1. Ability of Firm and Professional Personnel: Max Total – 30 Points

a. Provide a narrative that identifies and highlights the Prime Vendor’s credentials and experience relative to coastal engineering.

Points Value: 5

Applied Technology and Management, Inc. (ATM), is a Florida-based coastal, marine, and water resources design, engineering, and consulting firm. We are a recognized industry leader in the field of coastal and marine engineering throughout Florida and have been providing comprehensive coastal engineering services, similar to those referenced in this solicitation, to coastal communities throughout Florida for more than 30 years. In total, ATM has directed the placement of over 20 million cubic yards in total nourishment volume on beaches throughout the Southeast United States.

ATM’s Coastal Engineering Group is well established within Southeast Florida and has developed a strong, positive reputation throughout Florida, the southeastern United States, the Bahamas, and the Caribbean. We have conducted hundreds of coastal engineering projects involving a spectrum of planning, design, permitting, and environmental investigations. The group provides services relating to the development, enhancement, and maintenance of coastal projects including public and government funding programs such as inlet management planning and implementation, beach nourishment and restoration planning, design, construction management, performance monitoring, and erosion control structure analysis and design.

Specific to this solicitation, it is worth noting the following differentiators that set ATM apart from the competition:

- Coastal Community Experience
- City of Hollywood Beach Program Support
- Federal Beach Nourishment Projects
- Hardbottom Expertise
- Upland Sand Placement
- Coastal Structures
- Regulatory Experience
- Surveying Services

Established in 1938, Atkins has become one of the largest international design and engineering consulting firms, with offices across the United States, Europe, the Middle East, and Asia Pacific. Our experience in the most vibrant world markets allows us to deliver optimal, state-of-the-art technical solutions to our clients’ projects by sharing expertise and knowledge on a worldwide scale.

Most important, Atkins is local with deep roots in Broward County, having 190 staff in Ft. Lauderdale and nearby Miami. Our team knows the local permitting environment, including the people involved from key agencies, offering Broward the benefit of a team that can accomplish the permitting process without delay. Additionally, Atkins’ office network spans the nation and encompasses more than 3,800 employees. Our experience and our understanding of local requirements, practices, and culture enables us to be true partners with our clients.

In the United States, Atkins has more than 50 years of port, coastal, and marine engineering expertise. Preserving and enhancing coastal infrastructure requires a strong background in marine science, engineering, and permitting. Our highly trained teams are skilled in coastal zone policy, marine ecological sciences, resource permitting, hydrodynamic modeling, wave modeling, sediment transport studies, inlet dynamics, beach nourishment, mixing zone analyses, marine structures, marinas, dredging, coral ecology, resource assessment and mitigation, and other areas of coastal engineering design and study.

Atkins offers a multidisciplinary team approach to problem solving, assigning experts in specific fields relevant to the needs of this multifaceted project. By using this holistic approach, Atkins offers our clients solutions

CB&I’s coastal engineering team is headquartered in Boca Raton, Florida and was specifically developed over decades to implement projects exactly like Segment III. Since 1984, CB&I (consisting of legacy firm Coastal Planning & Engineering, Inc.), has provided professional coastal and marine engineering, hydrographic and geophysical surveys and environmental services to our clients. We have earned an excellent reputation with local, state, and federal agencies responsible for permitting and overseeing marine and coastal programs. We have designed more than 75 beach nourishment projects and over 30 coastal structure projects for municipal, state, and federal clients throughout Florida, the Gulf coast and up the Atlantic seaboard. The breadth of experience gained from these projects has imparted our professionals with the knowledge and expertise to provide Broward County with cost-effective solutions to Segment III’s engineering and environmental challenges.

CB&I’s unique multidisciplinary experience combined with our numerous professional certifications has instilled a responsibility in our staff to address each project with technical excellence, environmental consciousness and cost effectiveness. We pride ourselves on developing creative and sustainable designs that meet requirements of regulatory and resource agencies. Our proactive coordination with these agencies facilitates a successful and timely permitting process. Our extensive experience designing and permitting coastal projects in south Florida allows CB&I to assist the County in planning and implementing a successful Segment III project.

With a full team of experts, we offer Broward County an integrated approach with our in-house capabilities in the following disciplines:
### EVALUATION CRITERIA - PROJECT SPECIFIC CRITERIA

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#### Applied Technology & Management, Inc.

ATM has included Pinnacle Ecological, Inc. (Pinnacle) as our teaming partner for this solicitation. We believe the knowledge and experience Pinnacle brings to the team is a great complement to ATM’s services. The depth of skills, experience, and knowledge of this partnership will be of great benefit to Broward County.

Pinnacle is an environmental science consulting company supporting permit compliance for coastal and offshore marine development activities. With a global reach, Pinnacle provides environmental science services for government and private industry. Pinnacle’s unique expertise focus on environmental impact assessments, benthic assessment and monitoring surveys, habitat characterization and GIS mapping, field-data collection, Quality Assurance/Quality Control (QA/QC) data management, environmental permitting and permit compliance, coastal hydrodynamics, and marine habitat restoration. The firm focuses on environmental due diligence, feasibility, and risk assessment studies to identify potential short and long term risks associated with beach nourishment, port dredging, and related coastal development. Pinnacle also investigates the potential environmental and economic impacts to important resources including corals, natural and artificial reefs, seagrass, and mangrove habitats. Additionally, Pinnacle provides reasonable, cost effective solutions for avoidance, minimizing, and/or mitigating irreversible environmental impacts that may affect water quality, fishing, tourism, and resource health. Pinnacle’s environmental emergency response service provides rapid deployment of professional scientific field teams to assess environmental conditions and

#### Atkins North America, Inc.

Atkins is proud of our status as a leader in the engineering and environmental community—a position we have achieved by providing responsible solutions to today’s environmental challenges. Our firm offers an integrated team of qualified scientists and engineers experienced in all phases of project planning, engineering, environmental analysis, and construction.

Refer to pages 4 to 5 and 60 to 62 for greater detail

#### CB&I Environmental & Infrastructure

This in-house team of experts provides seamless and efficient transfer of data and information to develop optimal environmentally sensitive project designs. The team reports directly to the County and prioritizes the County project needs without cumbersome contractual relationships.

Refer to pages 7 to 9 for greater detail

- Endangered Species
- Environmental Resources
- Beach Facilities and Infrastructure
- Public Involvement

- Engineering
- Biology
- Geoscience
- Survey
- CAD/GIS

that meet the complex criteria associated with projects in the coastal and marine environment.

Refer to pages 4 to 5 and 60 to 62 for greater detail
initiate mitigation measures to limit ecological impacts. They are recognized throughout the industry as experts in the field of marine environmental science, implementing sound scientific methodology, and producing exemplary scientific reports which contribute to streamlining the environmental permit process from concept through completion by avoiding potential impacts and maintaining project schedules. The marine scientists at Pinnacle have extensive experience and expertise conducting environmental field surveys associated with beach nourishment, dredging, and seawall construction throughout Florida. Pinnacle’s key personnel have conducted environmental surveys in numerous nearshore habitats along southeast Florida including the Florida Keys. The team at Pinnacle is recognized as a preferred contractor by the National Oceanic and Atmospheric Administration (NOAA) and the Florida Keys National Marine Sanctuary (FKNMS) as leaders in coral reef damage assessment, reef rehabilitation and coral transplantation. They are also recognized by the FWC to provide professional manatee and sea turtle observer services and is also licensed to conduct surveys of other threatened and endangered species.

Refer to pages 5 to 8 for greater detail

| Principal-In-Charge/Project Manager/Coastal Engineering Principal = Michael Jenkins, PhD, PE |
| Project Manager and Environmental Assessment and Monitoring Lead = Adam Gelber |
| Project Manager = Quin Robertson, PhD, GISP |

Dr. Jenkins is a recognized expert in the field of coastal engineering and serves as Principal of ATM’s Coastal Engineering Division. He has an extensive background in modeling of dynamic coastal systems including a PhD within the field. This background has been further expanded by his work on a broad range of coastal engineering projects for more than 25 years.

Mr. Gelber has over 20 years of experience and currently serves as environmental sciences manager for the southeast coast of Florida for Atkins. He has been involved in all forms of environmental consulting throughout his career, assisting clients with scientific investigation, planning, permitting, compliance, advocacy, public involvement, and public policy. His core focus is to provide clients with guidance.

Quin Robertson, Ph.D., GISP will be the Project Manager for this contract and will serve as your primary point of contact for everyday coordination and administrative needs. Dr. Robertson is active in his community where he recently presented a sea level rise talk to prospective voters in Dania Beach that included the Broward County’s Segment III beach management plan. Dr. Robertson specializes in communicating complex
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<td>Points Value: 10</td>
<td>Dr. Jenkins has a vast amount of experience in the design, permitting, construction, and monitoring of beach nourishment projects in the vicinity of nearshore hardbottom and listed coral critical habitat. He has supported multiple federal nourishment programs including significant contributions to the preparation of General Re-Evaluation Reports (GRR’s), Limited Re-Evaluation Reports (LRR’s), and Design Memoranda (DM’s).</td>
<td>The members of the Prime Vendor’s proposed team.</td>
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<td>Senior Coastal Engineer = Peter Seidle, PE</td>
<td>Dr. Jenkins</td>
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<td>Mr. Seidle has more than 16 years of experience in project design, implementation, permitting, and monitoring of coastal engineering projects in Florida. He has provided support to several County Coastal Management Programs including Lee, Palm Beach, and Indian River counties. In 2007, Mr. Seidle provided key support to Indian River County in the successful completion of two beach nourishment constructions. These projects required considerable negotiation with regulatory agencies for project approval associated with nearshore hardbottom.</td>
<td>through the intricate maze of the various local, state, and federal permits including wetlands, hardbottom, coral and seagrass planning, design and construction compliance monitoring, and long-term monitoring. As a resident, an avid diver, and fisherman, Adam appreciates the value of both our beaches and our marine resources and takes great pride in helping local government clients strike the right balance of upland and marine resource protection in the unique setting of southeast Florida.</td>
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<td>Senior Coastal Engineer/Marine Engineer = Joseph Chaison, PE</td>
<td>Senior Coastal Engineer = John Waszak</td>
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<td>Mr. Chaison is a professional engineer with significant experience in the field of coastal engineering. He has designed and supervised the construction of beach nourishment, coastal structure, dike, spillway, and dredging projects. He has participated in all phases of coastal engineering projects, including feasibility studies, numerical modeling, environmental impact statements, local, state, and federal permitting, grant funding application, design, plan and specification development, bid form preparation, procurement, award, construction inspection, survey, acceptance, payment review, and monitoring.</td>
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<td>Construction Management = John Waszak</td>
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<td>Deputy Project Manager = Francisco Perez, REM</td>
<td>A marine biologist, senior project manager, and registered environmental manager. Mr. Perez has the ideal training and experience for managing this project. He has 34 years of experience in the environmental field including permitting, compliance assurance, enforcement, biological sampling, and community relations. Mr Perez has held positions as project manager, spokesperson, biological scientist, environmental specialist, and field supervisor for government agencies and consulting firms. He is an active member of the environmental community, proactively promoting the balance between environmental protection and economic/social development. He has a strong sense of commitment to providing added value and customer satisfaction. Mr. Perez will support Mr. Gelber locally as needed, ensuring Broward County an optimal level of service.</td>
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<td>Principal-in-Charge = Humberto Alonso Jr.</td>
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<td>Mr. Alonso has 38 years of experience including senior management positions with the South Florida Water Management District (SFWMD) and the School Board of Broward County (SBBC). His background includes the planning, design, and construction of capital projects for public clients. As principal-in-</td>
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<td>engineering and permitting concepts to interested citizens allowing for effective project outreach and project buy-in. Dr. Robertson started his career at Woods Hole Oceanographic Institution. He coordinated the airborne laser (LIDAR) program at the International Hurricane Research Center (IHRC) from the ground up starting in 1999. While working for the IHRC, Dr. Robertson was a key player in the development of using LIDAR and storm surge models to better predict flooding extents during tropical storms and worked with Glenn Margoles to update Broward County’s evacuation zones. Since joining CB&amp;I in 2007, Dr. Robertson has been a project manager on numerous beach nourishment, sand search, remote sensing and benthic habitat mapping projects. He wrote the chapter and lead the upland sand mine investigation for Segment II upland sand feasibility study and managed the 2008 LIDAR data collection for Broward County. Dr. Robertson is currently the Project Manager of our Long Beach, NY project where CB&amp;I is assisting the local government in implementing a federal shore protection project with USACE’s New York District that requires review of their Limited Reevaluation Report (LRR) and the Project Partnership Agreement (PPA).</td>
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<td>Project Executive = Lindino Benedet, PhD</td>
<td>Lindino Benedet has over 18 years of professional experience in project/business management and technical/scientific activities in coastal oceanography, geology, and engineering. Dr. Benedet is the director of the CB&amp;I Coastal &amp; Maritime Services business line and manages about 250 staff members in multiple offices across the United States and internationally. Dr. Benedet is an Associate Editor of the Brazilian Journal of Aquatic Sciences, Shore &amp; Beach and of the Journal of Coastal Research. He has published several scientific papers in international journals and</td>
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Mr. Waszak will provide construction management services for this contract. He has more than 16 years of experience in all aspects of coastal design, engineering, and monitoring. Mr. Waszak has been supporting coastal engineering efforts for the City of Hollywood since 2008 and served as project manager for the post-construction monitoring of the 2012 Hollywood Nourishment Project. His experience also includes many aspects of beach nourishment, hardbottom assessments and mapping, sea grass mitigation and monitoring, sand compaction testing for suitability of sea turtle nesting, and underwater photography and videography.

**Surveyor = Gary Bazemore, PSM**

Mr. Bazemore directs surveying services conducted within the firm and has experience with both land based and hydrographic surveying. He has served as project manager for large scale, multi-disciplinary field investigations including topographic, boundary, control, route, utility, and hydrographic surveys. His hydrographic surveying experience includes bathymetric, side scan sonar, sub-bottom sonar, magnetometer, navigation, current measurements, and tide studies. He has performed construction surveys and contract administration services related to beach nourishment and coastal projects throughout the Southeast, Bahamas, and Caribbean.

**Marine Biologist/Environmental Support = Paul Fitzgerald**

Mr. Fitzgerald is a marine biologist with over 27 years of experience conducting ecological field studies of benthic communities. His expertise includes design, management, and implementation of multidisciplinary environmental science studies for regulatory and permit compliance. He has served as charge, Mr. Alonso will oversee the administrative and staffing functions of the project so that Broward County is given all the resources it needs. He will also conduct check-in meetings with the County to make sure Atkins is meeting expectation and that project controls are being followed.

**Independent Quality Manager = Ruben Hernandez Gregorat, PE**

Mr. Hernandez Gregorat brings 25 years of experience in the management of large capital improvement programs. He has managed a wide range of projects throughout their life cycle, from the pre-planning through post construction, startup, and commissioning. Mr. Hernandez Gregorat is responsible for producing a project quality assurance plan (QAP), conducting QAP training, and auditing the project to verify its implementation.

**Coastal Engineering Lead = Stacey Roberts**

Ms. Roberts is technical manager leading Atkins’ coastal engineering group in North America. She has 17 years of experience with all types of coastal projects including beach nourishment, inlet maintenance dredging, coastal structures, and monitoring marine resources. From 2001 to 2009, Ms. Roberts served FDEP as an in-house permit processor under Atkins’ general engineering consulting contract through which she worked with local governments and their consultants championing coastal projects through the permitting process. Through this experience she developed excellent relationships with state regulatory, wildlife agency, and federal staff. She maintains a golden standard in service to her clients. As a consultant, Ms. Roberts has never had more than a single request for additional information (RAI) on any of her permit applications—a statistic that speaks volumes to her intimate understanding of the permitting process. Ms. Roberts’ unique conferences. His expertise includes project and business management, process-based numerical modeling of coastal processes, marine met-ocean instrumentation, navigation evaluations, port feasibility studies, dredging, beach nourishment, coastal structures, marine sand searches etc. Dr. Benedet participated intensively in the development of the LCA Louisiana Gulf Shoreline Restoration Report in 2003 and pioneered the application of the Delft3D model for the Louisiana coast in early 2000s.

**QA/QC = Tom Pierro, PE, D.CE**

Tom Pierro, PE, is the Director of the Coastal Restoration group for CB&I. He has over 15 years of broad experience in project management, planning, design and permitting, engineering and modeling, plans & specifications, field investigation, construction oversight, and feasibility studies of coastal engineering projects. He has both a B.S. and M.S. degree in Ocean Engineering from Florida Atlantic University and is a registered professional engineer in Florida and New York. Since 2001, Mr. Pierro has served as Project Engineer on numerous shore protection, beach nourishment and marine structure projects with CB&I. In 2011, Mr. Pierro was awarded the Jim Purpura / T.Y. Chiu Award from the Florida Shore & Beach Preservation Association for outstanding contribution to coastal engineering. As Director of Operations, Mr. Pierro will provide project quality control/quality assurance, corporate resource allocation, and oversight for all work conducted for this project.

**Engineering Advisor = Steve Keehn, PE**

Stephen Keehn, PE is a Senior Coastal Engineer with CB&I. Mr. Keehn served with the U.S. Army Corps of Engineers, Jacksonville District in planning, engineering, and construction assignments on beach and
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**Project Manager, Chief Scientist, and Dive Safety Officer**

- Mr. Doug Mann, PE, has worked as a coastal engineer with CB&I since 1987 and is experienced in all aspects of coastal engineering including dredge and fill projects for material disposal and beach nourishment, federal shore protection projects, beach and inlet engineering, dune enhancement projects, and coastal structure design (including breakwater, groin, jetty design and construction). Mr. Mann has extensive experience working on Broward County’s beaches including the following projects: Hollywood Haliandale shore protection project in 1991, removal of the Haliandale hook groin in 1991, the Segment II and III general reevaluation report in 2047 Vista Parkway, Suite 201 West Palm Beach, FL 33411.

- Mr. Deis is a certified environmental professional with 37 years of experience in the environmental science field as a consultant to industry and government. His areas of expertise include environmental evaluation, assessment, and monitoring of marine, estuarine, and coastal projects; restoration of Estherine and marine ecosystems; and environmental rules and regulation. Mr. Deis has experience in evaluation (modeling) and assessment monitoring of marine, estuarine, and coastal projects; restoration of Estherine and marine ecosystems; and environmental rules and regulation. Mr. Deis has experience in evaluation (modeling) and assessment (monitoring) of restoration projects. As a coastal ecologist, he has particular interest in hard bottom (reef) and seagrass habitats. As a consultant to the FDEP, he developed and provided training programs on seagrasses and associated habitats and trained FDEP staff on the GIS system developed by Broward County for the environmental information collected from the beach restoration projects. Thanks to his experience and long-standing relationships with regulatory agency staff, when Atkins began working for Martin County, Mr. Deis assessed the existing hardbottom monitoring plan and successfully negotiated a plan modification that saved Martin County more than 36% in the cost of annual monitoring.

**Lead = Mark Stroik**

**Lead Engineer = Douglas Mann, PE**

Ms. Shiplett has extensive experience with bottom habitat surveys, nearshore hardbottom monitoring, seagrass restoration, water quality monitoring, as well as benthic and oceanographic sampling. Ms. Shiplett is currently the project manager for the nearshore hardbottom biological monitoring associated with the Hillsboro/Deerfield Beach Nourishment Project.

**Lead = Don Deis, CEP**

Mr. Deis assessed the existing hardbottom systems to federal, state, and local sources and authorities and develops solutions that lead to lower cost and more efficient implementation and performance. He was awarded the Per Brunn Distinguished Service Award by Florida Shore and Beach Preservation Association in 1999.

**Lead = Randi Shiplett**

Ms. Shiplett is an experienced biologist who has worked on projects throughout Florida and the Gulf of Mexico. She has been a senior scientist on the upcoming navigation projects for over 20 years. Her major projects for USACE included feasibility and design reports for Sarasota County (Venice), Duval County (Jacksonville), Miami-Dade County (Miami Beach), and the construction of a joint navigation and beach renourishment project for St. Johns River Entrance and Jacksonville Beach while simultaneously dredging Mayport Naval Station. Mr. Keehn has served as a Project Manager and Senior Coastal Engineer at CB&I since 1992 on numerous beach and inlet projects, including four ASBPA Top Restored Beaches. He has worked on over a dozen beach nourishment projects for public and Federal clients, including design, permitting and construction management for Panama City Beaches, Captiva Island, Collier County and Fire Island. Mr. Keehn specializes in projects with a combination of local, state and federal funding sources and authorities and develops solutions that lead to lower cost and more efficient implementation and performance. He was awarded the Per Brunn Distinguished Service Award by Florida Shore and Beach Preservation Association in 1999.

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<td>Project. For the Segment III Project, she will oversee data analysis, report production, and provide support as a field scientist. Ms. Shiplett has provided services to Broward County as a field scientist for the deployment and recovery of scientific instruments in support of the Port Everglades Navigation Improvements Project. She will also be a field scientist on the upcoming Endangered Species Act Listed Coral Species and Reconnaissance Survey(s) for the project.</td>
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<td><strong>Marine Biologist/Environmental Support = Francesca Fourney</strong></td>
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<td>Ms. Fourney is an experienced biologist who has worked on coastal and oceanic projects in both Florida and internationally. Her expertise includes coral reef ecology of nearshore and deep water habitats. Her skills include: the ability to design and implement research studies, manage, and analyze complex data sets, perform in situ and laboratory taxonomic identifications, and prepare professional scientific reports. Ms. Fourney’s experience includes coral identification and description, coral collections and relocations, coral health classification, and knowledge of sedimentation and climate change effects on coral reefs. She is currently the QA/QC Manager for the nearshore hardbottom biological monitoring associated with the Hillsboro/Deerfield Beach Nourishment Project. For the Segment III Project, Ms. Fourney will oversee the QA/QC of data for the project and will also provide support as a field scientist and be involved in report production. She has provided services to Broward County as a field scientist for the deployment and recovery of scientific instruments in support of the Port Everglades Navigation Improvements Project. Ms. Fourney will also be a field scientist on the upcoming Endangered Species Act Listed Coral Species and Reconnaissance Survey(s) for the project.</td>
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Refer to pages 14-29 for resumes.

| Sand Source Investigations Lead = Randall Parkinson |Mr. Stroik is a coastal engineer at Atkins with 11 years of experience in dredging and coastal restoration projects. His experience encompasses all types of dredging projects at the contractor and consultant level for government and private clients. Prior to joining Atkins in 2013, Mr. Stroik was a project engineer with Manson Construction’s southeast dredging division. He advanced to a more integral role as the project manager in 2012, where he provided overall project oversight from conception through demobilization. He also served as lead estimator for several dredge projects, developing the actual bids that were submitted. Mr. Stroik has played very significant roles in the actual construction of several dredging and beach nourishment projects, and he has an intimate understanding that only a dredger can provide. |

| Sand Source Investigations Lead = Randall Parkinson | Dr. Parkinson, Ph.D., PG, is a coastal geologist with 35 years of experience working in the southeast and northern Gulf Coast regions of the U.S. He is the principal of RW Parkinson Consulting, Inc., an environmental consulting firm that specializes in coastal zone management issues arising as a consequence of urbanization, climate change, and sea level rise. Dr. Parkinson has successfully completed a variety of shore protection and coastal resource management projects over the course of 35 years including offshore/upland sand searches; native beach characterizations; potential borrow area (offshore, upland) compatibility analyses; borrow area delineation, design, and development; real-time beach nourishment sediment monitoring; and post-construction evaluation. |

| Survey Lead = Roberto Mantecon, PSM, PLS | A Professional surveyor and mapper, and avid SCUBA diver, Mr. Mantecon has 38 years of experience. He has worked on coastal and oceanic projects in both Florida and internationally. His expertise includes coral reef ecology of nearshore and deep water habitats. His skills include: the ability to design and implement research studies, manage, and analyze complex data sets, perform in situ and laboratory taxonomic identifications, and prepare professional scientific reports. Ms. Fourney’s experience includes coral identification and description, coral collections and relocations, coral health classification, and knowledge of sedimentation and climate change effects on coral reefs. She is currently the QA/QC Manager for the nearshore hardbottom biological monitoring associated with the Hillsboro/Deerfield Beach Nourishment Project. For the Segment III Project, Ms. Fourney will oversee the QA/QC of data for the project and will also provide support as a field scientist and be involved in report production. She has provided services to Broward County as a field scientist for the deployment and recovery of scientific instruments in support of the Port Everglades Navigation Improvements Project. Ms. Fourney will also be a field scientist on the upcoming Endangered Species Act Listed Coral Species and Reconnaissance Survey(s) for the project. | |

2002, the Segment II truck-haul beach nourishment in 2015/2016, and the truck-haul beach nourishment for the Town of Hillsboro Beach and the City of Deerfield Beach in 2015. Mr. Mann has also performed a study of potential erosion and resiliency at West Lake Village. Mr. Mann has completed multiple Coastal Construction Control Line permitting assignments for private developments and public facilities within the City of Hollywood and elsewhere in Broward County. Mr. Mann has authored and co-authored federal design documents for five different federally authorized shore protection projects. These experiences make him the ideal Lead Engineer for the County’s coastal engineering needs in Segment III.

**Engineering = William Reilly, PE**

William Reilly, PE, is located in our Jacksonville office and will serve as Broward County’s federal/state liaison between CB&I and Broward County with USACE and FDEP for this contract. Mr. Reilly is ideally suited to be liaison for the County based on his technical expertise, experience with the Broward County beach program since 2005, and ability to assist the County in a timely and cost-efficient matter due to his full-time proximity to USACE’s Jacksonville District office. Mr. Reilly is a senior coastal engineer with over 11 years of technical experience in all aspects of coastal engineering projects from inception through post-construction performance monitoring. His experience includes research, field data collection, design, permitting, construction management, project monitoring and acting as a certified expert witness on coastal issues.

**Engineering = Tara Brenner, PE, PG**

Ms. Brenner joined CB&I in 2007 and her main engineering responsibilities include: project management, permitting, construction observation, engineering analysis,
**Lead Scientist/Surveyor = Jeffrey Andrews, PSM, CIH**

Mr. Andrews has been with CB&I since the early 1980s performing marine sand searches and offshore geotechnical/geophysical and hydrographic surveys. He is now the Director of Marine Geoscience and MetOcean. During his career, he has conducted hundreds of coastal and beach erosion surveys and plated numerous erosion control lines around the State. Mr. Andrews has led all of the offshore sand investigations in Broward County since 1986. He is well-versed in conducting surveys in offshore and navigable channel environments using the latest state-of-the art equipment. Mr. Andrews has conducted hundreds of marine investigations and mapped more than 100 million cubic yards of beach compatible sand on the continental shelf. He was the Program Director of a project with the FDEP to map existing offshore sediment resources along the Florida coast that has been compiled into FDEP’s ROSSI online geodatabase.
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<th>Biologist = Stacy Buck, MS</th>
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<td>Stacy Buck has 17 years of experience in biological and environmental science with the last 14 years focused on coastal and marine biology in south Florida. Ms. Buck’s career with coastal construction projects began in Broward County in 2004 during preconstruction monitoring of the Segment III nourishment project. In her career at CB&amp;I, she has conducted over 1200 scientific dives monitoring natural and artificial habitats in the marine environment, of which over 750 of these dives have been in support of the Broward County Shore Protection Project. She has extensive experience in the design and implementation of monitoring programs for marine resources, including development of the Biological Monitoring Plan and Coral Relocation Plan for the Broward County Segment II project. Ms. Buck routinely prepares environmental documents in support of state and federal permit applications including joint coastal (JCP) and environmental resource (ERP) permits. She was the lead author of the Environmental Assessment for Segment II and is currently completing an Environmental Impact Statement for a shore protection project in Palm Beach County. She also prepared a Biological Assessment in support of ESA Section 7 consultation and an Essential Fish Habitat Assessment in support of the Magnuson-Stevens Fisheries and Conservation Act for Segment II. As the Lead Biologist at CB&amp;I, Ms. Buck is responsible for the management of biological monitoring projects from pre-permit application coordination through final report deliverables.</td>
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<th>Survey = Michael Lowiec, PSM</th>
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<td>Mr. Lowiec has conducted a variety of coastal surveys in Broward County including multiple beach profile surveys, offshore borrow</td>
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<td>area surveys, mean high water and topographic surveys, LiDAR data collection support, and multibeam bathymetry surveys of the nearshore reef and borrow areas. Mr. Lowiec’s extensive Broward county survey experience originated with the Segment III nourishment project in 2004. Mr. Lowiec was the surveyor of record for the recently established Erosion Control Line in support of the Segment II project. Mr. Lowiec and his team of surveyors conducted the design, pre-construction, and the one-year physical monitoring survey for Segment II and is contracted to provide surveying services for the remainder of the physical monitoring.</td>
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<th>Geology = Beau Suthard, PG</th>
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<th>GIS/CAD = Angela Belden</th>
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| Ms. Belden has more than 30 years of experience working with various surveying, engineering, GIS, and CAD programs. She is responsible for the management of personnel, hardware, software, and resources that provide 3D laser scanning, small unmanned |
### 1. Ability of Firm and Professional Personnel:

c. Describe the Prime Vendor’s experience in designing and processing federally authorized beach renourishment projects which included permitting, performing construction observations, and post-project monitoring.

**Points Value: 5**

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<th>Vendor</th>
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<td><strong>ATM</strong></td>
<td>ATM has extensive experience in all aspects of federally authorized beach nourishment projects. ATM staff have supported the authorization of multiple federal projects including technical support for the development of authorization documents including General Re-evaluation Reports (GRR’s), Limited Reevaluation Reports (LRR’s) and Design Memoranda (DM’s). ATM has successfully supported the development of Environmental Impact Studies (EIS) for coastal projects. ATM staff, under prior work engagements, directly supported the authorization study for the Broward County Segment II project including project performance modeling and economic analysis. ATM has extensive experience with federally authorized, locally re-reimbursable projects authorized under the Section 206 WRDA provisions. ATM maintains a strong, proactive relationship with both the USACE Jacksonville District and South Atlantic Division. ATM staff are regularly engaged with both on federal projects. Page 12</td>
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<tr>
<td><strong>Atkins</strong></td>
<td>Atkins has relevant experience designing and processing federally authorized beach renourishment projects. For example, since 2009, Atkins has supported Martin County with the maintenance of St. Lucie Inlet, a federally authorized inlet with Martin County as the local sponsor. The Atkins team assists the County with the local sponsor responsibilities in coordination with USACE and also assists with management of inlet-related activities such as design, permitting, construction oversight, and physical and biological monitoring. The St. Lucie Inlet area has some of the most sensitive wormrock hardbottom communities, similar to Broward County’s Segment III. Most of our proposed key staff have worked on this comparable project. Atkins designed the project, prepared construction plans and specifications, assisted with advertising the bid, reviewed bids, and made recommendations for award to move swiftly into construction in early 2012. Then the Atkins team provided construction management and oversight for maintenance dredging of the inlet and impoundment basin with placement of beach-quality sand on the downdrift beaches of Hobe Sound National Wildlife Refuge (HSNWR) more than 4 miles south of the inlet. Another related experience is Atkins’ work as FDEP’s coastal engineering consultant from</td>
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<td><strong>CB&amp;I</strong></td>
<td>CB&amp;I recognizes the challenges and benefits that local governments have with a federally authorized shore protection project. Despite being authorized by Congress, federal guidelines require that the project be economically justified at each renourishment. Justification requires a thorough study of the economics (project costs and benefits (storm damage reduction and recreational)) associated with the project. The economic study must follow prescribed procedures that allow for a consistent and unbiased view of the costs and benefits. The justification also includes the development of an appropriate NEPA document to evaluate reasonable alternatives and describe the potential environmental impacts of these alternatives. CB&amp;I is eager to undertake these efforts. CB&amp;I has participated in all four federally authorized project types including the design, providing construction services, and for the majority of the projects listed below providing post construction monitoring. CB&amp;I has performed work on 34 Federal projects which demonstrates their wide range of experiences (Refer to pages 26-31 for full list). Refer to pages 25 to 31 for greater detail</td>
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1997–2009. During this time, two of our proposed key staff (Stacey Roberts and Don Deis) served as contracted staff in the JCP Section to provide the department with needed resources to assess permit applications for all manner of coastal construction activity across Florida, including those in Broward County. No other firm has been invited into FDEP in this manner, enabling Atkins to offer our clients a level of permitting insight and expertise that no other firm can provide. We know the FDEP staff and processes and truly understand what it takes to get a permit processed for beach nourishment projects.

Refer to pages 25 and 86 to 87

1. Ability of Firm and Professional Personnel:
   d. Describe the Prime Vendor’s experience in designing and permitting beach renourishment project(s) with hardbottom resources in close proximity to the project footprint.

   Points Value: 10

ATM has well over two decades of experience in the successful design, permitting, and construction of beach nourishment projects in the vicinity of nearshore hardbottom. In total, ATM staff dedicated to this project have successfully supported the completion of 10 major nourishment projects in the vicinity of nearshore hardbottom. Programs of note include:

- Indian River County (Ambersand and Sector 7 Nourishment Projects)
- Palm Beach County (Juno Beach and Jupiter-Carlin Nourishment Projects)
- Town of Jupiter Island Nourishment Project
- Boca Raton Nourishment projects (North, Central, and South Projects)

ATM has successfully supported the authorization and design of two federal nourishment projects with nearshore hardbottom concerns. We have developed project specific modeling and design analysis tools to assess the potential for impacts to hardbottom from nourishment projects. ATM has successfully supported the state and federal regulatory approval of multiple nourishment projects. Pages 12-13

ATkins has similar experience designing and permitting beach renourishment projects with nearby hardbottom resources (St. Lucie Inlet project). For this project, the design of the beach renourishment template had to be very carefully considered, especially in areas where the hardbottom was nearest to the shore. To address this challenge, Atkins performed ETOF analysis and adjusted for the beach fill template to avoid direct and secondary impacts to nearshore hardbottom. This effort provided the necessary reasonable assurance that the design would not impact the hardbottom so that construction could proceed. The Atkins scientific dive team has been performing biological monitoring of the nearshore hardbottom off the Hobe Sound National Wildlife Refuge (HSNWR) since 2010 and, to date, no adverse impact has been documented and no mitigation has been required.

Shore protection structures fronting the beach of Fort Zachary Historic State Park in Key West were significantly damaged by hurricanes, resulting in erosion of the park’s beach. FDEP Parks hired Atkins to conduct design and permitting for repairs to the four breakwaters and the terminal groin adjacent to the main ship channel into Truman Harbor. The project lies

Working on coastal engineering projects in the presence of nearshore hardbottom resources is something that CB&I takes very seriously. Our staff have designed and permitted many projects that are in close proximity to nearshore hardbottom resources. We understand the nuances of why they are important and how to protect them. Nearshore hardbottom provides valuable habitat for juvenile fish species and supports a wide range of coral reef species. Designing projects adjacent to hardbottom habitats requires a design that enhances storm protection, wildlife (e.g. sea turtles and shorebirds) habitat and recreational areas while preserving the nearshore hardbottom. CB&I engineers develop environmentally sensitive beach restoration designs by collaborating with our inhouse biologists to refine the design until a balance is achieved.

Similarly, our engineers, biologists and geologists work together when hardbottom/reef resources exist near a potential borrow area. Protective buffer areas are incorporated and mixing zones are established to protect hardbottom resources while allowing extraction of sand for placement onshore.
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<td>entirely within the Florida Keys National Marine Sanctuary (FKNMS) with Outstanding Florida Waters (OFW) designation. The submerged portions of the structures are surrounded by environmental communities containing seagrass and several species of coral. The project included design of structural repairs to restore the terminal groin and breakwaters to design levels of shore protection. Atkins worked proactively with regulatory agencies including FDEP, FKNMS, and National Marine Fisheries Service (NMFS) staff to design the project in a manner that would minimize and avoid impacts. Atkins successively obtained the required permits, prepared design documents, construction plans, specifications, and bid documents for the project. For the City of Key West, Atkins performed design, permitting, physical and biological monitoring, and on-site construction inspection services for the Smathers Beach Truck Haul Nourishment project. Our scientists provided monitoring of the nearshore seagrass and hardbottom communities before, during, and after construction, ensuring that the project was not adversely affecting the sensitive environmental ecosystem. Smathers Beach lies within the FKNMS, which added a layer of complexity to the permitting process, which Atkins successfully mitigated. In support of Broward County’s beach renourishment program, Atkins was hired as a subconsultant to NOVA Southeastern University to perform biological monitoring before, during, and after construction. Our proposed project manager, Adam Gelber, worked on this project and became very familiar with the sensitive hardbottom challenges specific to Broward County shorelines.</td>
<td>Refer to pages 26 to 27 and 88</td>
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<td>Refer to pages 32 to 34 for full list of projects</td>
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2. Project Approach: Max Total – 37 Points

a) Describe the Prime Vendor’s approach to the Project’s scope. Include how the Prime Vendor will utilize the expertise and knowledge of its in-house staff, subconsultants, and other team members/professionals in the Project.

Points Value: 10

The ATM project team will utilize established staff, resources, and experience to support this project. This project will be primarily supported through the ATM West Palm Beach office which serves as ATM’s Coastal Engineering discipline center. This office is located approximately 50 miles from the project site, and the Project Manager and key staff reside in this office. In addition, key staff are very familiar with the project area as ATM is actively engaged with the City of Hollywood regarding their nourishment program.

Though our experience with similar nourishment programs, we understand that this project requires a long term, multi-year commitment and focus. Key to this execution is the development of effective working relationships with County, U.S. army Corps of Engineering (USACE), and regulatory staff. Through previous engagements ATM has already developed many of these relationships. As this is a federal project it is important to acknowledge the complexities of the authorization and implementation process which requires proactive engagement with USACE-Jacksonville staff and persistence to ensure that project milestones are completed in a timely manner. It is critical to establish realistic timeframes and budgets for federal projects as they require multiple year commitments and an ability to navigate the often-byzantine process.

Beyond the vagaries of the federal process, this project must address concerns regarding nearshore hardbottom and the potential implementation of additional shoreline structures. Recent development associated with the Florida Department of Environmental Protection’s (FDEP’s) Beach Management Agreement (BMA) may be utilized as a strategy to address both the assessment and regulatory approval of the project relative to hardbottom impacts. This approach would adopt a regional

Atkins provides an integrated, local, and experienced team that can perform all project phases from conceptual design through post-construction including permitting and monitoring. Most of the staff on our team are local in south Florida; however, staff are also located in strategic locations within the state and can assist during the permitting phase, as needed, for issues that may occur in Jacksonville, Tallahassee, and St. Petersburg, Florida. This allows for quick face-to-face resolution of issues that may not happen as quickly or effectively through emails or teleconferences.

Atkins’ coastal engineers, scientists, and policy experts work as an integrated team on projects similar to the Segment III Shore Protection project, supplying our expertise and knowledge with primarily in-house staff. We have also added specialized subcontractors for their experienced assistance. These subcontractors have worked with the Atkins team previously and will be fully integrated team members.

Refer to page 27 and 88

At CB&I, we take an integrated approach to shoreline stabilization projects. Our engineers, biologists, geologists and surveyors are prepared to apply their decades of experience to accomplish the Segment III project for Broward County. CB&I is aware and endorses the four phased approach listed in the scope of work to complete the Segment III project.

Our in-house professionals meet or exceed all the requirements to perform all four phases and are fully committed to providing exceptional service for successfully implementing this important project. We have selected our key staff based on their expertise in projects similar to Segment III. We have organized this team of experts around Dr. Quin Robertson who will manage the diverse elements of a successful federal design. Our business line is led by Lindino Benedet, Ph.D., who fully supports the Segment III project and will also assist with programmatic and modeling tasks.

Dr. Robertson will be supported by Lead Engineer Douglas Mann, PE, D.CE, who has authored five federal design documents throughout Florida, including Segment III. Mr. Mann will utilize the guidance of Mr. Pierro, PE and Mr. Keehn, PE combined with our engineering and modeling teams to review, design and implement the Segment III project. Will Reilly, PE is based out of our Jacksonville office and will meet regularly in person with USACE’s Jacksonville District to make sure the Segment III project stays on schedule. Dr. Robertson will also be assisted by Lead Biologist Stacy Buck, MS who has extensive experience in the mapping and characterization of Broward County’s nearshore hardbottom, protected species assessments, and has prepared numerous NEPA documents, including an Environmental Assessment for Segment II. Ms. Buck has logged more than 750 dives working in Broward County and has a team of eight AAUS
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| assessment of habitat availability with the understanding that much of the nearshore hardbottom resource is ephemeral and prone to periods of coverage that are not necessarily attributable to project impacts. This strategy has been utilized successfully to support projects in the Town of Palm Beach relative to hardbottom impacts. **Page 30** | | |}
| certified divers to successfully complete mapping and monitoring requirements. Our project specific approach to the Segment III beach nourishment design in focused on the following themes: **CB&I will design a cost efficient shore protection project:** Cost is one of the leading factors to getting a project constructed. Our engineers focus on methods that achieve the project purpose while remaining economically responsible. A cost-efficient shore protection project in Segment III will include:  
• A zero new hardbottom impact design  
• Flexible sand delivery methods  
• Permeable groins or possibly no new groins in Mizell-Johnson State Park  
• Evaluation of anticipated County sand bypassing project to stabilize the shoreline  
• Maintaining the nourishment design in north Hollywood to avoid near-term land acquisition costs  
• Adding dunes in Hollywood and Dania Beach to increase resiliency | | |**CB&I will complete the federal project permitting expeditiously:** The Segment III renourishment will require authorization from the U.S. Army Corps of Engineers (USACE). While there are many steps to obtain this approval, there are three primary documents that need to be approved. These are the federal design document (a GRR or LRR), a NEPA compliant document (an Environmental Impact Statement or Environmental Assessment), and the Project Participation Agreement.  
All of these documents will need to be coordinated and reviewed with the USACE Jacksonville District. While each document will be thoroughly quality controlled in-house before release, the USACE may pose questions |
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<td>based on the latest USACE guidance that require further analysis. Mr. Will Reilly, PE, will be our liaison with the District in Jacksonville. He will leverage his relationships with District staff and his proximity to the District office to encourage efficient review by the District. He will also attend the monthly Project Development Team (PDT) progress meetings with USACE to keep Broward at the forefront of Jacksonville’s priorities.</td>
<td>Utilize the Federal design document(s) to extend the federal authority: The County has a federally authorized shore protection project whose authorization will expire in 2026. While the recent Water Resource Development Acts (WRDA) of 2014 and 2016 provide for extension of the authorization beyond 50 years (for an additional 15 years), there are additional federal approvals that are required. CB&amp;I is prepared to assist the County with those extensions through the development of a risk minimization plan and a Beach Renourishment Evaluation Report. This authorization extension effort should be conducted in parallel to the 2019 Segment III project implementation to save money on both efforts since it is likely that a majority of the information contained in the Segment III GRR (or LRR) will be the same information required in the Beach Renourishment Evaluation Report. We recommend that the County partner with USACE during early development of the federal design document review to obtain an extension of the federal authorization.</td>
<td>Utilize the most cost effective sand resource for the project: Approximately 1.9 M cy of beach compatible material will be needed to maintain the Segment III shoreline through 2026. Potential sand source options include upland sand mines, local offshore borrow areas and non-local (including non-domestic) offshore borrow areas. CB&amp;I will leverage our extensive upland sand experience and contacts to ensure that all offshore and upland sand sources are</td>
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available for the Segment III project. In order to provide the County with maximum flexibility, we will permit multiple sediment sources since conditions and situations may change during the life of a project.

**CB&I will utilize a multi-disciplinary team approach to ensure that federal approvals are delivered to the County in a timely manner:** CB&I will provide the required staff to accomplish the document development in an expeditious manner. Our large staff of 47 expert engineers and scientists allow us to work concurrently on engineering, numerical modeling, geology, biology, economics, as well as attend to any project management issues.

Refer to pages 35 to 49 for greater details

2. Project Approach:

b) Describe, in detail, how the Prime Vendor and its subconsultants will handle each significant phase of the Project.

Points Value: 10

**Phase I: Engineering, Design, and Permitting**

The critical Phase I path is associated with federal re-authorization of the project and execution of a Project Participation Agreement (PPA) between Broward County and the USACE. Federal re-authorization required the development of a decision document to support federal participation.

In general, we would advocate for the adoption of a Limited Re-evaluation Report (LRR) which requires only the updating of supping economic justification of the project. Given the likely change in sand source, this may trigger the need for a General Re-evaluation report (GRR) which would re-optimize project dimensions relative to economic justification.

A GRR is a more involved and lengthy process in comparison to an LRR and will result in modifications to the project dimensions. While a GRR is a more involved process it does provide an opportunity to re-visit project dimensions.

Atkins coastal engineers will work with the County staff to develop the conceptual design in a program that fulfills the County’s requirements for the future of the Segment III shoreline. The conceptual design will describe the required field studies. Our engineers will develop and manage our subconsultants’ geotechnical and hydrographic surveys, which will depend on the sand source alternatives selected. Atkins scientists will develop and perform the biological field studies including nearshore hardbottom concerns, seagrass surveys for delivery alternatives, and offshore hardbottom concerns around potential borrow sites. In the study design, Atkins will consider the risk of future liabilities associated with hard bottom area changes that may not be related to project actions.

The mix of project alternatives considered and selected to reconstruct the federal project will lead to a project reevaluation. Atkins engineers
This may ultimately be beneficial for the project as there are issues with the implementation of the existing project relative to the established project baseline which is currently the Erosion Control Line (ECL) within Segment III. There is an abrupt discontinuity in the ECL which currently results in a similar offset in the current project baseline.

Re-evaluation of the project in a GRR sense also provides an opportunity to optimize project performance and approach in light of the use of upland sand sources. At present the federal project justification is based solely on the use of an offshore borrow source which constraints the project dimensions and renourishment interval. Use of uplands sources require significantly less mobilization costs, though this occurs within an increase in unit cost. The economics of each source however are significantly different and are not currently reflected in the authorized federal project.

Beyond the federal process, it is apparent that there are opportunities to increase the performance of the Segment III shoreline at reduced costs through the implementation of the planned Port Everglades bypassing plan in concert with the strategic use of upland sand sources. Use of the remaining offshore sand sources should also be considered.

In terms of the regulatory process, potential impacts to nearshore hardbottom are the primary point of concern. Modifications to the project design as discussed above are likely to reduce the potential for such impacts and as such are a likely opportunity to expedite regulatory approval of a modified plan.

**Phase II: Pre-Construction Services**

ATM will utilize local staff with direct beach nourishment experience to execute required pre-construction services. ATM’s primary on-site construction manager, John Waszak, is a have the experience to determine the extent of this reevaluation depending upon the alternatives selected within the segment. The current alternatives include sand bypass across the Port Everglades entrance, offshore sand sources for some portion of the project area, and upland truck-haul sand sources for some portion of the project. These alternatives and sources may be used initially or in combination with other alternatives in the future including the limited use of shore protection structures. Atkins engineers will need to design and model these alternatives to some extent for the reevaluation report. As Atkins staff are working with USACE on the reevaluation report, we will also work with the County to execute a Project Participation Agreement for the segment through the current project authorization period (2026). We will also evaluate the need for and extent of a National Environmental Policy Act (NEPA) review.

Public outreach is a critical element in gaining public acceptance of any project, particularly when it involve public resources. Atkins will coordinate with Broward County staff to provide outreach in the three municipalities affected by the construction (Dania Beach, Hollywood, and Halandale Beach). This coordination will help improve the public’s technical understanding, keep stakeholders abreast of upcoming activities, and establish practical expectations. Atkins will also keep pertinent municipal staff updated, and their participation will be encouraged.

Beyond the federal portion of the project and its alternatives, additional measures for portions of the shorelines may include the construction of dune features acting as additional shoreline protection, negotiated revisions of the erosion control line and coastal construction line, and strategic retreat from the shoreline along some portions. Placement and fill configuration be formulated based on current economic, environmental, and physical conditions, including available fill material characteristics. We will utilize our experience in beach nourishment design to prepare cost estimates for the County. Cost estimates will include all construction efforts and post-construction monitoring.

**State and Federal Permitting:** CB&I will apply our decades of experience in permitting shore protection projects and direct experience in Segment III to obtaining new regulatory authorizations. Our proven approach to permitting includes the following elements:

- **Pre-Application Meeting:** Prior to the development of the Joint Coastal Permit (JCP) Application, a meeting will be established and held with the FDEP Beaches Inlets and Ports Program, the USACE Regulatory Division, and supporting resource agencies which may include Florida Fish and Wildlife Conservation Commission (FWC), NOAA’s National Marine Fisheries Service (NMFS) and US Fish and Wildlife Service (USFWS). The purpose of the meetings will be to present the proposed project, discuss agency concerns and/or recommendations, and review any other environmental or engineering considerations.
- **State and Federal Permit Applications and Processing:** The JCP application will be prepared and submitted to FDEP and USACE to construct the Segment III project. We will request a 15-year multi-use permit authorizing multiple sand sources and multiple delivery methods to provide the County with the greatest flexibility to implement the Segment III renourishment plus maintenance nourishments.
- **Endangered Species Act (ESA) Section 7 Consultation: A Biological Assessment**
resident of Broward County with familiarity with the project area and extensive experience with similar construction support. Additional staff resources will be provided through our West Palm Beach office.

ATM is very familiar with both dredge and truck haul operations, bidding and construction support and will utilize existing, local resources to support the County in this effort.

Nearshore hardbottom monitoring will be provided by Pinnacle Ecological, Inc. (Pinnacle) as a subconsultant to ATM. A summary of their technical project approach is provided in 2c. Page 31

Phase III: Construction Services
ATM will utilize existing staff resources with previous project experience to support project construction. ATM staff have direct experience in contract administration for both dredge and truck haul projects. In addition, we are very familiar with required turbidity monitoring protocols as well as the increased scrutiny which occurs for projects in the vicinity of nearshore hardbottom. Pages 31 to 32

Phase IV: Post-Construction Services
ATM is very familiar with post construction requirements including support for federal audit elements of the project. ATM is regularly engaged in the physical monitoring of nourishment projects and will utilize in house survey support services to conduct required bathymetric and beach profile surveys.

Environmental monitoring will be provided by Pinnacle as a sub-consultant to ATM. Page 32

Atkins engineers are familiar with the costs of nourishment alternatives such as dredge operations, sand mine operations and truck hauling, and marine construction. Our cost-estimating engineers will develop realistic estimates based upon the selected alternatives and project timeline.

Establishing a permitting process encourages proper planning for a proposed project whether it is initially reviewed through NEPA or independently by the non-federal owner. Atkins focused this initial planning on pre-permit application coordination and scoping with both the federal and state agencies. The goals of pre-permit application meetings are to:

- Provide a project briefing to all federal, state, and local permitting and resource agencies
- Elicit input that will assist in final project design and planning
- Identify information required by environmental resource agencies

A NEPA review will be required for future Civil Works and Regulatory actions by USACE in Segment III. This will most likely be an environmental assessment (EA) that will augment and update the findings of the existing Broward County Shore Protection project environmental impact statement (EIS) and the Port Everglades Sand Bypass project EA. This portion of the permitting process will also help focus the project sequence and issues as we enter the permitting process.

Atkins will discuss certain issues and actions with the agencies to gain consensus and potentially expedite the permitting process. These issues include those that the agencies are attempting to define and standardize and involve monitoring requirements and definitions of features such as the ETOF.

The County needs long-term conceptual permits from USACE and FDEP that describe (BA) will be prepared in support of ESA Section 7 Consultation.
- Sand Source Identification: CB&I engineers and geologists are prepared to identify the best sand sources available to Broward County for Segment III.
- Federal Design Document Preparation: CB&I will prepare the document for the County and coordinate the document reviews with the County and USACE. The federal design document will be formulated and formatted in accordance USACE guidance.
- Storm Reduction Benefits Analysis: A key component of the federal design document is the storm reduction benefits analysis. As presently required by the USACE for the purposes of Shore Protection Project formulation and evaluation, a storm damage reduction benefits analysis will be performed using the USACE certified modeling program Beach-fx for the reevaluation of the project shoreline economic feasibility and justification.
- Preparation of NEPA Documentation: It is anticipated that an EA will satisfy the NEPA requirements for the Segment III project with no new impacts. The USACE will review the EA and the least environmentally damaging practicable alternative will be identified for authorization.
- Assistance with the Project Participation Agreement: CB&I will assist the County in developing a Project Participation Agreement (PPA) with the USACE.

Phase II: Pre-Construction Services
Phase II represents the pre-construction phase and will be led by Mr. Mann and Ms. Buck’s groups to prepare contract documents (final construction plans and specifications), secure a Notice-to-Proceed and conducting pre-construction physical and biological monitoring surveys.
the future approach in phases, where each phase can be more easily permitted for construction. The conceptual permit allows for developing a comprehensive physical and biological monitoring plan that leads to a better understanding of the natural dynamics between the nearshore features, such as hardbottom, and managing the shoreline. This understanding can help lessen the liability for impacts to these features as the County focuses on maintaining the shoreline.

Existing permits provide the ability for some projects to move forward, including permits for placing sand on some portions of Hollywood Beach and the entire shoreline of Hallandale Beach. These permits can certainly act as an initial phase in the nourishment in Segment III.

The federal and state permitting processes are well-defined. Atkins staff will develop the permit applications and exhibits for the conceptual permit and the first phase construction permits for sand bypassing and truck-hauling from sand mines, if these are the selected alternatives.

**Phase II: Pre-Construction Services**

The pre-construction surveys described in Phase I need to be initiated when the permits have been issued. These include physical and biological monitoring. Atkins engineers will coordinate the physical monitoring with our hydrographic surveying subconsultant. These will include shoreline and nearshore bathymetric profiling of any areas planned for nourishment. Depending on the timing and extent of the negotiated monitoring program, this may include a baseline survey of Segment III. As necessary, surveys will be performed in the sand bypassing area and around any proposed offshore borrow areas. The nearshore environmental monitoring will be initiated and includes any necessary hardbottom and swimming sea turtle monitoring.

| Preparing Contract Documents: The plans and specifications will be prepared in compliance with Broward County procurement procedures and satisfy all applicable federal contracting requirements. CB&I will provide the County with the technical and programmatic assistance necessary to issue a set of plans and specifications to potential bidders. We will assist the County in answering technical questions as needed during the bidding process. We will assist the County in reviewing the bids and in the evaluation of a low bidder, taking into consideration the capability of the contractor in constructing the project. We will provide written recommendation to the County for awarding the contract. |
| Secure Notice-to-Proceed: In addition to generating project specific engineering, geotechnical and biological information throughout the permitting process, CB&I will formulate the items necessary to receive a Notice-to-Proceed. Pre-Construction Surveys: All pre-construction environmental monitoring will be conducted as detailed in the Biological Monitoring Plan approved by FDEP and USACE during the permitting process. CB&I’s professional land surveyors will survey all FDEP beach profiles and intermediate beach profiles to document the condition of the beach immediately prior to construction. |
| Phase III: Construction Services |
| Phase III construction observations will be led by Engineer of Record Douglas Mann, P.E. and supported by all CB&I departments. For a truck haul nourishment, trained construction observers will be onsite throughout the sand nourishment. |
Atkins staff will assist the County in identifying potential sand mines for source material and truck haulers who perform beach nourishment projects. Atkins staff will participate in the procurement process, developing the specifications documents, participating in the pre-bid conferences, and addressing requests for additional information.

**Phase III: Construction Services**

The terms of the environmental permits will determine some of the services required during the construction phase. We will develop reasonable monitoring criteria and assist the County in complying with the terms and conditions of the permits.

Local Atkins staff are prepared to perform all construction monitoring services. These services include oversight on dredging contractors and truck-haul services. The Atkins team offers both in-house and subcontractor surveying services who can assist in quantity and profile determination during and after construction.

Atkins and/or subcontractors will assist the County in all aspects of project construction within Segment III. Depending on the issues, our local deputy project manager, Francisco Perez, and other appropriate staff are available to participate in pre-construction conferences. Local construction management oversight will be performed on-site during construction activities. The selected geotechnical subcontractor must have a mobile lab to perform QA/QC on sediment to make sure the product placed on the beach is the product specified. Water quality (turbidity) monitoring is required to be independent of both the design engineer and the contractor; therefore, Atkins will once again partner with an independent contractor, Grim Deeper, to perform these services, as needed. Atkins’ local staff are delivery cycle. Additional construction observations will be conducted by our local engineering staff and supervised by Mr. Mann to document that sand placement, dune reconstruction, coastal structure implementation (if required) is being performed in accordance with the plans. We recommend that the County and Contractor meet at least once per week to discuss construction progress and facilitate the resolution of any issue that may arise during the construction within a very public job site. CB&I will attend these meetings.

CB&I has established sand QAQC procedures to ensure upland sand quality. This includes sampling and testing in our CMEC and USACE approved sediment lab in Boca Raton. The sand QAQC sampling procedures will be executed by our construction observer(s) and supervised by Dr. Robertson.

It is common that the contractor provide an independent third party to provide water quality testing in support of the project. CB&I will coordinate the water quality monitoring, perform independent quality control monitoring as required, and ensure that all environmental regulations are adhered to during construction. We will prepare weekly reports to the regulatory agencies of the contractor's compliance with the permits. We will coordinate all these activities with County staff.

CB&I routinely assist our clients with contract administration. We will provide support and coordination to the County to address any issues that may arise, and to address the potential need for change orders. The administration will be handled by Dr. Robertson with engineering support from Mr. Mann.

**Phase IV: Post-Construction Services**

Phase IV includes post-construction monitoring and analysis that will be led by Dr. Robertson with engineering support from Mr. Mann and
### EVALUATION CRITERIA - PROJECT SPECIFIC CRITERIA

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#### Phase IV: Post-Construction Services

Some project-specific post-construction monitoring may be required, but much of this monitoring is the physical and biological monitoring already negotiated and approved by the agencies. Atkins will coordinate all physical and biological monitoring with our subcontractors and local Atkins staff. The post-construction reporting by local Atkins staff will be performed using the data collected.

Atkins’ local construction management services include financial management in preparing for, and providing the County with, the services required for a federal audit. Setting up and managing the financial tracking system early is the key to preparing for audits at the end of the construction process.

Refer to pages 28 to 32 and 88 to 92 for greater detail.

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#### 2. Project Approach:

- **c) Describe the Prime Vendor’s approach to permitting and compliance with regulatory agencies having jurisdiction over the Project.**

**Points Value: 10**

Potential impacts to nearshore hardbottom are the primary regulatory concern for this project. ATM has extensive experience with these resources and has developed effective strategies for the regulatory acceptance of nourishment projects in the vicinity of the project. Key to these strategies are the following:

- Accurately define hardbottom habitats:
  - Utilizing the BMA nomenclature (which has already been accepted by the FDEP define habitat types. In particular note areas of ephemeral hardbottom and listed coral critical habitat.
- Accurately define potential project impacts:
  - ATM has developed specific modeling capability for the assessment of impacts.

Because of Atkins’ engineering and science staff experience on both sides of permitting projects—serving as the applicant representative and as the processor for the agencies—we have defined views on permitting and compliance. Full transparency is a requirement of working for the applicant as a representative to the agencies. Much of dealing with the agencies is about honest and trusting relationships. If these do not exist, the permitting process is much more difficult.

Atkins understands that providing a complete application package to the agencies expedites the permitting process. It not only instills confidence in the agencies that they are dealing with competent staff; it limits the implementation of the Segment III project will require a Joint Coastal Permit (JCP) from FDEP, which provides regulatory authorization, proprietary authorization, a finding of consistency with Florida’s Coastal Zone Management Program and a certification of compliance with state water quality standards pursuant to Section 401 of the Clean Water Act. It will also require authorization by the Department of the Army pursuant to Section 10 of the Rivers and Harbors Act of 1899 and Section 404 of the Clean Water Act. An application to these regulating authorities will generate comment and recommendations by supporting resource agencies including the Florida Fish and Wildlife Conservation Commission (FWC), the US Fish and Wildlife
that has been accepted previously by the FDEP and USACE.

- Consider opportunities to reduce hardbottom impacts in concert with plan optimization: The strategic use of upland sources increases project flexibility and offers opportunities to increase project performance while reducing potential impacts to hardbottom.

The potential modification (extension) of the existing groin field poses another potentially significant hurdle to regulatory approval of the project. In order for such a plan to be allowed under Florida rule and statute the potential impact to the downdrift beach must be quantified and minimized. In this case that would require mitigation through nourishment which would need to be addressed within the overall plan revision and optimization.

Regulatory approval requires consideration of multiple project impacts and issues. ATM is familiar with all state and federal regulatory requirements and conditions for nourishment projects. Page 32

Technical Approach – Biological Monitoring

The technical approach to biological monitoring for the Segment III Shore Protection (Project) may vary depending on final permit requirements and whether existing permits for select portions of the overall Project area will be considered during the permit application process for the entire Project area.

Preliminary Field Studies Required Prior to Permit Submission: Pinnacle will conduct all preliminary field studies necessary to complete the FDEP, USACE, and any additional permit applications that may be required. Preliminary field studies may include: hardbottom diver investigations, in situ nearshore hardbottom characterization, resource delineation verification, shore-perpendicular... number of RAIs, which only delay the permitting of the project or, in the case of USACE, the release of the Public Notice starting the commenting period by the other agencies. Atkins staff offers to provide information in a format that can be cut and pasted into the permit documents, helping agency staff make their tasks quick and easy.

The USACE commenting agencies will continue to be understaffed for some time into the future. The only way to deal with timelines for obtaining the biological opinion or concurrence from these agencies is to understand and account for the timetables in project planning. This required time can be managed to some extent by providing the agency with the information in the required form so that they are prepared to develop the opinion when the project is reviewed. Atkins employees are also prepared and available to quickly answer the reviewer’s questions when once their project review begins. Our team makes sure that all information is complete so that the review process does not stop.

Refer to pages 32 and 92 to 93

Service (USFWS) and the National Marine Fisheries Service (NMFS).

The approach that we take in permitting each individual project starts with early and frequent communication with clients and agencies to provide a coordinated understanding of the purpose and need of the project. This generally includes compilation of historic and current conditions of a project area, the nature and origin of the problem at hand and identification of the most practicable solution. Our engineers, biologists and geologists work with regulatory and resource agency staff on a regular basis and maintain excellent working relationships based on mutual respect and maintaining open lines of communication. These relationships also help facilitate a cooperative environment during negotiation of design, monitoring and mitigation details. Our frequent coordination with the agencies on a variety of projects often allows us to anticipate concerns upfront and address them during the application process to avoid requests for additional information, thus saving time and money for our clients.

CB&I’s professionals are experienced in production of environmental documents for the National Environmental Policy Act (NEPA). We anticipate that an EA will be needed for Segment III and our knowledge of the NEPA process, along with our complete understanding of Segment III’s coastal dynamics and marine resources will efficiently facilitate production of this document. We anticipate that other environmental documents will be required throughout permitting including a Biological Assessment in support of ESA Section 7 consultation and an Essential Fish Habitat Assessment in support of the Magnuson-Stevens Fishery Conservation and Management Act.

A Biological Monitoring Plan will need to be developed for the Segment III project, and we have the historic data and intricate knowledge...
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### Transect Surveys and Video Documentation
- Seagrass surveys, beach, and nearshore sediment sampling, ground-truthing of historical resource data, and nearshore marine turtle surveys.

Pinnacle has conducted successful monitoring studies associated with beach nourishment projects, resource delineation and mapping, and protected species monitoring. Pinnacle’s team will employ Best Management Practices (BMPs) established by USACE, National Marine Fisheries Service (NMFS), US Fish and Wildlife Service (USFWS), FDEP, Florida Fish and Wildlife Conservation Commission (FWC), and Broward County in fulfillment of Project goals.

### Other Potential Preliminary Requirements:
- **ESA Section 7 Consultation:** The Segment III Project area(s) includes designated *Acropora* sp. critical habitat, and *Acropora cervicornis* is known to occur in the Project area(s). Due to the close proximity of the Project area(s) to a known Endangered Species Act (ESA) listed species, an ESA Section 7 Consultation with NMFS and USFWS will likely be required.
- **Biological Monitoring Plan Development:** A Biological Monitoring Plan will be submitted for regulatory approval, prior to Project construction. The Biological Monitoring Plan will describe the methods, schedule, reporting, and deliverables for all biological monitoring (pre-, mid-, and post-construction) required by Project permits. In addition to the development of a Biological Monitoring Plan, permit conditions may require a Coral Relocation Proposal /Plan, Contingency Mitigation Proposal/Plan, and a Coral Monitoring Plan for the Relocated Corals and Mitigation Monitoring Plan if coral relocation and/or mitigation are required for the Project. Pinnacle will engage with state and federal agencies to collaboratively identify mutually accepted conditions.

Permitting a beach nourishment project requires implementation of many specific conditions as outlined in the state and federal permits, as well as the biological opinions provided by USFWS and NMFS. One of the first steps we take once permits have been issued is to go through all the relevant documents and generate a compliance matrix for our clients, subconsultants and contractors to follow to ensure that no requirement is left undone and all deliverables are submitted on time. We understand that serving as the County’s agent means assuming responsibility and accountability for the Segment III project and would be honored to take on this charge.

Refer to pages 62 to 65 for greater detail.
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- protocols for monitoring the nearshore habitats in the Project area(s).

- Seagrass Survey(s); Pinnacle’s scientific team will follow the guidelines as set forth by the NMFS, USACE, and FDEP for any seagrass surveys which may be required for the Project (permit submittal and/or permit compliance)

**Anticipated Biological Monitoring Necessary for Permit Compliance**

**Establishment of Nearshore Hardbottom Permanent Transects:** Pinnacle will use the information provided in the hardbottom habitat map and hardbottom characterization report when determining the locations of permanent transect establishment.

**Pre-Construction Biological Monitoring:** Specific details about the number and length of hardbottom transects to be surveyed, the need for control stations outside of the Project area(s), potential *Acropora cervicornis* (or other ESA-listed species) specific monitoring, artificial/mitigation reef monitoring (if required), nearshore turtle surveys, and the timing of surveys will be dependent on permit specific conditions and details outlined in the Biological Monitoring Plan. However, nearshore hardbottom monitoring is expected to be required at a minimum. Pinnacle scientists will use BMPs and follow recommended guidelines, and permit conditions when completing any required Project monitoring. Tasks proposed include:

- Pre-construction nearshore hardbottom survey
- Hardbottom edge mapping
- Nearshore monitoring transects
- Sediment depth measurements
- Sand-hardbottom intercept measurements
- Video documentation
- Benthic Characterization: BEAMR
- Qualitative Data Collection
- Pre-construction survey report

*During and/or Mid-Construction Biological Monitoring:* Permit conditions may require specific during and/or mid-construction biological monitoring during Project construction. Pinnacle will use best management practices and follow recommended guidelines, and permit conditions when completing any monitoring required during Project construction to ensure project success. If it is determined that an offshore sand source will be used for any portion of the beach nourishment activities, biological monitoring at borrow site will likely be required. Borrow site biological monitoring may include monitoring of hardbottom resources located within a fixed distance (up to a maximum of 1,000 meters) around the borrow site(s) during sand collection activities and around pipelines during sand transport.

*Post-Construction Biological Monitoring:* Post-Construction Nearshore Biological Monitoring Surveys will be conducted annually (each summer, as close to baseline survey dates as possible) for three (3) to five (5) years following Project construction completion, depending on permit requirements. During Post-Construction Surveys, scientific divers will delineate the nearshore hardbottom edge, and collect sediment depth measurements, sand-hardbottom interval measurement, video documentation, and benthic characterization data along the permanent transects and quadrats established during the Pre-Construction Survey. Data collection will follow the previously described methods. Each Post-Construction Report will include the results from the current monitoring event, with a comparison to the results from the Pre-Construction Survey (baseline) and any previous Post-Construction surveys. Results will discuss general descriptive/summary comparisons among all monitoring events. Statistical analyses (details below) will only be
used when comparing the current and baseline surveys. Post-Construction Report deliverables will include the deliverables described above for the Pre-Construction Report, with the addition of the comparison data.

**Schedule and Deliverables:** Pinnacle will follow all permit guidelines and recommendations for monitoring and reporting to help ensure project success. Following each monitoring event (preliminary, pre-construction, and postconstruction) Pinnacle will submit a detailed report describing the methods, data and observations, and results (in tabular and/or graphic form where appropriate), for each aspect of the Project.

**QA/QC:** Pinnacle’s monitoring team will participate in cross-training with one another to verify correct species identifications and survey methods using standard QA/QC control procedures at the beginning of each monitoring season. Species identification QA/QC results will reflect at least 90% consistency. Any team member(s) scoring below 90% will receive additional training and will not participate in data collection until the 90% minimum requirement has been met. QA/QC cross-training results will be provided to FDEP upon request. During biological monitoring surveys the Project Manager and/or QA/QC Manager will confirm that all necessary data was collected in an appropriate manner at the end of each field day and/or transect completion (dependent upon which task(s) is being performed on a given day). Field data entered into Excel spreadsheets will undergo QA/QC by someone other than the individual who completed the original data entry to confirm 100% accuracy of the data. A summary of the data entry QA/QC procedures will be submitted to FDEP, along with the raw field data (copies of field sheets and raw Excel spreadsheets) after completion of each monitoring event.
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### Regulatory Engagement:

Pinnacle will utilize its expertise and knowledge of environmental rules and regulations to permit and guide Broward County through responsible and sustainable development while remaining compliant with local, state, federal, and international laws. Pinnacle will work collaboratively with all regulatory and government agencies to develop BMPs to ensure Project success. Staff will attend all necessary pre-application meetings, pre-construction meetings, and any postconstructions meetings to provide input. Pinnacle routinely engages with government agencies when developing permit applications, and management plans for the collection, management, and quality control of coastal and oceanic data. Pinnacle has experience developing successful solutions to complex and occasionally controversial marine ecological programs. Additionally, Pinnacle has developed field and laboratory tests to evaluate data accuracy, manage data, and support QA/QC methods. Pinnacle routinely collaborates with regulatory agencies including: USACE, US Coast Guard, NMFS, National Park Service, Broward County, FDEP, Florida Inland Navigation District (FIND), and FWC when completing projects. Pinnacle will provide its team of qualified marine scientists to ensure scientific quality control for all field data collection and data analysis, manage scientific diver safety, and to ensure deliverables are submitted within the established schedule.

Refer to pages 32 to 49 for greater detail.

### Project Approach:

**d) This Project is of great sensitivity to the protection of upland infrastructure and habitat along the southern County shoreline. Describe the Prime Vendor’s**

Port Everglades produces a near total interruption in the net transport of beach sand from north to south resulting in deficits of sand supply to the Segment III shoreline. This behavior is the fundamental cause of the erosion stresses experienced within the area. This tendency is further exacerbated by seaward development (encroachment) onto the Broward County beaches are vital to Broward County’s infrastructure and economy. They

### The Federal Project:

The Segment III Shore Protection Project was authorized by Section 301 of Public Law 89-298 in 1965 but construction did not occur until 1976 in the John U. Lloyd section and 1979 in the Hollywood/Hallandale section. The project was initially authorized for 10 years following initial construction but authorization was extended to...
### Project Specific Criteria

#### Evaluation Criteria - Points Value: 5

- Understanding of the Segment III Shore Protection Project and the impact this Project will have upon the County.

Refer to pages 49 to 50 for greater detail

| Beach resulting in chronic areas of minimal beach width. The sand deficit has been addressed historically through beneficial use of dredge material from Port Everglades (when beach compatible and available) and through a series of beach nourishment events. While offshore sand sources have been the primary source for nourishment historically, it is acknowledged that these sources have been nearly exhausted and only a limited volume remains. Given this condition the County must consider the following alternatives for future sand sources:
- Implement a sand bypassing program at Port Everglades
- Utilize upland sand sources to a greater extent
- Consider the use of distance (offshore) sand sources

Plans for sand bypassing at Port Everglades are in process and represent the only renewable sand source within the future alternatives. The use of upland sources has increased in use regionally, though at present no limitations in available supply are noted, though this may change within long term utilization of these resources by multiple nourishment programs. To date, distant offshore sources have been studied but have not been permitted. It is additionally noted that Bahamian sand cannot at present be utilized for federal nourishment projects.

An existing groin field was constructed south of Port Everglades to mitigate erosion in this area and an extension of the groin field has been considered. Such an extension would reduce advance fill quantities in this immediate area but would not regionally address the sand deficit issue.

Refer to pages 49 to 50 for greater detail

| Attract over 7 million visitors annually, who spend over $400 million in the County. Broward’s beaches also contribute approximately $548 million annually to Broward County’s economy, create approximately 17,700 full-time equivalent jobs in the County, add $1.4 billion to County property values, and impact local government tax revenues by $29 million annually. Additionally, Broward’s beaches protect over $4 billion in shorefront property, structures, and infrastructure from storm wave damage. ([www.broward.org](http://www.broward.org))

Refer to page 33 and 93

| 50 years (to expire in 2026) in 1991 following a Section 934 Reevaluation Report. The John U. Lloyd section was renourished in 1989 and 2005/06 and the Hollywood/Hallandale section was renourished in 1991 and 2005/06. Portions of Dania Beach were nourished during the 2005/06 project. The project is primarily intended to reduce storm damage to upland infrastructure and secondarily to provide recreational beach space for visitors.

The Impact to the Economy: The coastlines of Broward County are a major driver for the local economy and Segment III is no exception. According to sunny.org, the tourism industry is responsible for 180,000 jobs and in 2016 alone, the tourist development tax raised $60.5 million. Segment III extends from Port Everglades Inlet to the Miami-Dade County line. It includes the Dr. Von D. Mizell-Eula Johnson State Park (Mizell-Johnson) at the north end and the three cities of Dania Beach, Hollywood and Hallandale to the south. The popularity of Segment III is on full display during the weekends where long lines of cars wait at the Mizell-Johnson entry gate and the parking lots in Dania Beach, Hollywood and Hallandale fill early. Those parking spaces stay full throughout the day as residents and visitors enjoy the State Park, play on the beaches, snorkel or dive on the nearshore hardbottom, walk the boardwalk, and patronize the many hotels and restaurants that make Broward County a tourist destination. There is no doubt that the recreation value of Segment III’s beaches and reefs are of paramount importance to Broward’s economy.

The Impact to Other Government and Academic Institutions: The project provides direct protection to several government and academic institutions located on the coast in Segment III. The U.S. Navy, U.S. Coast Guard, NOAA, and Nova Southeastern University’s Oceanographic Center are all located at the north end of Segment III near the Port. These
are multi-million dollar facilities provide jobs for hundreds of people in Broward County.

The Impact to Port Everglades: Maintenance of the project further provides protection to portions of Port Everglades. Without the project being initiated and maintained since 1976, the protection of the barrier island remnant may not have provided the necessary storm buffer to allow Port Everglades to grow and expand.

The Impact to the State Park: The Segment III project supports the Mizell-Johnson State Park by providing beach habitat for recreational and wildlife use. The park is a tremendous tourist draw as well as a quiet place for local residents to unwind. Since Mizell-Johnson is located directly south and downdrift of the Port Everglades south jetty, the shoreline is significantly set back compared to the shoreline north of the inlet due to the lack of sediment bypassing.

The Impact to Sea Turtles: The environment is also a key characteristic of the Segment III area. Continued maintenance of the beaches further supports nesting habitat for these species.

Refer to pages 66 to 73 for greater detail.

2. Project Approach:
   e) Describe the methodology proposed for budget control and the steps the Prime Vendor will take to complete the Project within the Project budget.

Points Value: 2

ATM uses several management tools to ensure the successful completion of projects for our clients. Day-to-day control of the project's technical, schedule, and financial status are the responsibility of the Project Manager from initial project costing through the final deliverable and invoice. Michael Jenkins, PhD, PE, shall serve as Project Manager for this contract. Mr. Jenkins has considerable experience with similar coastal projects throughout Florida. He will be responsible for personally ensuring the quality, timeliness, and cost effectiveness of tasks conducted in support of the County, and dedicated to fully meeting the County’s needs and requirements under this solicitation.

As the prime consultant, Atkins will first review the scope of work with the County to ensure, to the maximum ability possible, that each scope item is addressed under this contract. Together we will develop a conceptual scope and budget to confirm that all key project elements are contained for each work task.

Matching the appropriate level of technical experience and hourly costs per task will be the primary goal of our project manager, Adam Gelber, as he develops a detailed cost estimate and an accurate budget. If a significant disparity occurs between scope, budget, and contract expectations, Mr. Gelber will conduct further analysis to assist with finding a balance.

CB&I will complete the Segment III shore protection project on budget. This is accomplished by appropriate contracting, utilization of experienced staff, and applying CB&I’s project management tools. Early and effective communication is a priority for Dr. Robertson and our staff. We will work with Broward County to develop a detailed project schedule and track performance, adjusting the overall schedule to accommodate any new developments as the project proceeds. The key to keeping on schedule is a detailed, realistic work plan that identifies deliverables and key meetings. Dr. Robertson will provide Broward County with monthly progress updates integrated with billing details. Monthly reporting.
### EVALUATION CRITERIA - PROJECT SPECIFIC CRITERIA

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ATM’s project management procedures include the following:
1. Clear definition, in agreement with the client, of the project objectives/scope of work including project sub-tasks, performance milestones, and scheduled deliverables.
2. Accurate budgeting of the level of effort (man-hours plus non-labor costs) detailed for each project sub-task and the overall project.
3. Weekly analysis of the cost vs. performance reporting allowing the Project Manager to promptly resolve any potential schedule delays, technical difficulties, or cost overruns.
4. Regular communication with the client representative(s) regarding project performance and any project-related information.

In addition to regular project team meetings to discuss workload and progress, ATM uses BST Enterprise Project Management Software to ensure schedules and budgets are on track and remain within budget during the life of the project. The BST is a powerful tool which allows the Project Manager to keep abreast of all project charges and completion levels. The project management software ensures that the Project Manager is aware of any potential deviations between the budget and expenses. Detailed analysis of the project management reports can provide a means by which to bring projects with overrun potential back on track. Use of this software on a daily or weekly basis allows a Project Manager to proactively avoid project overruns.

As a seasoned Project Manager, Michael Jenkins, PhD, PE, will manage the entire project team and all activities to address the County’s needs and goals for the project, on time and within budget. For the duration of this contract, he will be responsible for the following duties:
1. Allocate and approve all project charges;
2. Conduct weekly and monthly reviews of project status reports detailing costs and between scoping the project and meeting the County’s needs. Atkins views this contract as a collaborative technical work product where that collaboration extends to project budgets. Once a budget has been developed, refined, and approved, it becomes a benchmark against which project progress is measured.

Atkins’ depth and breadth of resources enables us to provide labor and cost efficiencies.

Managing this contract is based on a simple but important premise: the projects must be organized, directed, and controlled to enable timely completion with the least possible expenditure of resources. Atkins will accomplish this through the following efforts:
- The project team will confer with the County to develop an understanding of County objectives and expectations, available data, applicable constraints, and opportunities for cost savings. In this way, we will tailor our services to satisfy the exact scope of work for each project.
- Before work begins, Atkins will develop detailed work plans for the major activities. The work plan will include schedules, budgets, deliverables, and QC requirements at all subtask levels.
- We will maintain effective project control through a structured project management plan. The proposed task manager will manage and direct the activities of all support staff. He or she will ensure that all work activities proceed as planned and that the project budget and schedule requirements are met.
  - After a schedule is prepared, the task manager will receive input and meet with task support staff on a weekly basis to review the work in progress.
  - On a monthly basis, Atkins will compare budget expenditures with schedule results to determine if the level of effort and the achieved results are consistent with the also summarizes the anticipated progress for the following month, as well as any critical issues that may affect the project schedule and budget. Dr. Robertson is committed to providing the County with constant communication to ensure project success.

**Contracting**: Based on the published budget for this project, we believe the County has developed an appropriate budget for the design, federal approvals, permitting, construction services, and post-construction monitoring. We would propose to negotiate scopes of work with the County on a lump sum price basis such that the burden of potential cost overruns transfer from the County to CB&I.

**People**: CB&I has the experienced staff to efficiently and accurately perform the required tasks to complete the scope of work. We are confident that the breadth of experience our staff can bring to the County will result in a successful and sustainable project, while maintaining the budget. Our references and experience with projects of similar scale and sensitivity provides the County with the assurance of our skill for meeting and exceeding your expectations.

**Tools**: A well-managed project will remain within the allotted budget. CB&I utilizes two tools to manage our projects. These include a management system and a financial system. In an effort to improve project quality. Tested systems and tools established over time to effectively and efficiently manage each unique project allows our project manager to align the efforts of engineers, scientists, and surveyors to meet the goals of Broward County. CB&I consistently provides services to satisfy project requirements that meet or exceed client expectations.

Refer to pages 75 to 77 for greater detail.
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| 3. Past Performance: Max Total – 23 Points | ATM has provided comprehensive coastal engineering support to communities throughout Florida for more than three decades.  
Refer to pages 52 to 66 for full list of projects  
Refer to page 72 for Vendor Reference Verification Forms | Atkins brings an extensive array of hands-on experience gained from similar projects executed in Florida. The following project summaries describe Atkins’ specific and comparable work to the Broward County Segment III Shore Protection project. All projects were completed on time and within budget.  
Refer to pages 37 to 47 and 95 to 109 for full list of projects  
Refer to pages 113 to 115 for Vendor Reference Verification Forms | CB&I has a long history of designing, permitting, and providing construction engineering services in support of federal and nonfederal shore protection projects. These projects are subject to federal government review and approval with no statutory time clocks on their reviews. Despite adequately staffing these projects and diligently performing the work, federal shore protection projects are often delayed by the governmental review and approval processes.  
Refer to pages 78 to 87 for full list of projects  
Refer to pages 228 to 244 for Vendor Reference Verification Forms |

#### a) Describe the Prime Vendor's experience on jobs of similar scope and nature to the Project. If any of these jobs exceeded the original award amount or time for completion, provide an explanation of the circumstances that lead to these results. These projects can also be referenced on the Vendor Reference Verification Form.

**Points Value: 15**

- Technical progress of the sub-tasks and overall project;
- Track project milestones against budget status;
- Regularly assess the accuracy of the current and future budget projections;
- Communicate monthly with County staff regarding project performance and costs incurred.  
Refer to page 51

#### b) Describe the Prime Vendor's past experience working with governmental agencies and relevant regulatory agencies such as the Florida Department of Environmental Protection (FDEP), U.S. Army Corps of Engineers (USACE), National Marine Fisheries Service, Florida Fish and Wildlife Conservation Commission and U.S. Fish and Wildlife Service (FWS).

**Points Value: 5**

- ATM is regularly engaged with state and federal regulatory agencies regarding beach nourishment initiatives including nearshore hardbottom. ATM has a proven record of proactive engagement which is best exemplified by the number of projects that we have been able to successfully design, permit and construct. ATM has a well-deserved reputation for our technical ability to design and accurately quantify the performance of nourishment projects in the vicinity of nearshore hardbottom and engage proactively with regulatory agencies regarding hardbottom issues.
- ATM’s project manager for this effort, Michael Jenkins, PhD, PE, has more than twenty years’ experience working with governmental agencies and relevant regulatory agencies such as the Florida Department of Environmental Protection (FDEP), U.S. Army Corps of Engineers (USACE), National Marine Fisheries Service, Florida Fish and Wildlife Conservation Commission and U.S. Fish and Wildlife Service (FWS).  
Atkins’ staff has the technical acumen to support the environmental permitting and compliance needs within most geographic locations. Our project experience includes permitting services and innovative coordination among regulatory agencies, as well as a history of serving federal, state, and local agencies as clients. For instance:
  - For USACE, Atkins provided 34 full-time scientists and project managers in support of the Comprehensive Everglades Restoration Plan and several South Florida Everglades Restoration projects that predate it, including the Indian River Lagoon-South project and the Broward County Water Preserve. Acting as an extension of USACE District staff, Atkins has provided comprehensive regulatory support to our clients in Florida, we have seen the transition of the regulatory process towards a higher level of environmental protection. Resource agencies, such as FWC, USFWS, and NMFS are engaged in the permitting process and require current and accurate data to support their conservation recommendations to the regulatory agencies. We work closely with these agencies to determine their particular needs, identify the most relevant data to support their assessments and maintain...
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experience with relevant state and federal regulatory agencies through similar nourishment efforts. He served as the only outside team member on the FDEP’s JCP Rapid Process Improvement (RPI) initiative. This effort was focused on identifying and implementing improvements to the Joint Coastal Permitting process. As a member of FDEP’s Turbidity Protocol Review Committee he provided technical review and recommendations regarding turbidity monitoring protocols within FDEP JCP and ERP permits. On the federal side, Dr. Jenkins has contributed to several federal authorization studies and has had numerous proactive engagements with local regulatory interests regarding a range of coastal issues.  

Refer to pages 66 to 67

(as managing partner of a joint venture) provided technical expertise in the following disciplines:  

- Programmatic and project management, including planning, budgeting, scheduling, and gatekeeper functions  
- Hydrological, hydraulic, and groundwater modeling  
- Multi-objective comparative and trade-off analysis  
- Geology and ecology (e.g., marine, estuarine, freshwater, endangered species, exotic species)  
- Engineering cost/pricing estimating, design and procurement support, and construction administration services  
- Implementation of adaptive management techniques  
- Organizational management and process improvement consulting  

- For the USFWS, Atkins provided ten aerial surveys of the West Indian manatee throughout the Puerto Rico archipelago from 2010 to 2014 in support of the Agency’s 5-year review of the conservation status of that species.  
- For FDEP, Atkins served their Bureau of Beaches and Coastal Systems for more than ten years through a general engineering services contract. Acting as FDEP staff, Atkins was responsible for processing JCP applications from permit issuance to project construction and completion to ensure permit compliance.  
- For the Florida Fish and Wildlife Conservation Commission, Atkins provided the FWC Boating and Waterways Section with services to promote the use of State waterways for safe and enjoyable boating, along with technical expertise such as structural and coastal engineering support. Task assignments include planning; management; assessment, design, and permitting of coastal

ongoing coordination to ensure that the process is not delayed.  

Although our experience often allows us to anticipate the information needs of the regulatory and resource agencies, there are also times when we are tasked with producing a new type of plan or protocol to support a project. For example, we recently received a request from FWC to provide a Sea Turtle Protection Plan for the new Pompano Beach Fishing Pier. We coordinated with FWC to understand their goals for the plan, communicated with local and County staff to gather the data and prepared a Plan that was well received by FWC and will provide pier managers with protocols for protecting wildlife. Another example occurred during the evaluation of listing seven coral species under the Endangered Species Act. We coordinated with the Corps and NMFS to ensure that a conference opinion would be requested so that the proposed coral species would be covered by ESA Section 7 Consultation once listed. Additionally, we coordinated with FDEP, the Corps, and NMFS to make sure the monitoring protocol we proposed to assess these species was appropriate since none had been established yet.  

Our Boca Raton group has several past and current projects working directly with FDEP and USACE. CB&I assisted FDEP with review of USACE’s southeast Florida SAND study. We were instrumental in updating USACE’s database to provide more accurate results and apply schemas to the GIS data to make it compatible with FDEP’s ROSSI online database. CB&I is currently assisting FDEP with updating their southwest borrow area database by interviewing local stakeholders, updating the geodatabase and developing custom GIS tools that help the State manage their offshore beach-compatible resources. We developed and maintain an online geodatabase for USACE’s Regional Sediment Management
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structures; boating vessel studies and education; and derelict vessel removals.

Atkins has a long history of assisting clients through a maze of environmental laws and regulations, and we have an excellent rapport with regulatory staff in multiple regions of the country—a direct result of working closely with these agencies on many projects. Atkins develops efficient and innovative solutions to complex regulatory problems. We have extensive experience conducting research and investigations and preparing studies and documents that support the NEPA process and comply with requirements of various acts (refer to page 48 to 49 for full list).

The following are some of the relevant highlights of our expertise:

**Federal and State Wetland Permitting:** Atkins’ technical team has a great deal of experience and expertise with USACE Section 404 (Clean Water Act) permitting, Section 10 (Rivers and Harbors Act of 1899) permitting, and joint federal and state permitting throughout the United States.

**Mitigation:** When mitigation is required, Atkins’ technical experts understand the methods to determine the level of mitigation required for the project impacts. Our experts assisted in the development of many of the assessment methods, including the Wetland Rapid Assessment Method (WRAP), the Rapid Assessment Method (RAM) for many regions, and the Uniform Mitigation Assessment Method (UMAM).

**National Pollutant Discharge Elimination System (NPDES) compliance:** Atkins has extensive experience with NPDES permit-related services. During design, our team is cognizant of the pollution prevention measures that must be taken on each project, and completing NPDES permit applications is a (RSM) program that requires working directly with the Jacksonville District as they are RSM’s center of expertise (https://gim2.cbi.com/RSM/).

CB&I’s remote sensing group works with USACE to develop GIS tools that automate the quantification of shoreline and volume change derived from LiDAR data. Our Boca Raton office is currently working with the City of Long Beach, New York on the USACE beach program by reviewing LRR and PPA documentation to ensure that the selected project is in the City’s best interests.

CB&I was also selected by the USACE Regulatory Division to draft an Environmental Impact Statement for the proposed Central Palm Beach County Shoreline Stabilization Project. This work is nearly complete and it is anticipated that an executed Record of Decision will occur in summer 2017.

Refer to pages 88 to 90 for greater detail.
### 3. Past Performance:

- **c)** Provide examples of both time-sensitive and budget-constrained projects completed in the past, and describe what methods were used to meet time and budget requirements in successful previous projects of the same nature.

**Points Value:** 3

As ATM is actively engaged in nourishment programs throughout Southeast Florida, we have considerable experience with program constraints. By their very nature, nourishment projects experience a range of time and budget challenges. The foremost challenge in terms of time is typically the restrictions to construction activity associated with turtle nesting. ATM has addressed this constraint through a range of approaches including the development of bidding provisions which provide the contractor with the greatest flexibility to efficiently use the construction window. This strategy can increase the number of competitive bids and result in cost savings. We have also phased projects to allow for parallel placement by both dredging and truck haul operations. The Town of Palm Beach projects in 2015 is a recent example of this strategy in which dune construction was initiated prior to arrival of the dredge using in situ sand from the beach template that was then replaced by dredge operations. This strategy resulted in both time and budgetary savings. In total, the utilization of the offshore sand source for dune construction represented a cost savings for the Town on the order of $2 million dollars. ATM is regularly engaged with the relevant regulatory agencies regarding time extensions to allow for construction completion. Even if they are not needed, proactive engagement regarding the potential need is generally recommended.

ATM is very familiar with the budgetary constraints of nourishment programs and has developed a range of strategies to realize programmatic cost savings. When possible, ATM is very familiar with the budgetary constraints of nourishment programs and has developed a range of strategies to realize programmatic cost savings. When possible, regular part of our services. Over the past 5 years, we have provided NPDES permits for nearly 100 projects nationwide, many of which required stormwater pollution prevention plans (SWPPP).

Refer to pages 47 to 50 and 110 to 112 for greater detail.

Atkins provides technical services to nearly all sectors of the economy from oil and gas to local state and federal governments as well as aerospace. These clients have various technical needs but the two items that are the same between all industries are the requirements to be on time and on budget with deliverables.

Accomplishing these objectives enables predictability across all levels of a project, including those that are active or those that are pending future actions that require appropriations. Predictability is something that Atkins demonstrates very well. This predictability is often required because our clients seek and require grant funding to offset local area sponsor cost contributions. These issues are real and current for projects of this nature upon which Broward County is embarking.

One of Atkins’ projects is the South Point Park Fishing Pier, for which the City of Miami Beach was seeking substantial grant funding from the Florida Inland Navigation District (FIND). So much funding was needed that if the permitting deadline was not met as set forth by the FIND grant, the project would not go to construction. This time-sensitive nature, when combined with permitting projects with USACE and more specifically, those projects involving NMFS presented a challenge.

At a minimum, a project’s success or failure should not rely on USACE issuing a permit at a predictable time that involves the NMFS.

**Time Sensitive Projects:** An example of a time-restricted project is the State of Louisiana Emergency Berm project that was undertaken by CB&I in response to the BP oil spill in 2010. The State determined that to protect portions of their marsh system from the oil spill, sand was to be dredged and placed in berms in front of the marshes. The Governor of Louisiana convinced USACE to mobilize most of the dredge industry to the Louisiana coast to dredge and pump sand. The State’s problem was they did not know where to get the sand, and they needed borrow areas as soon as possible. CB&I’s role was to locate beach compatible sand for the entire project. CB&I staffed two 24 hour a day sand search investigations in Louisiana for two months in order to provide the dredge industry with the borrow areas necessary to protect the marshes. All work was completed on time and dredging was not delayed.

Another CB&I time restricted project was an opportunistic hot spot maintenance dredging project for the Town of Longboat Key. The project for the Town of Longboat Key. The...
ATM has linked regional projects into a single construction effort to reduce mobilization costs. We have also implemented the strategic bidding of projects to take advantage of dredge equipment availability and when necessary directed the re-bidding of projects to realized cost reductions. The 2012 Jupiter Island Nourishment project is an example of this strategy. Re-bidding of the project allowed for the realization of cost savings on the order of $1 million dollars. Refer to page 67

Early on in the preparation of this project, having completed prior permitting projects of this nature that involved NMFS, the Atkins team commenced the job with the sole focus that we needed to get the project details to USACE as soon as possible to commence consultation with NMFS. This early coordination with USACE/NMFS enabled us to understand the permitting constraints that led to fishing pier design changes early in the process, resulting in reduced consultation times to avoid and minimize perceived impacts to threatened and endangered species.

Even with advanced and early coordination with USACE and a detailed avoidance and minimization plan for this project, the permits were issued just prior to the deadline from FIND expiring. The fishing pier remained on schedule and was completed to add to the enhanced experience of those that live in and visit Miami Beach.

Refer to pages 50 to 51 and 112

Town had recently received a $1M reimbursement from FEMA for a previous storm impact. At the same time, a persistent hot spot was threatening upland property and lateral beach access, which is very important due to the large number of beach walkers. At the same time, the Town realized that the City of Sarasota was hopper dredging their beach at Lido Key. The Town called CB&I to see if it was possible to get the same dredge for their project and repair the beach with the $1M funds. By the end of the day, we replied it is feasible with cooperation of the regulatory agencies. CB&I was able to modify existing State and Federal permits, develop a set of plans utilizing an existing borrow area, assist in negotiating a contract with the dredger, and provide construction engineering services for an approximately 100,000 cy project all within 45 days! We accomplished this by dedicating multiple engineering, surveying, and geology staff to this short-term project.

Budget Constrained Projects: An example of a budget constrained project that was successfully completed by CB&I was the 1995/96 renourishment of the Town of Longboat Key. The Town had undertaken its first nourishment in 1992/93 which was funded through a voter approved bond referendum. The initial project (designed by a firm other than CB&I) underperformed due to sediment grain size issues combined with a single extratropical storm impact. CB&I was retained and determined that the underperforming beaches could be repaired with coarse sand nourishment. The challenge was that the Town had only $6.3 million remaining within the bond proceeds, and needed a minimum of at least 550,000 cubic yards of sand. CB&I staff determined that the Town could achieve their goals within their budget by creatively bidding the project. The Town, in bidding the work, stipulated that the total budget was $5.85 million with the remainder of the bond held in reserve. Under CB&I’s direction, the Town
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**4. Workload of Firm: Max Total – 5 Points**

*For the Prime Vendor only, list all completed and active projects that the Prime Vendor has managed within the last five years. In addition, list all anticipated projects that Prime Vendor will be working on in the next five years. Projected projects will be defined as a project(s) that the Prime Vendor has been awarded a contract but the Notice to Proceed or work authorization has not been issued. Identify any projects that the Prime Vendor worked on concurrently. Describe the Prime Vendor’s approach in managing these projects; were there or will there be any challenges for any of the listed projects? If so, describe how the Prime Vendor dealt with, or will deal with, the listed project’s challenges.*

**Projected Team Workload:** While key team members are actively engaged with other regional clients, the completion of multiple recent construction projects has increased the availability of key leadership and technical staff. All have availability to adequately fully support this contract. All staff members will be available throughout the duration of the contract to satisfactorily provide the services for which they have been assigned.

**Recent Team Workload:** Recent team workload has primarily focused on long-standing domestic government clients, which have historically been the primary focus of the ATM coastal team. This work has been sufficient to sustain ATM’s core capabilities and resources.

**Current and Projected Team Workload:** The ATM coastal/marine engineering team has year-to-date operated at a total net 72 percent team-wide utilization rate (inclusive of PTO and holiday time). This rate is sufficient to maintain team and company profitability but also indicates additional available workload capacity. Additional capacity is also available through the utilization of contract employee resources and intra-office resources not represented within this utilization rate.

Given the completion of four major renourishment construction projects over the past two years, the level of effort required to support established clients is anticipated to be greatly reduced in the short to medium term.

Atkins is committed to providing Broward County with a core team of full-time staff dedicated to this project. The list of projects highlights our South Florida coastal-related contracts in progress or completed in the past 5 years. We have no upcoming projects to report that are not yet in progress.

Most, if not all, of the projects in the following list have been executed concurrently with others. Atkins continually monitors and forecasts the technical resource needs of assigned projects, and schedules those resources for on-time delivery. The Atkins team has the depth of resources and technical expertise to address all of the services that may be required under this contract.

While our organizational chart provides a snapshot of anticipated project resources, Atkins has ample additional reserve capacity, backed by our national staff, to handle numerous assignments simultaneously. As tasks are assigned and scopes of work are developed, our core team will assign the appropriate number of staff with the required skill sets to complete each task with careful attention to cost efficiency.

Contrary to a small firm, during periods of project inactivity, Atkins has the flexibility to quickly reassign our assets to other projects, knowing that these resources must be reattained once activities resume. Careful planning is the key to successfully managing expected workloads.

CB&I is proud of its history of maintaining long-term clients. Our pride is based on working to complete projects on time and within budget. Based on an analysis of our current and projected workload, we have determined that there is sufficient capacity and foresee no future time where a workload conflict would impact services to Broward Segment III. This evaluation is based on workload forecasts and employee utilization rates. Monthly workloads are forecast a year in advance, which allows us to plan accurate project schedules. Regardless of forecasts, Broward County has been identified by CB&I as a top priority.

Our coastal engineering management approach starts with identification of the project team. Each team member is assigned duties and those duties are planned and agreed upon by supervisors. Our holistic approach to coastal engineering allows for CB&I to adapt to busy time periods by pulling staff from other offices. The staff identified for this project are fully committed to their roles in order to complete a successful Segment III project.

**Projected Projects:** CB&I has a few projects where our coastal engineering group has been awarded a contract but work has not yet been authorized. We were recently awarded a project by Massachusetts Office of Coastal Zone Management for the characterization of offshore sand resources. This project will largely be geotechnical and geophysical and may involve some members of our Segment III

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Refer to pages 91 to 93 for greater detail.
We anticipate significant availability to support Broward County given this condition. 

*Existing Contracts:* As required by this RFQ, we have provided a list of our completed and active coastal engineering projects managed by the ATM-WBP coastal team in the last five years along with our anticipated projects for the next five years. The majority of our coastal contracts are continuing services contracts. Specific projects are completed as task orders or works orders issued under the continuing services contract by the client. (see pg. 68-69 of Submittal for list of projects)

*Approach to Contract Management:* The ATM project team is specifically focused on the management of coastal engineering specific continuing services contracts similar to that proposed under this solicitation. ATM has maintained long term supportive relationships with multiple Florida coastal communities similar to Broward County. All of these projects are well established with existing multi-year management programs. ATM has supported project construction for four major renourishment projects within the past two years. This required the effective management of a range of regulatory, budget, contract and construction issues. As such, the majority of ATM’s established client base are currently engaged in long term monitoring and management phases within their programs and will require less direct support from ATM within the short to medium term.

This condition does not preclude future challenges and it is notable that major hurricane impacts are an ongoing concern for all coastal programs that require immediate and dedicated support when they occur. ATM has a recent experience with such efforts associated with hurricane Matthew this past year. ATM supported a post storm truck haul project for the Sebastian Inlet District following Matthew that was bid within 30 days of the projects and ensuring that appropriate resources are assigned to maintain schedule and budget commitments. As an extension of your staff, we will ensure that the right people are available at the right time—and only when they are required.

*Refer to pages 52 and 116*

List of projects provided on page 53 and 117

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**Project Challenges:** Broward County has significant nearshore hardbottom within the immediate vicinity of the beach. In Collier County, CB&I was able to reduce project cost through innovative design that we would like to apply to Broward County. The design of the 2006 Collier County beach renourishment project included a process that saved the County money by avoiding hardbottom coverage. The principal design process included selection of a superior sand source, an optimized beach width and development of an equilibrium profile using a new method. The goal was no coverage, but in negotiations with FDEP, 1.09 acres of mitigation was agreed to as part of permit approval. The beach built in 2006 has covered no hardbottom through 7 years of monitoring. Convincing FDEP to accept 1.09 acre of mitigation was difficult, but the additional effort by CB&I and the County saved the County $6.2 million, which was well worth the extra effort.

The savings is based on a nourished profile created using coarser sand, which is steeper and has an estimated toe of fill (ETOF) significantly landward of the existing finer sand beach profile. Should the Segment III shoreline be nourished with coarse upland sand, CB&I will help the County negotiate significantly less hardbottom coverage while maximizing the fill profile and protective properties of the nourishment project using our experience and data from Collier County.

*Refer to pages 94 to 98 for greater detail*
EVALUATION CRITERIA - PROJECT SPECIFIC CRITERIA

<table>
<thead>
<tr>
<th>VENDOR QUESTIONNAIRE FORM</th>
<th>Applied Technology &amp; Management, Inc. 2047 Vista Parkway, Suite 201 West Palm Beach, FL 33411</th>
<th>Atkins North America, Inc. 3230 West Commercial Boulevard, Suite 100 Fort Lauderdale, FL 33309-3400</th>
<th>CB&amp;I Environmental &amp; Infrastructure 2481 NW Boca Raton Boulevard Boca Raton, FL 33431</th>
</tr>
</thead>
<tbody>
<tr>
<td>passage of the storm and was completed in February 2017. ATM is currently supporting two requests for post-Matthew funding support from FEMA which is typically a multi-year process. ATM is also supporting a post-Matthew truck haul dune project for NASA which will be constructed during the 2017-18 beach placement season. Refer to pages 68 to 69 List of projects provided on pages 68 to 69</td>
<td>List of projects provided on pages 103 to 114</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>


2. Federal Employer I.D. Number. 59-2413268 59-0896138 77-0589932

3. Dun & Bradstreet Number. (If applicable). 14-704-7575 77283752 04-347-6810

4. Doing business as / Fictitious Name (If applicable). N/A N/A N/A


6. Principal place of business. Corporate Office – 11 Pablo Avenue Jacksonville Beach, FL 32250 4030 West Boy Scout Boulevard Suite 700 Tampa, FL 33607 4171 Essen Lane Baton Rouge, LA 70809

7. Office Location for this project. 2047 Vista Parkway, Suite 201 West Palm Beach, FL 33411 3230 West Commercial Boulevard, Suite 100 Ft. Lauderdale, FL 33309 2481 NW Boca Raton Blvd Boca Raton, FL 33431

8. Telephone/Fax Number: 561-659-0041 (tel) 561-659-3733 (fax) 954-733-7233 (tel) 954-733-1101 (fax) 561-361-3150 (tel) 561-391-9116 (fax)

9. Type of Business Corporation (Florida) Corporation (Florida) Corporation (Louisiana)

10. List Florida Registration Number. G93359 233840 9317
<table>
<thead>
<tr>
<th>EVALUATION CRITERIA - PROJECT SPECIFIC CRITERIA</th>
<th>Applied Technology &amp; Management, Inc. 2047 Vista Parkway, Suite 201 West Palm Beach, FL 33411</th>
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</thead>
<tbody>
<tr>
<td>11. Name and title of each principal owner.</td>
<td>Ed Modzelewski, Chairman W. Samuel Phlegar, III, PE, President Stephen C. Swann, PE, Vice President, Director Steven Peene, PhD, Secretary</td>
<td>There are one President, 13 Senior Vice Presidents, 117 Vice Presidents, and 10 Associate Vice Presidents. Refer to pages 125 to 131 for greater detail</td>
<td>There are three Directors and 21 Officers. Refer to page 226 for greater detail</td>
</tr>
<tr>
<td>12. Authorized contacts for your firm.</td>
<td>Michael Jenkins, PhD, PE, Principal <a href="mailto:mjenkins@appliedtm.com">mjenkins@appliedtm.com</a> 561-659-0041</td>
<td>Adam R. Gelber Group Manager – Senior Scientist <a href="mailto:adam.gelber@atkinsglobal.com">adam.gelber@atkinsglobal.com</a> 305-514-3387 Charlotte Maddox, PE, D.WRE, CFM, PMP Vice President <a href="mailto:charlotte.maddox@atkinsglobal.com">charlotte.maddox@atkinsglobal.com</a> 813-281-8367</td>
<td>Thomas Pierro, PE, Director <a href="mailto:thomas.pierro@cbi.com">thomas.pierro@cbi.com</a> 561-361-3150</td>
</tr>
<tr>
<td>13. Has your company ever failed to complete any work awarded to you? If so, where and why?</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
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<tr>
<td>15. Have any voluntary or involuntary bankruptcy petitions been filed by or against your firm, its parent or subsidiaries or predecessor organizations during the last three years? If yes, specify details in an attached written response.</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>16. Has your firm, its principals, officers or predecessor organization(s) been debarred or suspended by any government entity within the last three years? If yes, specify details in an attached written response</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>17. Has your firm’s surety ever intervened to assist in the completion of a contract or have Performance and / or Payment Bond claims been made to your firm or its predecessor’s sureties during the past three (3) years? If yes, specify details in an attached written response, including contact information for owner and surety.</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>18. Has your firm ever failed to complete any work awarded to you, services and / or delivery of products during the past (3) years? If yes, specify details in an attached written response</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
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<tr>
<td>19. Has your firm ever been terminated from a contract within the last three years? If yes, specify details in an attached written response</td>
<td>No</td>
<td>Yes Atkins North America, Inc., enters into hundreds of contracts every month. With this number of contracts, inevitably some are terminated for the convenience of the owner. Atkins North America, Inc., does not maintain a log of contracts that have been terminated. Based on that fact, and the fact that Atkins North America, Inc., is a company with 70 offices and thousands of active contracts, Atkins North America, Inc. cannot certify with 100% accuracy that within the last 3 years one of its contracts has not been terminated under these circumstances.</td>
<td>No</td>
</tr>
<tr>
<td>20. Living Wage solicitations only:</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>