2017

Coastal Virginia Adaptation & Resilience Consortium (COVA), Member, 3 Years; Steering Committee Member, Elected in 2025

Middle Peninsula Planning District Commission's Fight-The-Flood Program, Founding Member, 5 Years

Virginia Interagency Native Oyster Team, Member, 20 Years

Publications

Biogenic Solutions Consulting, LLC, Innovation in the Use and

Russell P. Burke, Ph.D.

Onsite Technical Advisor

RISE Rural Coastal Community Resilience Challenge Grant – Whittaker Creek, Middle Peninsula Chesapeake Bay Planning Access Authority, RISE, Growth Opportunities Virginia (GOVA), Virginia Sea Grant, Whittaker Creek, Gloucester County, VA. Project Team Lead. Led a proof-of-concept demonstration project with ReadyReef, Inc., J&R, GID, GOMS, and additional technology partners. Coordinated beneficial reuse of dredged material, flocculation with biological and chemical polymers, and implementation of GeoTubes, ShoreSox, FlexaMat, EnviroLok Bags, and Concrete Buttress Reefs. Managed third-party scientific participation and engaged Virginia regulators and policymakers.

Hurst Neck Road Living Shoreline Project, ITMS, Inc., Native Shorelines, Virginia Department of Transportation (VDOT), Mathews County, VA. Onsite Project and Safety Supervisor (ITMS). Supervised installation of EnviroLok bags to stabilize an eroding shoreline along a VDOT-managed road. Coordinated with Native Shorelines and ensured project safety and compliance.

Glebe Point Shoreline Protection Project, Native Shorelines, MPPDC, Mathews County, VA. Remote Project Supervisor. Oversaw use of QuickReefs to stabilize shorelines, enhance oyster habitat, and support marsh grass plantings. Coordinated with J&R for reef transport and installation, and supported private landowner engagement.

Living Shoreline Project Construction in Urbanna Creek, Homeowners, Natrx, Inc., Middle Peninsula Planning District Commission, Urbanna Creek, Middlesex County, VA. Project Team Lead. Led a team (GID, J&R) to survey and install a living shoreline using Natrx reefs, sand backfill, and marsh grass plantings. Managed stakeholder coordination and construction logistics.

Monitoring and Reporting for the Hole in the Wall Dredging Project at Haven Beach, County of Mathews, VA, Haven Beach, Mathews County, VA. Project Lead. Led aerial drone imagery and mapping, beach profile surveys, and endangered tiger beetle surveys. Monitored beach nourishment and breakwater installation following navigational channel dredging.

Pay-For-Outcomes Nonpoint Source Nutrient Reduction Program, Oyster Company of Virginia, Severn River, Gloucester County, VA. Technical Expert / Oyster Reef Monitoring Lead. Provided technical expertise and monitoring services for a 57-acre oyster reef project, supporting nutrient reduction and habitat enhancement.

Broad Creek Federal Navigation Channel Sediment and Effluent Water Investigation, Seaward Marine Corporation, County of Middlesex, VA, Broad Creek, Middlesex County, VA. Project Designer and Team Lead. Designed and led sediment and water sampling plan, coordinated sample collection and analysis, and produced formal reporting for regulatory compliance.

Field Support for NSF Small Business Innovation Research Grant – Guinea Marsh Islands, Natrx, Inc., Guinea Marsh Islands, Gloucester County, VA. Field Support and Technical Advisor. Provided field and technical advisory support for survey and research activities on Guinea Marsh Islands, supporting innovation in coastal resilience.

Application of Dredge Materials RISE/GOVA/VA Sea Grant Project Final Report. Nov. 2024. 20 p

Biogenic Solutions Consulting, LLC, Broad Creek Federal Navigation Channel Sediment and Effluent Water Investigation. Middlesex County, Virginia. 2024. 22 p

Biogenic Solutions Consulting, LLC, Novel Application of Aragonite On and In Concrete Reefs to Enhance Eastern Oyster. Apr. 2022. 40 p

Biogenic Solutions Consulting, LLC, Epifaunal and Benthic Monitoring Survey, Parallel Thimble Shoal Tunnel Project. Dec. 2018. 82 p

Biogenic Solutions Consulting, LLC, Epifaunal Evaluation of the Parallel Thimble Shoal Tunnel Project, Chesapeake Tunnel Joint Venture (Permit No. 6311001). July 2017. 66 p



Janet Luce, PMP

Resiliency Lead

Janet Luce is a seasoned project manager with **34 years** of specialized experience in coastal and waterway management. Her expertise spans resiliency planning, emergency response and recovery, geographic information systems (GIS), regulatory permitting, public outreach, and grants administration. She has led projects for **the Florida Fish and Wildlife Conservation Commission (FWC) and the Florida Department of Environmental Protection (FDEP)**, where she also provided staff augmentation for the FDEP Resilient Florida Program. Janet has authored numerous research studies and guidance documents for state agencies and local governments and has played a key role in disaster response and **recovery efforts** for federally declared events, including hurricanes, flooding, wildfires, and the COVID-19 pandemic. She is highly proficient in Esri GIS applications and frequently leads stakeholder engagement initiatives through data-driven public outreach.

Janet's recent project experience includes:

Town of Bay Harbor Islands – Comprehensive Vulnerability Assessment; Bay Harbor Islands, FL. Currently participating in the development and execution of a Comprehensive Vulnerability Assessment (VA) for the Town of Bay Harbor Islands in accordance with Section 380.093, Florida Statutes, and the Resilient Florida Program's GIS Data Standards. The project aims to evaluate the town's critical assets and their exposure and sensitivity to current and future flood risks, including sea level rise, storm surge, tidal flooding, and rainfall-induced flooding.

Seminole County Comprehensive Vulnerability Assessment; Seminole County, FL. Currently contributing to the Seminole County Comprehensive Vulnerability Assessment, a multi-jurisdictional project funded by the Florida Department of Environmental Protection through the Resilient Florida Program. The assessment spans Seminole County and seven municipalities, evaluating the vulnerability of critical and regionally significant assets to sea level rise, storm surge, and compound flooding scenarios. Guiding the technical approach for coastal hazard modeling, supporting the development of exposure and sensitivity analyses, and ensuring alignment with Resilient Florida GIS data standards. Supporting stakeholder engagement through the project's steering committee and contributing to the integration of findings into Seminole County's Local Mitigation Strategy and Floodplain Management Plan Annex to inform long-term resilience planning.

Resilient Florida Grant Program, Florida Department of Environmental Protection, FL. Grant Manager providing grant administration and support to the Resilient Florida (RF) Grants Program. Funding allows local governments to analyze and plan for vulnerabilities related to flooding and sea level rise, as well as implement projects for adaptation and mitigation. Managed the grant agreements and project deliverable reviews for twenty-five Florida counties and Cities, per Section 380.093, Florida Statutes (F.S.). Janet has also provided application review for the Hurricane Restoration Reimbursement Grant Program for coastal residents impacted by Hurricanes Ian and Nicole.



Total years of experience

34

Years with firm

32

Education

B.S., Business Administration, State University of New York, 1986

Certifications

Project Management Professional (PMP) #4169503
FEMA Incident Command System (ICS100-800)
IS-00922.a Applications of GIS for Emergency Management
HSE GeoCONOPS for Planners and Decision Makers Certification
Esri – Designing Effective Risk Reduction Strategies with GIS
Esri – Effectively Communicate Risk to Enhance Resilience Using GIS
HazWoper Certification – OSHA 29 CFR 1910 and 1926.65
Certified Florida Master Naturalist – Coastal Systems (University of Florida, IFIS)
Self-Contained Underwater Breathing Apparatus (SCUBA) – Advanced, Rescue, Nitrox

Software

ArcGIS Pro, Online
Power BI
Smartsheet
Adobe InDesign, Illustrator, Photoshop

Janet Luce, PMP

Resiliency Lead

Florida Marine Debris Removal Guidelines, Florida Department of Environmental Protection, FL. Project Manager for the development of a best management practices guidance document that outlines the marine debris removal methods and techniques that are ecologically appropriate to assist land managers, local governments, and contractors in situations when marine debris removal is not related to a storm event. The guide is organized to provide best management practices based on both sensitive environmental habitats and specific debris removal techniques. In addition to the guidance document, AtkinsRéalis provided FDEP with several GIS resource links which enabled DEP's ability to create an interactive Marine Debris Removal Resource Map, currently available on the FDEP website.

Microsoft (Word, Excel, Access, Power Point, Visio, Project, SharePoint, Teams)

Management of Boating and Waterway Projects and Programs, Florida Fish and Wildlife Conservation Commission (FWC), FL. Project Manager. Under a continuing program management contract in place since 2005, Janet has managed waterway marker projects in several Florida counties to more adequately post boating safety and manatee zones in state waters, developed a geospatial waterway marker asset management system, developed vessel traffic studies, served as first-line responder for the Commission's marker on-call response and emergency response programs, managed a program to eradicate derelict vessels in state waterways, secured a grant from the Florida Department of Environmental Protection State Coastal Management Program for an at-risk vessel monitoring program, and conducted several outreach and education programs for FWC.

Adaptation Planning Guidebook, Florida Department of Environmental Protection, Florida Coastal Office, FL. Researcher/writer. Assisted with the development of a guidebook for government planners in cities and counties, providing the framework to prepare for and deal with the effects of sea level rise, especially coastal flooding, erosion, and ecosystem changes, based on current Florida laws, requirements, and recommendations.

Coastal Resource Assessments, Canaveral Port Authority, Port Canaveral, FL. Under a continuing services contract for waterside engineering, provided habitat and resource assessments and environmental impact analysis in the proposed Port Canaveral expansion areas. To determine the extent and nature of the possible impacts, possible minimization of impacts, and the amount of mitigation required to compensate for unavoidable impacts, mapping of seagrass and coastal shoreline habitats and a quantitative assessment of those habitats was needed. Assisted with the data collection, data analysis, and mitigation alternatives.

NOAA Coastal Zone Management Act Section 309 Program Assessments (2019), Florida Department of Environmental Protection, FL. Coastal Associate. Conducted self-assessments of Florida's nine federally approved enhancement areas - wetlands, coastal hazards, public access, marine debris, cumulative and secondary impacts, special area management plans, ocean and Great Lakes resources, energy and government facility siting, and aquaculture.



Justin Bartusek, PE

Lead Dredging Designer

Justin Bartusek is a coastal engineer who is established in the dredging service area of the Atkins Ports and Coastal Practice Section. Justin is a PE who graduated from University of Florida with a Master of Science in Coastal Engineering. He has 4 years of experience with an emphasis focused in the dredging industry. Experience includes navigation and beneficial use **dredging, marsh restoration, disposal and placement operations, permitting assistance, environmental impact factors** and **performing weekly field work**. Justin continues to look for new ways to expand his knowledge and experiences within the engineering and dredging industry. He provides new and insightful ideals and techniques that have created unique solutions which have greatly benefited projects as well as the client.

Justin's additional coastal engineering experience involves Revetment design, Federal Emergency Management Agency Flood Hazard Analysis, Federal Emergency Management Agency Emergency Response, grant and project proposals, Florida Fish and Wildlife Conservation Commission navigation hazard assistance, conducting inspections, compiling reports, and formulating data.

Justin's project experience includes:

Little River Maintenance Dredging and BU Project, Port Mahon, DE. Dredging engineer and project manager for the dredging design and placement of 75,000 cubic yard of material. The project's goal is to restore navigation of the Little River channel to the Delaware Bay while beneficially using the material to restore degraded wetlands and create nesting habitats for the endangered saltmarsh sparrow through thin layer placement techniques. Challenges include handling PFAS-contaminated material, addressing health impacts to marine species and humans, obtaining necessary permits, and managing long transport distances between dredge and placement sites. Currently, the project is in the data collection stage to better understand its limitations. Justin's tasks include managing staff from multiple disciplines, overseeing sub-contractors, and supervising data collection and analysis efforts.

Feasibility Study of Dredging the Inlet of Lake Lotus, City of Altamonte Springs, FL. Lead dredge engineer for the feasibility study of dredging the confluence are of the Little Wekiva River and Lake Lotus. Project included the data collection of geotechnical, environmental, and topographic data of the project site. Alternatives were generated and analyzed based on the client's desired conditions. Additional enhancements included streambank analysis to reduce sediment transport, reconnection to adjacent closed-off wetlands, and providing additional access to Lake Lotus. Project challenges included managing a small dredge quantity, site accessibility, and the removal of mature trees and vegetation established within the dredge template.

FDEP GEC Services, FL. An augmented staff member for the Florida Department of Environmental Protection (FDEP) as a Grant Reviewer for the American Rescue



Total years of experience

11

Years with firm

10

Education

B.S., Civil Engineering, University of Central Florida, 2014

M.S., Coastal Engineering, University of Florida, 2015

Registrations/licenses

Professional Engineer
Delaware 26542, 2021
Florida 88808, 2020
Texas 134021, 2019

Certifications

Open Water Diver Certification (PADI), #802016V2776270858569-US, 2010

Professional affiliations

Coasts, Oceans, Ports, and Rivers Institute
Western Dredging Association
American Society of Civil Engineers
American Shore and Beach Preservation Association
American Society of Civil Engineers
American Shore and Beach Preservation Association

Justin Bartusek, PE

Lead Dredging Designer

Plan Act grant funding. In this role, Justin managed over \$19 million in grants aimed at improving water quality within the Central Florida east coast region. Responsibilities included reviewing and amending grant contracts to ensure compliance and alignment with project goals, coordinated closely with grantees to facilitate smooth communication and project execution. Additionally, he reviewed deliverables and pay applications to ensure that all project milestones were met and funds were appropriately allocated. This role required a keen eye for detail, strong organizational skills, and the ability to manage multiple projects simultaneously.

Software

CHAMPS
WHAFIS
Matlab
MathCAD
AutoCAD
ARCMAP
ACES

Indian River Lagoon Dredging – Eau Gallie Project, Brevard County, FL.

Engineer of Record for the design and removal of contaminated muck within the Indian River Lagoon in Melbourne, Florida. Project challenges include handling high levels of constituents of concerns, long transportation distance between dredge and dewatering locations, and determining final placement areas for nutrient rich muck. The project involves dredging approximately 225,000 cubic yards of muck material from the open water segments of the lagoon. Justin provides oversight as the lead to field engineers who conduct daily inspections of the dredge material management area and dredging operations. Justin ensures DEP permit compliance for mitigating upland and submerged environmental impacts and performs quality control on progress and acceptance surveys for project payment purposes. This project is part of the Indian River Lagoon restoration effort, which aims to remove an estimated 1.5 million cubic yards of muck to conserve the lagoon.

South Ponte Verde Beach Nourishment Project, St. Johns County, FL.

Engineer of Record for the nourishment design of 5.2 miles of beach with approximately 778,000 cubic yards of beach quality sand. Sediment was collected and transported from an offshore sand source utilizing a trailing suction hopper dredge. Over sought the development of technical specifications and drawings. Conducted equilibrium profile analysis of the design beach template. Conducted a compatibility analysis of the borrow source sediment to with the native sediment.

Murderkill River Maintenance Dredging Project, Murderkill, DE. A project for the Delaware Natural Resources and Environmental Control agency of the state of Delaware. Engineer of record for the dredge design of 51,566 cubic yards maintenance dredge material from the Murderkill River Federal Channel. Material suitable for beach placement is permitted to nourishment 11,000 feet of South Bowers Beach. Unsuitable beach material is designed to be placed at a permitted offshore placement area. Tasks include overseeing the development of technical specifications and drawings. Conducted a compatibility analysis of the borrow source sediment to with the native sediment. Project challenges include working within environmental windows and short deadline deliverable.

Palm Beach Midtown Beach Restoration Dredge Support Services, Palm Beach, FL.

Conducted in-water dive inspections delineating hardbottom resources in the allowance of dredge pipeline placement. Work entailed diving designated pipeline corridor and access corridors for hardbottom resources. Hardbottom was delineated and provided to the dredge contractor to navigate safely to and from beach nourishment project site.

Michael Salisbury, PE, BC.CE

Numerical Modeling Lead

Michael Salisbury has served as a technical lead supporting both public and private clients throughout the United States and abroad. He has 19 years of experience working on coastal-related projects including expertise in developing numerical models for coastal flood hazards, flood risk assessment, floodplain mapping, beach morphology analyses, and marine structure design.

Mike's project experience includes:

California Open Pacific Coast Coastal Analysis Tool Application, Federal Emergency Management Agency Region IX. Mr. Salisbury was the Project manager and lead coastal engineer responsible for developing and applying a Matlab-based tool that calculates nearshore hydraulics (wave setup and runup) for all counties along the California Open Pacific Coast (OPC), including Los Angeles County. Tasks included script development, data analysis and management, coastal wave setup and runup calculations, and report documentation. Once the tool was developed and tested, it was expanded to analyze over 1,100 transects along the California Coast to produce supporting flood risk data for coastal counties.

Coastal Probabilistic Flood Risk Assessment Demonstration for Los Angeles County, CA. Federal Emergency Management Agency (FEMA) is currently undergoing an evaluation of existing data and analysis methods to expand their coastal flood risk data for coastal areas of the United States as part of the Future of Flood Risk Data (FFRD) initiative. AtkinsRéalis (as part of the STARR II Joint Venture) was tasked with evaluating methods for producing graduated coastal probabilistic flood risk data for Los Angeles County as a test case. Mr. Salisbury served as a coastal engineer for this task and was responsible for performing a pilot study that evaluated various methods to model wave setup, runup, and erosion for various storm event along the Pacific Coast.

Guam and Commonwealth of Northern Mariana Islands Coastal Flood Insurance Study, FEMA Region IX. Technical lead responsible for the development and application of a high-resolution storm surge and wave model in support of an updated coastal flood insurance study for Guam and the Commonwealth of Northern Mariana Islands. Tasks include: model development, model calibration and validation, production simulations, and reporting and presentations. Results of the modeling study will be used to drive the nearshore hydraulics analysis and floodplain mapping of the islands in order to produce revised flood insurance rate maps.

Clatsop County, Oregon Coastal Flood Insurance Study, FEMA Region X. Technical lead responsible for the development and application of a high-resolution wave model in support of an updated coastal flood insurance study for Clatsop County, Oregon in the Mouth of the Columbia River Estuary. Tasks include: model development, model calibration and validation, production simulations, and reporting and presentations. Results of the modeling study will be used to drive the nearshore hydraulics analysis and floodplain mapping of the islands in order to produce revised flood insurance rate maps.

Naval Air Station Jacksonville Shore Protection Design, NAVFAC, Jacksonville, FL. As part of a design-build project, teamed with DAWSON and



Total years of experience

19

Years with firm

12

Education

M.S., Civil Engineering,
University of Central Florida,
2005

B.S., Civil Engineering,
University of Central Florida,
2003

Registrations/licenses

Professional Engineer
Florida 70628, 2010
Louisiana 40042, 2015
North Carolina 044262, 2016
Texas 137935, 2020
Alabama 55222, 2025
Georgia 53428, 2025
Mississippi 35885, 2025

Certifications

Board Certified Coastal Engineer,
ASCE Academy of Coastal,
Ocean, Port, Navigation
Engineers, 2022

Texas Department of
Transportation pre-certification
for Coastal Hydraulic Design
(10.6.1), Employee Sequence
Number 000031393

Michael Salisbury, PE, BC.CE

Numerical Modeling Lead

Zapata, Atkins is leading the design portion of shore protection project for five shoreline segments (total length approximately 3,200 ft) along the Naval Air Station Jacksonville. Mr. Salisbury is the Project Manager for the Atkins design team responsible for successfully delivering the final design ready for construction. Tasks include coastal analysis, stone sizing and revetment design, permitting, and project coordination.

Blount Island Marine Corps Support Facility Shoreline Stabilization, NAVFAC, Jacksonville, FL. As part of a design-build project, teamed with DAWSON and Zapata, Atkins is leading the design portion of shore protection project for Areas 2 and 3 (total length approximately 3,000 ft) along the Blount Island Marine Corps Support Facility in Jacksonville. Mr. Salisbury is the Project Manager for the Atkins design team responsible for successfully delivering the final design ready for construction. Tasks include coastal analysis, seawall design, scour protection design, permitting, and project coordination.

Sargent Beach Segmented Breakwater Study, Matagorda County and Texas General Land Office, Sargent, TX. Lead engineer responsible for identifying a structural solution to reduce erosion and retain sand along Sargent Beach near Mitchell's Cut. Sargent Beach is experiencing some of the highest erosion rates in Texas and a solution needs to be identified before the barrier island is breached, negatively impacting the navigability of the Gulf Intracoastal Waterway. Tasks included applying a high resolution 2D sediment transport model (CMS-FLOW/WAVE) and a long-term shoreline change model (GenCade) to evaluate and optimize an effective structural solution (breakwaters and/or groins) to achieve the project goals. In the end, a combination of offshore segmented breakwaters and an angled terminal groin at the inlet was selected as the best solution for this segment of Sargent Beach.

Engineering Assessment of Shore Protection Features, Galveston County Coastal Impact Assistance Program, Galveston County, TX. Technical lead responsible for modeling sediment transport along Galveston County beaches. The County has had historical issues with beach erosion, so this project evaluated structural alternatives to mitigate these impacts in the future. A unique aspect to this project involved the coupling of a large-scale, ocean-based numerical model (ADCIRC+SWAN) to a very high resolution, state-of-the-art beach morphology and sediment transport model (XBEACH) in order to properly represent the physics of coastal flow in the area of interest.

Tee Harbor Coastal Analysis and Mapping, Federal Emergency Management Agency Region X, Juneau, AK. Technical lead responsible for developing a storm surge and wave model for Tee Harbor and adjacent channels to support FEMA's effort to update coastal flood maps in the southeastern Alaska region. Tasks include model development, validation, production simulations, statistical analysis, and reporting. Over 200 historical events were chosen for simulation and results will be incorporated into a statistical analysis to determine the base flood elevations to support the flood map revision process.

Honorary appointments

Adjunct Instructor, Fluid Mechanics, University of Central Florida, Summer 2007 – Summer 2012

Adjunct Instructor, Hydrology, University of Central Florida, Spring 2008 – Summer 2011

Professional affiliations

American Society of Civil Engineers, Member, 2006-present

Coasts, Oceans, Ports, and Rivers Institute (COPRI), Member, 2006-present

COPRI's Coastal Engineering Sciences Committee, Chair, 2012-2020

COPRI's Coastal Engineering Sciences, Member, 2010-present

Software

ADCIRC, SMS, Python, Fortran, Matlab, ArcGIS, STWAVE, SLOSH, SWAN, SWASH, Delft3D, XBeach, CMS-FLOW/WAVE



Leslie Manzello

Regulatory and Permitting Lead

Leslie Manzello has 20 years of experience in environmental sciences. She has worked on a wide variety of projects and her areas of expertise include environmental permitting, marine benthic assessments, environmental assessments, and technical writing. Leslie has a firm grasp on environmental rules and regulations on the local, state, and federal level and is able to identify the best permitting pathways/mechanisms to obtain regulatory authorizations as quickly as possible. Over the years, she has built strong relationships with agency personnel. Through direct and frequent coordination with the agencies, she is able to keep projects moving forward, with the goal of avoiding or minimizing any requests for additional information which can lengthen the permitting process. If impacts to natural resources are unavoidable, she also has ample experience in formulating mitigation plans.

Leslie's AtkinsRéalis project experience includes:

Little River Maintenance Dredging and Beneficial Use Project, Delaware Department of Natural Resources and Environmental Control (DNREC), Kent County, DE. AtkinsRéalis was contracted by Delaware DNREC to design, prepare, and process permit applications for the maintenance dredging of the Little River and the subsequent placement of the dredged material within Port Mahon to improve degraded wetlands. She is the environmental lead for the project and assisted with data collection efforts including the creation of a project geodatabase with publicly available GIS data as well as data obtained directly from state and federal agencies. Data collection efforts also included the development of the environmental site assessment plan which identifies the sampling locations where the current condition of the Port Mahon wetlands will be evaluated using the Mid-Atlantic Tidal Wetland Rapid Assessment Method. This data will be integral in finalizing the conceptual design of the beneficial use site with AtkinsRéalis' coastal engineers and will be used as supporting documentation with the environmental permit applications to DNREC and the U.S. Army Corps of Engineers (USACE). She has attended several agency meetings including a pre-application meeting with the various divisions of DNREC and the USACE to discuss permit requirements and construction windows which will minimize any requests for additional information during the permitting process and ensure no surprises for construction and the overall project schedule. As the environmental lead for this project, She will prepare the permit applications to DNREC and the USACE and assist with public information meetings and actively engage with the community to discuss the project's objectives and impacts.

MCSF Blount Island Shoreline Stabilization Project, Naval Facilities Engineering Systems Command – Jacksonville, FL. AtkinsRealis was contracted to provide coastal design and engineering services as well as environmental permitting for a shoreline stabilization project at Blount Island in Jacksonville, Florida. Ms. Manzello was an environmental permitting lead for the project and obtained the necessary permits from the Florida Department of Environmental Protection and U.S. Army Corps of Engineers. The permitting process with the Florida Department of Environmental Protection involved coordination with the Division of State Lands. By working with AtkinsRealis' coastal design and engineering team, the project design was revised such that submerged lands



Total years of experience

20

Years with firm

20

Education

B.S., Marine Science, University of Miami, 2005

Certifications

American Academy of Underwater Sciences (AAUS) Scientific Diving Certification, 2005
SCUBA Schools International (SSI) Open Water Diving Certification, 1996
CPR Administration, 2022
O2 Administration-certified, 2022
National Association of Underwater Instructors (NAUI) Nitrox Certification, 2005
PADI Advanced Open Water Diver, 2012
PADI Rescue Diver, 2012

Leslie Manzello

Regulatory and Permitting Lead

authorization from the Trustees of the Internal Improvement Trust Fund would not be required. The permitting process with the U.S. Army Corps of Engineers involved informal consultation with the U.S. Fish and Wildlife Service and the National Marine Fisheries Service. The U.S. Fish and Wildlife Service raised concerns about impacts to manatees. Ms. Manzello was able to work with AtkinsRealis' coastal design and engineering team to modify the sheet pile wall design so that water flow would continue beyond the wall into the wetland behind it but prevent the entry or entrapment of manatees. Ms. Manzello was also the lead on the "Request for Initiation of Expedited Informal Consultation under Section 7 of the Endangered Species Act" with the National Marine Fisheries Service for the project.

NAS JAX Main Base Shoreline Stabilization Project, Naval Facilities

Engineering Systems Command - Jacksonville, FL. AtkinsRealis was contracted to provide coastal design and engineering services as well as environmental permitting for a shoreline stabilization project at the Naval Air Station in Jacksonville, Florida. Ms. Manzello is the environmental permitting lead for the project and is using her knowledge of state and federal regulations to work with the AtkinsRealis' design and engineering team to minimize impacts and expedite environmental permitting for this emergency project. She is responsible for submitting permit applications to the St. John's River Water Management District and the U.S. Army Corps of Engineers and will serve as the main point of contact for any required consultation with the U.S. Fish and Wildlife Service given the proposed listing of the tri-colored bat. She is also assisting with stormwater permitting for the project with the St. John's River Water Management District (ERP) and the Florida Department of Environmental Protection (NPDES Notice of Intent).

St. Lucie Inlet Services, Martin County, FL. AtkinsRealis was awarded a contract with Martin County for maintenance of the St. Lucie Inlet, a federally maintained inlet located in northeast Martin County between Hutchinson Island to the north and Jupiter Island to the south. AtkinsRealis' role was to assist Martin County with all local sponsor responsibilities including agency coordination with USACE, construction management of structural improvements, bathymetric surveys (yearly), and biological monitoring associated with beach placement of beach quality sand on downdrift beaches. She participated in the annual biological monitoring of established transects in Martin County to determine the effects of beach sand placement on the nearshore benthic communities. In addition to completing the surveys, Ms. Manzello's responsibilities also included lead data analyst and author of reports. She provided research and technical writing services for the St. Lucie Inlet Alternatives Analysis project. The project included a high level, planning analysis of proposed alternatives for inlet management and provided information to the St. Lucie Inlet Advisory Committee to make informed decisions and recommendations to the Martin County Board of County Commissioners. Ms. Manzello's project responsibilities included the comparison of permitting requirements and potential environmental impacts for the status quo (current dredging alignment and schedule at St. Lucie Inlet) versus nine proposed alternatives.



Jonathan Rakowski

Environmental Scientist

Jonathan Rakowski is an environmental scientist with 9 years of experience specializing in water resources management. He is skilled in using ESRI's ArcGIS desktop and is knowledgeable in water law, policy, and management concepts. Additionally, Jonathan has experience with designing using Autodesk's AutoCAD and programming in Python.

Jonathan's project experience includes:

National Wetland Inventory Status and Trends, U.S. Fish & Wildlife Service, Madison, WI. Scientist responsible for reviewing and digitizing changes to wetland classifications. This task order involves identifying and mapping wetland change using current digital imagery and ancillary datasets provided or identified by the U.S. Fish & Wildlife Service in an ESRI ArcGIS desktop environment.

Wetland Ecology Graduate Assistant, Indiana University Bloomington, Bloomington, IN. Educated groups of students about plant identification techniques including common and scientific names; advised students with lab reports including assistance with map creation using ESRI's ArcGIS software; and facilitated class labs to promote an understanding of wetland assessment and delineation exercises.

Limnology & Stream Ecology Graduate Assistant, Indiana University Bloomington, Bloomington, IN. Supported with organizing class labs including lake and stream samplings for physical and biogeochemical characteristics; analyzed chlorophyll concentrations using a spectrophotometer; and assisted students with lab analytical techniques and assignments including water quality metrics.

Water Quality Intern, Indiana Department of Environmental Management, Indianapolis, IN. Measured water quality parameters including conductivity, pH, and dissolved oxygen; processed and gathered field samples to test for heavy metals, alkalinity, and arsenic speciation; and scheduled and planned weekly site visits for the Ground Water Monitoring Network samplings.

Geographic Information Systems Intern, Baltimore City Recreation & Parks, Baltimore, MD. Created, translated, and digitized new data features using a variety of software; collected and organized spatial and attribute data from park field visits; and updated and enhanced geodatabase information to ensure accuracy and efficiency.

Environmental Educator, Navitat Canopy Adventures, Barnardsville, NC. Educated groups of guests on the resources of the local environment; trained new guides on course operating procedures including high-angle rescues.



Total years of experience

9

Years with firm

6

Education

M.S., Environmental Science, Indiana University, 2018

M.P.A., Indiana University, 2018

B.S., Environmental Science, University of North Carolina Wilmington, 2009



Raymond Donn

Field Operation Manager

Raymond Donn is an owner and operator of J&R Coastal Marine Services. A retired United States Navy Chief Petty Officer who brings over 35 years of subject matter expertise to multiple fields as maintenance manager, hazardous materials/hazardous waste management and security. After retiring from the U.S. Navy, Raymond spent 4+ years at Kinder Morgan Inc. as a Liquids Terminal operations manager, worked as an armory supervisor and ordnance equipment mechanic at the Yorktown Weapons Station (3 years), and is presently an Ammunition Administrator and Manager at Naval Station Norfolk. He has completed the OSHA hazardous waste operations and emergency response 40-hr course, ICS 300. He has provided supervision, instruction, and maintenance of fire suppression systems, both fixed and portable, and maintenance on electronic, hydraulic, and electrical systems. His diving experience has become invaluable in reef sampling and deployment. As a team member he has been the lead scientific diver for all contracts involving SCUBA diving and served as a consultant for nearly all of Biogenic Solutions Consulting's (BSC) in-water work.

Raymond's work has also helped to enable both large- and small-scale wetland protection within the MPPDC's Fight-The-Flood (FTF) Program. He works closely with many of the other active FTF companies, such as BSC, Atlantic Reefmaker, Getting It Done Company (GID), Native Shorelines, Natrx, Inc., and ReadyReef, Inc., including advisory service, teaming (on contracts, bids, and proposals), project management (installation, implementation, and supervision), and project monitoring. J&R Coastal Marine Services shares an office with BSC, Earth Systems Management (ESM), and GID, at the HUB33 building in King and Queen County.

Raymond's project experience includes:

Shoreline Protection Project in the James River.

J&R is working with BSC, GID, and the Virginia Ecological Solutions Foundation in the surveying of a James River shoreline to assist with the design of a major shoreline protection project. Duration: 2025-Present.

Glebe Point Shoreline Protection.

In coordination with BSC, J&R transported and Installed 250 linear feet of Native Shoreline's concrete "Quick Reefs" for subsequent backfilling with sand and planting with marsh grass to create a living shoreline. 2025.

Living Shoreline Project Construction in Urbanna Creek.

Collaborative Project with Homeowners, Natrx, Inc. and the MPPDC. Assisted Dr. Burke in surveying an eroding shoreline in Urbanna Creek (Middlesex County, VA) and, subsequently, installing a living shoreline comprised of Natrx reefs, sand backfill, and marsh grass plug plantings. 2024.

Living Shoreline Project Permit-Related Services in Urbanna Creek.

Collaborated with a team (BSC, GID, and Natrx) to survey a large property experiencing shoreline erosion in Urbanna Creek (Middlesex County, VA). 2024.



Total years of experience

35

Years with firm

10

Military

US Navy Chief 1990-2014

Professional License & Certification

SSI Open Water SCUBA Diver
SSI Dive Control Specialist
SSI Stress & Rescue

Professional Affiliations

Coastal Virginia Adaptation & Resilience Consortium (COVA), Member

Middle Peninsula Planning District Commission's Fight-The-Flood Program, Member

Raymond Donn

Field Operation Manager

Broad Creek Federal Navigation Channel Sediment and Effluent Water Investigation. Seaward Marine Corporation and the County of Middlesex. Provided divers to assist BSC in collecting core sediment and effluent water samples from the Broad Creek Federal Navigation Channel. 2024.

James River Living Shoreline Cost Share Program in the Warwick River.

James River Association.

With planning assistance from BSC, J&R transported and installed Allied Concrete's "Oyster Castles." J&R then transported and installed sand backfill and planted marsh grass to rebuild eroded shoreline at a private residence on the Warwick River. 2023.

Hog Island Living Shoreline Restoration Project in the York River. Middle Peninsula Planning District Commission, National Fish and Wildlife Foundation, and National Oceanic and Atmospheric Administration.

J&R provided project management, implementation, and supervision for BSC, in coordination with GID and Golden Oyster Marine Services (GOMS), during installation of Natrx's concrete shoreline protection reefs just offshore of Hog Island (Gloucester County, VA). Duration: 2023-2024.

RISE Rural Coastal Community Resilience Challenge Grant in Whittaker Creek, VA. Middle Peninsula Chesapeake Bay Planning Access Authority, RISE, Growth Opportunities Virginia (GOVA) and Virginia Sea Grant.

J&R participated in a large collaboration led by BSC and ReadyReef, Inc., in coordination with GID, GOMS, and others, rebuilding the marsh on the banks of Whittaker Creek using various products as a proof-of-concept project, fostering scientific participation from George Mason University and Old Dominion University as well as attention from the Commonwealth of Virginia. Duration: 2022-2024.

Underwater Sediment Sampling along the Chesapeake Bay Bridge-Tunnel.

Provided BSC divers and dive plans for collecting biological and sediment samples relative to the planned expansion of the Chesapeake Bay Bridge-Tunnel. 2018.

Elizabeth River Oyster Reef Restoration.

J&R, under a state contract to GID, manages and supervises the annual collection of samples of multiple alternative substrate oyster reefs in the Western and Southern branches of the Elizabeth River, as well as at the confluence with the Lafayette River, for laboratory processing by university partners. Duration: 2015-Present



Joseph (Joe) Betit

LIDAR and Survey Specialist

Joseph Betit is the founder and CEO of Earth Systems Management, LLC (ESM). Joseph has 50 years of experience working as a land surveyor (Geomatics Engineer), and has been a leader in his field for decades.

He began his career as a Land Surveyor In Training in 1972. By 1982, he was a registered California Professional Land Surveyor and founded a land surveying consultancy in Monterey Peninsula, CA. For the next ten years, he supervised construction layout, land development, aerial mapping, military base closure environmental support surveys, and conventional and GPS survey control networks. Notable projects were the Monterey Industrial Park, the Carmel Valley Country Club Lodge, the Monterra Ranch Subdivision (3,000 ac) survey control system, boundary determination and aerial mapping and complex surveys for military base closure studies on Ft. Ord, Ft. Hunter-Liggett, Presidio Monterey and the San Francisco Hunter Point Naval Shipyard.

From 1993-1996, Joseph founded and was the Executive Director of the *Geomatics Center* within the Dept. of Civil Engineering, Geomatics, and Construction Management at California State University in Fresno, CA. At this center he managed and marketed geospatial pilot projects and research services to CA State Agencies. The center was created as a self-funded (via city and state grants) University Geospatial Data Fusion Center that employed six student workers – this experience was pivotal in the development of Joseph's passion and commitment to support education and work force development.

Then, from 1996-2002, Joseph became the Surveying Program Coordinator at Old Dominion University's School of Engineering. It was in this position, and as ODU's Director of OSCI (VA State Office of Spatial and Cartographic Information) that he pioneered the development of the first ABET-accredited engineering surveying distance learning program. These courses were delivered to geographically dispersed students in Virginia, North Carolina, Arizona and Washington states. In addition to his teaching and program coordination roles, he created and managed OSCI, the Virginia applied research geospatial and cartographic information center.

After a year (2003-2004) serving as graduate teaching assistant of Systems Engineering within the University of Virginia's Systems Engineering Graduate Program in Charlottesville, VA, Joseph joined the Survey Department of Davis, Bowen & Friedel in Salisbury, MD, as a Designer responsible for Land Surveys, where, from 2004 to 2006, he carried out complex land boundary title research, resolutions and parcel mergers in support of land development engineering design in Maryland and Delaware.

Joseph was Senior Land Surveyor for two years (2006-2008) at Dewberry, LLC, in Fairfax, VA. The company purchased \$1,500,00 of Trimble GPS equipment and he trained 10 offices in the use of this equipment. He also coordinated with KeyNet to start their Trimble internet RTK system which incorporated Dewberry base stations.



Total years of experience

50

Years with firm

5

Education

M.Sc. International Finance, United Kingdom and France, University of Westminster, London, CERAM (now SKEMA), Nice, France, 2003

B.S. Surveying & Photogrammetry (now Geomatics Engineering), California State University, Fresno, Fresno, CA, 1981

AAS Civil Engineering, Monterey Peninsula Junior College, Monterey, CA, 1975

Professional Affiliations

California Professional Land Surveyor # 5083 since 1982

California Land Surveyor Association, Life Member, Past President

Coastal Virginia Adaptation & Resilience Consortium (COVA), Member, 2 Years

MPPDC's Fight-The-Flood Program, 5 Years

Publications

American Society for Engineering Education Annual Conference & Exposition, 2001, "Global Engineering in an Interconnected World: An Upper Division General

Joseph Betit

LIDAR & Survey Specialist

Joseph served as Survey Manager for Bechtel from 2008 to 2012, overseeing technology integration, managing a 45-member survey team, and coordinating various subcontractors for the Dulles Metrorail Project Phase 1. From 2012 to 2015, he became Bechtel's Corporate Manager of Survey and Innovation, supporting global construction projects across multiple industries, advancing technology adoption, and auditing survey processes. Notably, he introduced aerial drones to Bechtel in 2013 via an FAA 333 application. After retiring in 2015, he continued as a Bechtel Survey Technical Specialist consultant on domestic and international projects until 2019.

After retirement, he joined the A-NPDC EDC Entrepreneurial and Work Force Development program planning, and helped procure Go Virginia Enhanced Capacity Building (ECB) Planning Grant to (1) create coworker space and entrepreneur support programs in Exmore, VA, (2) conduct a market analysis of Virginia's Eastern Shore, and (3) develop a business plan for sustainable private sector expansion of facilities on the rural Eastern Shore of Virginia (ESVA). Joseph is also Chair of the Accomack-Northampton Planning District Commission Economic Development Committee; these are the two rural counties that comprise VA's Eastern Shore.

Joseph's second GO VA ECB innovation grant for the ESVA resulted in his founding Earth Systems Management, LLC. ESM develops near shore shallow water autonomous surface hydro drone mapping systems. These innovative systems are designed, built and operated by college and high school student interns. ESM develops local young geospatial professionals and creates rural economic entrepreneurial opportunities based on advanced technologies ideally suited to the complex Shore land/water environment, and is also a member of the MPPDC's FTF Program.

Joseph works closely with many of the other active FTF companies, including BSC, Getting It Done Company (GID), ReadyReef, Inc., and Seaward Marine Corporation, including drone imagery, orthophoto production, and project mapping. ESM has joined the team of BSC, Getting It Done Company, and J&R Coastal Marine Services (J&R) and currently shares an office with these strategic FTF partners at the HUB33 building in King and Queen County.

Joseph's project experience includes:

Monitoring and Reporting for the Hole in the Wall Dredging Project at Haven Beach. County of Mathews (VA). Joseph conducts aerial drone imagery and mapping along Haven Beach (Mathews County, VA), where dredged sand from the Hole-In-The-Wall navigational channel dredging project was pumped, and additional granite boulder breakwaters were installed.

Chesapeake Beach Nourishment Project Monitoring, Virginia Beach, VA. Seaward Marine Corporation. ESM, in coordination with BSC, conducted aerial imagery and mapping of Chesapeake Beach (Virginia Beach, VA), where dredged sand from offshore was pumped onto the beach.

Education Cluster at Old Dominion University", Sushil Chaturvedi, Gary Crossman, William Swart, Joseph Betit

ESRI User Conference, 2010, Special Achievements in GIS Award, "Survey Work Request System" (global project access, 24/7 automated system), Bechtel, Dulles Metrorail Extension, Virginia

Bechtel Technical Grant Award, 2011, "Instrument and Monitoring Management and Reporting System for Transportation and Urban Projects.", Dulles Transit Partners, JB Seo, Eric Moorehead, Lloyd Young, David Tang, and Joe Betit

Bechtel Technical Grant Award, 2012, "A Distributed Architecture for a GIS-Based Survey Work Request (SWR) Spatial Management System", Dulles Transit Partners, Joe Betit, Tracy J. McLane, Yongmin Yan, Misha Nikulin

ESRI MUG 2012 Conference Paper, "Integration of GIS and Survey", Dulles Transit Partners, Yongmin Yan, Tracy J. McLane, Joe Betit

Bechtel Technical Grant Award, 2013, "Development of a Web Mapping Application Template Using Open Source GIS Technologies for Rapid and Low Cost Spatial Data Deployment", Dulles Transit Partners, Yongmin Yan, Tracy J. McLane, Misha Nikulin, Joe Betit

Civil Engineering Surveyor, 2018, UK, "Advances in Seamless DTM Integration for Near-shore Surveys"

Eastern Shore Post, 2021, "Young Team's Hydro Drone Project Promising for Future Unmanned Collection of Water, Waterways Data"

LIDAR News, 2021, "College Students Take Second Place with HydroDrone", Philip E. and Carole R. Ratcliffe Foundation Shore Hatchery entrepreneurship competition



Matthew (Matt) Cusack, PWS, PMP

Spatial Analysis Lead

Matt Cusack has 27 years of experience in project management and technical performance associated with environmental consulting. Matt's project history demonstrates the strengths he can bring to his clients and their project needs. He has supported and overseen multiple environmental permits ranging from large-scale individual permits for the William States Lee Nuclear Power Station to smaller, more nuanced coastal permitting for an innovative floodwater storage system for a small coastal community in North Carolina. Matt's ability to work with diverse local and Federal regulatory agencies has been recognized by two separate awards (FHWA 2011 Award for Environmental Excellence and U.S. Army Corps of Engineers (USACE) Commander's Award for Public Service in 2009), which were given for working on complex inter-agency teams in developing a rapid functional assessment for wetlands. Mr. Cusack focuses on keeping projects on schedule, and succeeds through building relationships and partnerships with the agencies that provide tangible benefits to the project and to his client's future endeavors.

Matt's project experience includes:

MS4 Audit and Field Inspection Survey123 (FDEP). Lead Technical Professional. Led the stakeholder engagement to requirement documentation for multiple survey designs in support of the Phase I and Phase II MS4 audit and inspection workflows. The field form was developed from existing feature service layers, database information, and a custom basemap. The functionality was identified with feedback and requirements obtained during the coordination. The primary capabilities included recording GPS points, taking photos, lookup lists with autocomplete functionality that can manage large lists, conditional calculations, prompting answers based on previous inputs (relevant questions), auto-lookup of the GPS point or address, tabbed navigation through sections, storing incomplete forms as "drafts" for later editing and working offline. Completed surveys were designed to be output into client files through custom feature report templates.

Gum Swamp SEFA Hydrologic Transect Survey123 Design (SWFWMD). Lead Survey123 Designer. Developed digital data collection in Survey123 for the Southwest Florida Water Management District. The objective was to collect data using a field workflow for stream morphology transects using a Laser Technology Institute (LTI) laser rangefinder workflow. The survey design includes recording horizontal intervals, transect heights for later conversion to altitude, collecting photos with metadata, lookup lists with autocomplete functionality, conditional calculations, prompting answers based on previous inputs (relevant questions), tabbed navigation through sections, an interactive QC summary page to ensure all necessary data are collected, storing incomplete forms as "drafts" for later editing and working offline. Post processing included a custom feature report template for benchmark locations and conversion of the transects into projected XYZ data that could be compared to other surveys and custom Light Distance and Ranging (LIDAR) data collected for the District.



Total years of experience

27

Years with firm

25

Education

B.S., Marine Biology, University of North Carolina at Wilmington, 1998

Certifications

Professional Wetland Scientist, Society of Wetland Scientists, 2710, 2016
Project Management Profession, 2897333, Project Management Institute, 2020 (exp. 12/10/23)
Benthic Invertebrate Sampling Protocols Certificate, North Carolina Division of Water Quality
North Carolina Wetland Functional Assessment, North Carolina Wetland Functional Assessment Team

Honors and awards

Commander's Award for Public Service, U.S. Army Corps of Engineers, Wilmington District. Awarded for services associated with the development and training of the North Carolina Wetland Assessment Method.

Environmental Excellence Award, Federal Highways Administration. Awarded at the ICOET conference for services in support of the

Matt Cusack, PWS, PMP

Spatial Analysis Lead

Broad Creek Causeway Historic Properties Viewshed Analyses and Seagrass Survey123 (FWC). GIS Analyst/Lead Survey123 Designer. For the Cultural Resources team, I used LiDAR viewshed analysis to identify which historic buildings could see the proposed project. For the EcoSciences team, I built a Survey123 form reflecting SCUBA divers' notes to map and analyze seagrass by connecting survey data to quadrat locations. The survey included a custom basemap, dynamic symbology, lookup lists, autocomplete, conditional calculations, relevant prompts, and draft-saving. Data was then linked to quadrat records and summarized with charts showing SAV species presence or absence.

Post-Hurricane Ian Marker Evaluation Survey123 (FWC). Lead Survey123 Designer. Developed a digital data collection form in Survey123 for the Florida Wildlife Commission's evaluation of storm-impacted navigation signs. The survey featured an inbox, dynamic symbology on a custom basemap to track assessed pilings, and integration with the FWC marker database for data verification. Additional features included lookup lists with autocomplete, conditional logic, relevant question prompts, tabbed navigation, draft storage, and offline capability. Post-processing generated custom feature reports and dynamic damage/cost charts for FEMA submissions. The tool was used to assess over 900 markers across three west Florida counties.

Third-Party EIS for Proposed Navy Base ICTF, North Charleston, SC.

Biologist/ecologist/lead environmental scientist. Responsible for efforts on the waters of the U.S., coastal resources, wildlife, vegetation, and threatened and endangered species sections (affected environment and environmental consequences) for the environmental document. **Cost:** \$4.3M **Prof.** 2019

Pelham Range PPDCs Charettes for the MPMG Range and ARF+ Range, Alexandria, AL.

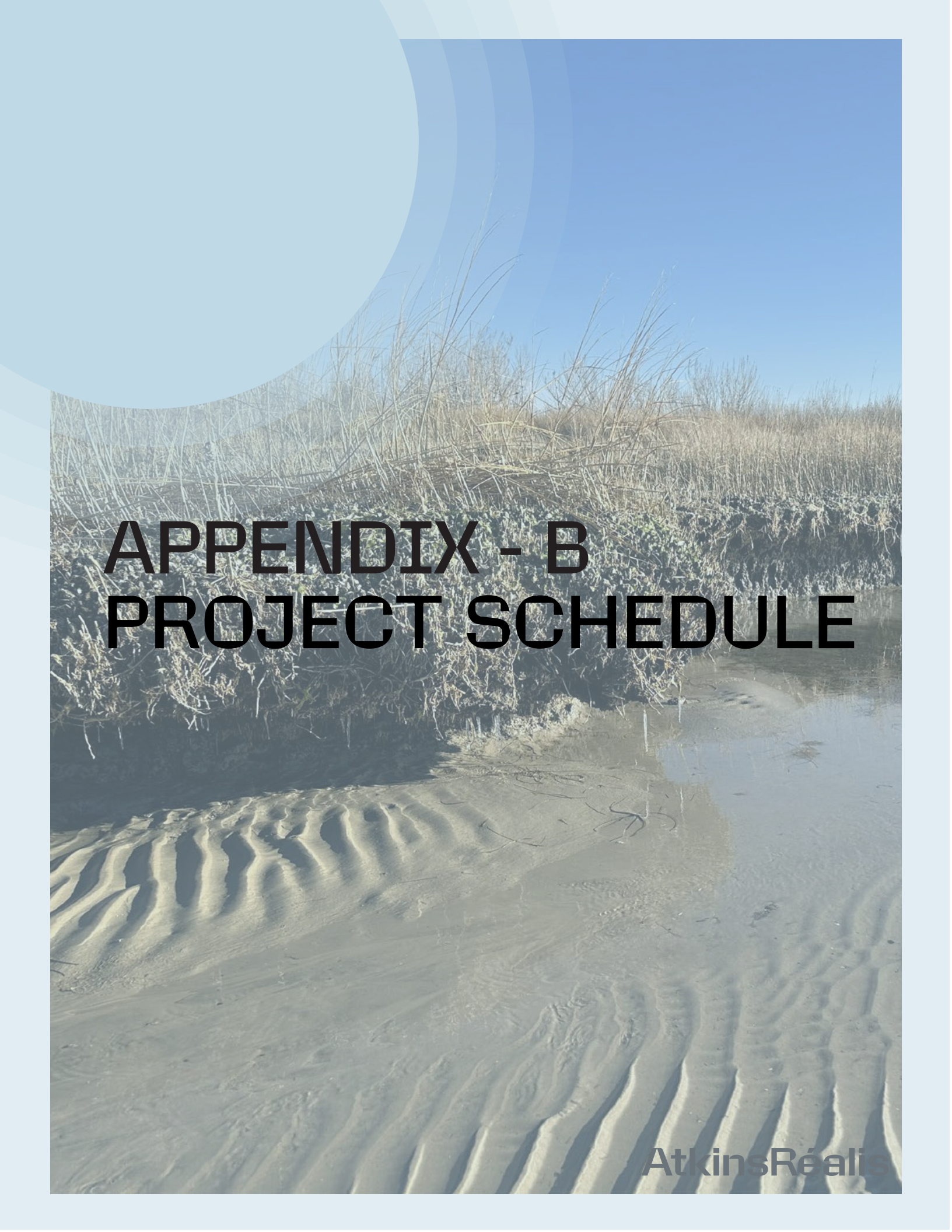
Biologist/ecologist/environmental scientist. Responsible for developing a desktop-based technique using remote sensing data to create a geodatabase of stream, wetland, and protected species habitat areas to assess impacts to waters of the US and protected species. This assessment allowed a more thorough avoidance and minimization effort during the alternatives analysis for two large ranges which significantly reduced construction costs.

NCDOT Project ATLAS, Statewide, NC. Project Manager/Technical Resource Lead. Supported NCDOT's Project ATLAS by developing and ensuring quality of new geospatial data layers—including wetlands, riparian zones, tidally influenced zones, Section 10 waters, and Areas of Environmental Concern—for integration into the project screening tool. Led the digital conversion of NC wetland and stream assessment methods (NCWAM and NCSAM) to Survey123 workflows. Delivered mapping products quickly, adhering to detailed standards, metadata, topology, and minimum mapping units.

Jasper Ocean Terminal Third-Party EIS, Savannah, GA.

Biologist/ecologist/environmental scientist. Used satellite and LiDAR data to create desktop habitat and wetland assessment layers, supporting pre-fieldwork planning for protected species impacts and mitigation needs in coastal wetlands. Coordinated Section 408 regulatory processes, inter-agency collaboration, alternatives analysis, and conducted waters of the U.S. delineation with PJD documentation.

development of the North Carolina Wetland Assessment Method, Seattle, WA, 2011.
National Association of Environmental Professionals, North Carolina Chapter Society of Wetland Scientists

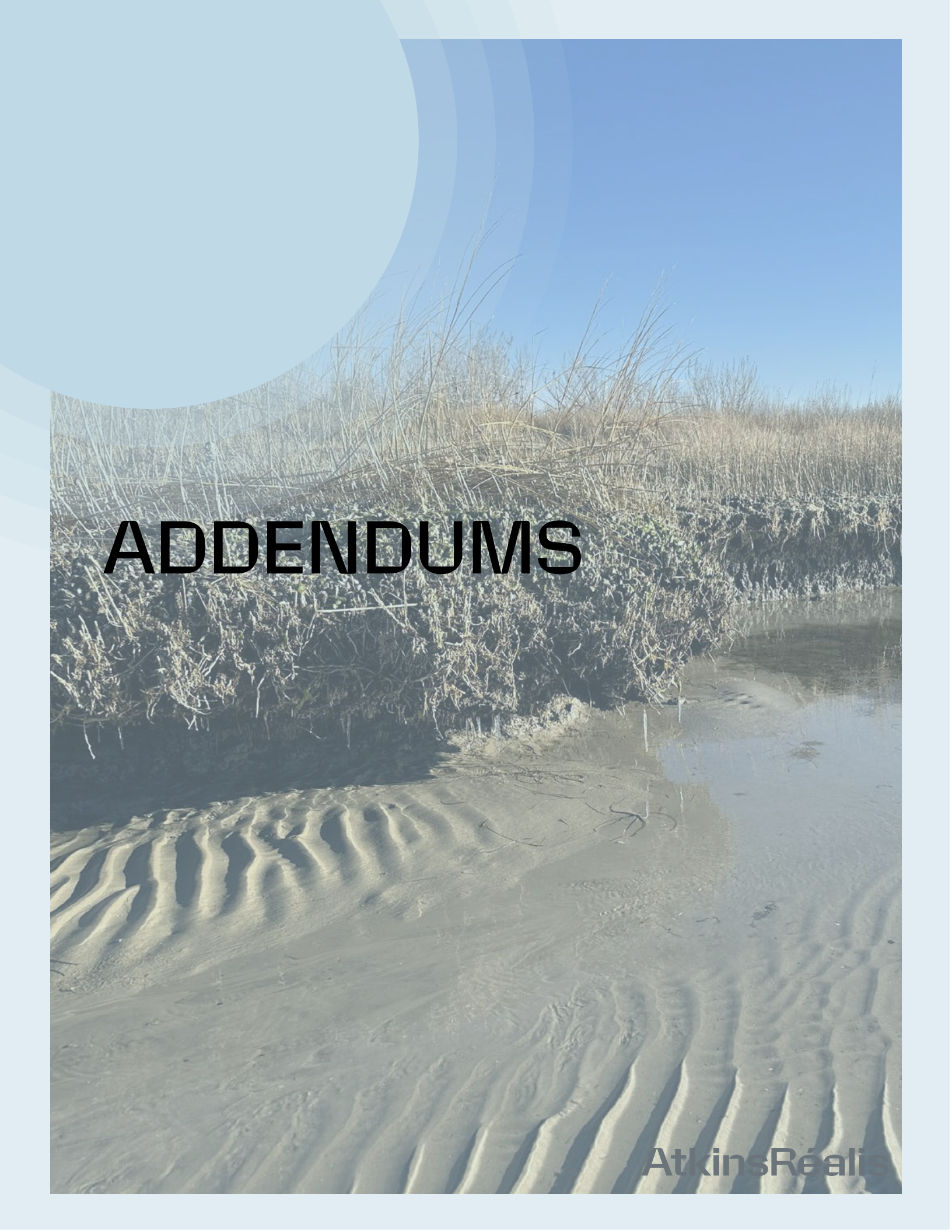


APPENDIX - B PROJECT SCHEDULE

Appendix B: Project Schedule

Proposed Schedule													
Task Activity and Completion Timeframes		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Task 1 Project Initiation, Work Plan, and Scheduling													
Kickoff Meeting													
Community Engagement Events													
Quarterly Progress Meeting													
QA/QC													
Task 1 Final Deliverables													
Task 2 Comprehensive Existing Conditions Report (ECR)													
Desktop Analysis													
Topographic/Bathymetric Survey													
Checkpoint 1: Outline and TOC Review*													
Environmental Assessments (includes MidTRAMs)													
Cultural Resource Desktop Review													
Data Processing & GIS													
Checkpoint 2: Draft data figures/maps*													
ECR Draft													
Checkpoint 3: Draft ECR*													
ECR Final													
Checkpoint 4: Final ECR*													
Task 2 Final Deliverables													
Task 3 Conceptual Design													
Alternative Design & Analysis													
MPPDC Review*													
Engineering Design & Analysis													
MPPDC Review*													
Design Review Workshop													
Task 3 Final Deliverable													
Task 4 Basis of Design													
Prepare BOD w/Technical Appendices													
Cost Estimating													
BOD Draft													
MPPDC Review*													
BOD Final													
Task 4 Final Deliverables													
Task 5 Resilience Feasibility Assessment													
Alternative Screening													
Scenario and Sensitivity													
Feasibility Report Draft													
MPPDC Review*													
Feasibility Final													
Task 5 Final Deliverables													

Proposed Schedule													
Task Activity and Completion Timeframes	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	
Task 6 Land Conservation Suitability Assessment													
GIS-Based Screening and Analysis													
GIS Mapping													
Project Team Review (MPPDC, IEN, DWR etc.) *													
Land Assessment Report Draft													
MPPDC Review*													
Land Assessment Report Final													
Task 6 Final Deliverables													
Task 7 Environmental & Regulatory													
Stakeholder Coordination													
Environmental Eval Summary													
Project Team Review (MPPDC, IEN, DWR etc.) *													
Pre-Application Meeting													
Draft Joint Permit Application													
MPPDC Review*													
Task 7 Final Deliverables													
Task 8 Optional Field Services (Optional)													
Survey & Monitoring													
Biological & Water Quality													
Cultural Resource Assessment													
Task 8 Final Deliverables													
* - Critical Milestone for Project Team Review (MPPDC, DFW, Carlexson Consulting, Consociate Media, IEN, etc)													



ADDENDUMS

**Middle Peninsula Planning District Commission
REQUEST FOR PROPOSAL #FY26-GRIT1**

RFP ISSUE DATE: December 4, 2025

DUE DATE: January 20, 2026

TIME: 4:00 P.M. EST

RFP# : FY26-GRIT1

ISSUING AGENCY: Middle Peninsula Planning District Commission (MPPDC)
4521 Lewis B. Puller Memorial Highway
Mattaponi, Virginia 23110

CONTACT: Mindy Strevig
Project Manager
Phone: (443) 980-6792
Email: mstrevig@mppdc.com

LATEST UPDATE: December 16, 2025

QUESTIONS AND RESPONSES:

- I. Under the Local Economic Participation category in the Selection Criteria, use of academic partners was listed. Are academic institutions eligible to submit a proposal directly, versus merely being a subconsultant to a private firm?*

Yes, academic institutions may provide a response if they determine they are the most qualified and able to perform the work. Academic institutions also may have additional opportunities throughout the project to directly contract with MPPDC to supplement the project.

- II. Can we get a copy of the NFWF grant application?*

Yes, the NFWF application has been loaded onto the website with the RFP. MPPDC is also engaged with additional funding sources to support this project that are pending final agreements.

- III. Will the consultant who developed the grant application be allowed to bid on this RFP?*

There was not a consultant who developed the grant application. The NFWF grant application was developed by Virginia Marine Resources Commission in coordination with the Virginia Department of Wildlife Resources and the National Oceanic and Atmospheric Administration Chesapeake Bay Office. Various sources were utilized to inform the grant application including VIMS Shoreline Studies Program, with location selection further informed by the VIMS Shoreline Change Mapping System, the NOAA-funded VIMS Nearshore Oyster Restoration Siting and Prioritization Tool, Adapt VA, other prioritization tools, and various reports.

**Middle Peninsula Planning District Commission
REQUEST FOR PROPOSAL #FY26-GRIT1
ADDENDUM #2**

RFP ISSUE DATE: December 4, 2025

ADDENDUM ISSUE DATE: January 13, 2025

PROPOSAL DUE DATE: **February 10, 2026**

1. REVISION TO PROPOSAL DEADLINE

The submission date has been revised to February 10, 2026. Submission time, format, and location remain the same.

2. REVISION TO INTRODUCTION

The first 3 paragraphs in this section of the RFP should be replaced with the following text:

The Middle Peninsula Planning District Commission (MPPDC) invites qualified firms with expertise in coastal engineering, habitat restoration, ecological assessment, and resilience planning to submit proposals for professional services supporting the **Guinea Resilience & Innovation for Tidal Wetlands (GRIT) – Phase I Project**.

The selected firm will serve as the prime technical contractor, responsible for developing the Comprehensive Existing Conditions Report, **identifying data gaps and needs with field verification of critical design elevations, informing biological and habitat assessments**, and producing conceptual design, feasibility, and conservation analyses that advance resilience planning for tidal wetlands and shorelines within and around the Guinea Marsh Wildlife Management Area (WMA) and adjacent Mobjack Bay marsh islands.

This procurement utilizes competitive negotiation for professional services in accordance with the Virginia Public Procurement Act (VPPA) and must comply with federal grant requirements under 2 CFR 200, **the National Fish and Wildlife Foundation (NFWF) grant conditions, and the grant conditions of the United States Environmental Protection Agency (EPA) Climate Pollution Reduction Grant (CPRG) program, in particular the Atlantic Conservation Coalition (ACC) grant administrated in Virginia by the Virginia Department of Environmental Quality (DEQ).**

3. REVISION TO SECTION II GENERAL SCOPE OF SERVICES

The text in the RFP should be replaced with the following text:

The GRIT – Phase I project, funded through NFWF’s National Coastal Resilience Fund (NCRF 2024), seeks to safeguard and restore up to 1,000 acres of tidal marshes, dunes, and beaches through nature-based and hybrid shoreline solutions. **The GRIT – Phase I project will be supplemented by**

funds from the EPA's CPRG program, in particular the ACC grant which will safeguard 400 acres of tidal wetlands and beaches and restore up to 3 acres of tidal wetlands, dunes, and beaches. The NFWF and EPA funds will support projects implemented primarily on public property within the approximate area of interest shown in Figure 1.

Figure 1: Approximate Area of Interest for the GRIT Project



The project is administered by the Virginia Department of Wildlife Resources (DWR), with subaward to the Middle Peninsula Planning District Commission (MPPDC) for project management and execution.

The existing Project Team includes DWR, MPPDC, and the following:

- Carlexson Consulting – project management and technical oversight
- Consociate Media – community outreach and communication
- University of Virginia's Institute for Engagement and Negotiation (IEN) – community and Tribal engagement

Objectives

The selected firm will work closely with these partners and the broader project team to achieve the objectives outlined below and produce all technical deliverables according to the tasks summarized below:

1. Develop a Comprehensive Existing Conditions Report (ECR) integrating desktop analyses, LiDAR and bathymetric surveys, and biological field data to establish a robust baseline of physical, hydrologic, and ecological conditions.
2. Develop conceptual and preliminary design alternatives for nature-based shoreline and marsh resilience features aligned with stakeholder input and ecological data within the guinea marsh system.
3. Prepare a Basis of Design Report (BOD) summarizing engineering assumptions, performance goals, and cost estimates.
4. Complete a Resilience Feasibility Assessment evaluating technical, environmental, and economic viability of restoration, enhancement, and protection interventions, including dredged material use and elevation enhancement.
5. Complete a Land Conservation Suitability Assessment identifying parcels and corridors that support future marsh migration and long-term habitat protection.
6. Prepare draft environmental and permitting documentation, including a draft Environmental Review Summary and draft Joint Permit Application (JPA) **that has been field verified sufficiently to increase likelihood of permit issuance.**
7. Coordinate closely with project partners, ensuring review checkpoints and comment incorporation for all deliverables.
8. Provide quality-controlled data, reports, and design materials suitable for use in final implementation planning and permitting.

Scope of Work Overview

Task 1 – Project Initiation, Work Plan, Coordination, QA/QC, and Reporting

- Participate in kickoff and coordination meetings with MPPDC, Carlexson Consulting, DWR, and the project team as needed.
- Attend monthly coordination meetings and quarterly progress briefings.
- Review existing data, reports, and surveys (e.g., LiDAR, bathymetry, biological assessments, and existing conditions report).
- Maintain QA/QC documentation for all datasets and analyses.
- Develop a detailed work plan and schedule outlining design milestones, submittals, and review points.
- Provide monthly progress reports summarizing key accomplishments, issues, and schedule updates.
- Attend (in person) and support at least two community or stakeholder engagement events in technical expert role.

Deliverable: Approved Project Work Plan and schedule. Monthly reports and Final Technical Data Package (all final deliverables consolidated). Final report that packages all deliverables from all tasks.

Task 2 – Comprehensive Existing Conditions Report (ECR)

The consultant will lead the preparation of the ECR, which will combine desktop and field data to establish a detailed understanding of site conditions.

- Desktop Assessment: Compile and synthesize existing datasets, including but not limited to prior shoreline studies, bathymetric maps, SAV mapping, aerial imagery, hydrologic models, and climate projections.
- **Data Gaps Identification: Conduct a desktop assessment of available data and identify data gaps or needs in coordination with the project team to identify additional data or field services that may be required to support the project.**
- Field Data Assessment: Inform and review the collection of field data identified such as LiDAR, bathymetric, biological surveys, or any other necessary field services to fill data gaps and verify existing information. **Conduct field verification of critical design elevations sufficiently to inform concept designs in areas identified as priority based on existing conditions. Field verification should include any measures reasonable and necessary to increase likelihood of permit issuance, such as field verification of mean low water, mean high water, and 1.5 times mean tide level in priority areas. System-wide collection of additional field data will be considered under Optional Task 8.**
- Data Processing & Mapping: Deliver processed datasets (DEM, bathymetric surface, habitat maps) in GIS format with metadata.
- Report Development: Integrate findings into the ECR, summarizing site characteristics, geomorphology, habitat types, vulnerabilities, and restoration opportunities.
- Review Checkpoints:
 - Checkpoint 1: Outline and table of contents – team review and approval.
 - Checkpoint 2: Draft data figures and maps – technical review by MPPDC, Carlexson, and DWR as coordinated by the Project Team.
 - Checkpoint 3: Draft report – partner review (MPPDC, IEN, Consociate Media).
 - Checkpoint 4: Final ECR – incorporating consolidated feedback.

Deliverable: Draft and Final Comprehensive Existing Conditions Report with supporting GIS and data files.

Task 3 – Conceptual Design Development

- Develop up to three conceptual design alternatives addressing marsh edge stabilization, dune/beach and wetland restoration, and hybrid nature-based structures.
- Evaluate each for constructability, cost, performance, and ecological enhancement.
- Present alternatives during a Design Review Workshop with the project team.

Deliverables: Conceptual Design Drawings, Alternatives Summary, and Workshop Notes.

Task 4 – Basis of Design Report (BOD)

- Prepare the BOD documenting selected design approach, design criteria, phased implementation recommendations, and supporting analyses.
- Include model results, cost estimates, and phasing recommendations.
- Participate in a draft BOD review meeting with full project team prior to finalization.

Deliverables: Draft and Final BOD Reports.

Task 5 – Resilience Feasibility Assessment

- Evaluate the technical and economic feasibility of interventions (e.g., thin-layer placement, beneficial dredged material use).
- Assess resilience benefits under sea-level rise scenarios.
- Coordinate findings with the engineering and ecological assessments.
- Participate in a draft Feasibility Report review with MPPDC and Carlexson prior to finalization.
- Develop draft and final Feasibility Assessment Report.

Deliverables: Draft and Final Feasibility Assessment Report.

Task 6 – Land Conservation Suitability Assessment

- Conduct a GIS-based analysis identifying parcels and corridors suitable for future protection or easement.
- Assess land use, ownership, elevation, projected inundation, and ecological value.
- Provide maps, parcel prioritization tables, and metadata.
- Conduct mapping review and ranking discussion with the Project Team prior to finalization.
- Develop draft and final Land Conservation Suitability Assessment Report.

Deliverables: Draft and Final Land Conservation Suitability Assessment Report and GIS package.

Task 7 – Environmental and Regulatory Documentation

- Prepare an environmental evaluation summary outlining anticipated effects, mitigation needs, compliance pathways, and applicable regulatory requirements and pathways. Draft materials to be reviewed by MPPDC, DWR, and Project Team for completeness **in preparation for submission.**
- **Prepare at least one draft JPA package that has been field verified sufficiently to increase likelihood of permit issuance. Submittal of the JPA package to regulators is not included**

but sufficient pre-application coordination should occur to increase likelihood of permit issuance once the JPA has been submitted.

Deliverables: Draft Environmental Review and Draft JPA package

Task 8 – Optional Task – Field Services

- Field Data Collection: collect field data such as LiDAR, bathymetric, biological surveys, or any other necessary field services to fill data gaps and verify existing information.

4. REVISION TO SECTION III PROPOSAL FORMAT

Item 11. Cost Proposal should be struck from the list of items to be addressed.

The items addressed in the proposal in the order listed are:

1. Cover Sheet
2. Project Understanding, Approach, and Methodology
3. Innovation and Resilience Integration
4. Schedule and Deliverables
5. Qualifications and Experience of the Firm and Project Team
6. Response Capability
7. Insurance
8. References
9. Other Supporting Data
10. Submission of Proprietary Information (If applicable. See Section 10 below for more information).
- ~~11. Cost Proposal~~

Section 5 – Qualifications and Experience of the Firm and Project Team should be revised to the following:

1. Include the organizational chart, functional discipline, and responsibilities of the Offeror's project team members.
2. Provide concise resumes of each key team member's education, relevant professional experience, length of time employed by the Offeror and/or subcontractor, and professional licensure. Describe professional staffing available for development, training, implementation, and support services. Additionally, the Offeror shall clearly state whether it is proposing to subcontract any of the work herein. The names of all proposed subcontractors shall be provided. By proposing such firms or individuals, the Offeror assumes full liability for the subcontractor's performance. The Offeror shall state the amount of previous work experience with the subcontractor.

3. Include a list of **at least 5** projects, which contain work similar or related to that called for in this solicitation and, at a minimum, include for each project listed the following: project name, brief project description, location of the office responsible for the project, budgeted cost, completed cost, year completed and actual completion date relative to scheduled completion date. Also include a graphic such as a post-construction photo, drawings, concept plans, or other visual depiction.

4. Participation in the design advisory process, including the provision of technical information or non-binding recommendations, does not constitute a conflict of interest and will not preclude a firm or manufacturer from submitting proposals during the future construction procurement, provided that firm does not have access to non-public procurement information nor assists in the preparation of future procurement documents. All data and information compiled in this project will be required to be submitted to MPPDC and will therefore be considered public information.

Section 8 – References should be revised to the following:

Give the name, address, and telephone number of **at least 3** references for whom similar work has been performed along with project name and description of services provided. MPPDC may, at its discretion, contact these and other known references to discuss the past performance of the firm and Offeror's project team.

Section 9 – Other Supporting Data

Other information you feel to be relevant to the selection of your firm for this Contract.

Section 10 – Submission of Proprietary Information (Submit Under Separate Cover)

Pursuant to the Virginia Public Procurement Act ("VPPA"), Virginia Code § 2.2-4342, trade secrets or proprietary information submitted by an offeror in connection with this procurement transaction shall not be subject to public disclosure under the Virginia Freedom of Information Act; however, the Offeror must invoke the protection of Va. Code § 2.2-4342 prior to or upon submission of the data or the materials, and must identify the data or other materials to be protected and state the reasons why protection is necessary. The Offeror shall not designate as trade secrets or proprietary information (a) an entire proposal; (b) any portion of a proposal that does not contain trade secrets or proprietary information; or (c) line item prices or total proposal prices." This is a paraphrase of the limitations to trade secret designation set out in the Procurement Act.

Offerors shall submit under separate cover any information considered proprietary and any copyrighted material. Separate cover means that proprietary information must be placed in a separate area of the proposal and be clearly identified as containing proprietary and/or copyrighted information.

References may be made within the body of the proposal to proprietary information; however, all information contained within the body of the proposal not under separate cover and labeled proprietary shall be public information in accordance with state statutes.

5. REVISION TO SECTION IV PROJECT TIMELINE

Project should be completed prior to December 31, 2026. The project team has requested a one-year extension to December 31, 2027 that is currently under review.



AtkinsRéalis USA Inc.

1925 Ballenger Avenue, Suite 400,
Alexandria, VA 22314

Primary Contact Person:

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Doug.Gaffney@atkinsrealis.com