

Team Qualifications



ENVIRONMENTAL SERVICES BAHAMAS AND CARIBBEAN

QUALIFICATIONS & EXPERIENCE



Applied Technology & Management, Inc.
www.appliedtm.com
800.275.6488

ENVIRONMENTAL SERVICES BAHAMAS AND CARIBBEAN

TABLE OF CONTENTS

- COMPANY OVERVIEW
- SERVICES
- SELECTED PROJECTS



Applied Technology & Management, Inc.

Company Overview

Applied Technology & Management (ATM) is a coastal, environmental, marine and water resources engineering, design and consulting firm serving public and private clients worldwide.

Founded in 1984, ATM has eight offices throughout the eastern United States. A ninth office is located in Dubai, U.A.E. We have established an exceptional reputation for providing clients in the United States and worldwide with innovative and proactive solutions for their project challenges.

Our projects range from environmental impact assessments and municipal wastewater treatment plant design to permitting and design of resort and municipal marinas, and beach renourishment.

From project planning through implementation, ATM's technical professionals have the expertise to economically deliver the range of services needed to resolve complex engineering and environmental challenges for projects in all environments.

ATM's highly qualified technical staff of engineers, scientists and consultants; network of offices; and years of experience allow us to provide the strategic assistance necessary for making projects successful.



Marine and Waterfront Development

Our team provides planning, design, engineering, construction services and operations consulting for marinas, ports and harbor navigation projects. Services range from initial feasibility evaluations and permitting through construction. We also offer complete financial and environmental management planning to our clients to ensure sustainable project development.

Coastal Engineering

Assessment and management of the shorelines and inlets is important for maintaining long-term stability of the coastline whether on the open coast or an inland waterway, lagoon or lake. ATM coastal engineers apply state-of-the-art tools and analyses and provide pragmatic solutions that meet the clients' and other stakeholders' needs. Our staff has over 150 years of cumulative experience developing viable solutions for a variety of issues and problems including shoreline and inlet management, littoral dynamics and processes, structural solutions, storm surge analyses, sea level rise, and recommended finished floor elevations.

Environmental and Civil Engineering

ATM engineers provide planning, financing assistance, design, permitting, operations assessment and compliance needs for water, wastewater, stormwater and other regulated systems to meet any infrastructure demand. Our team services private and public clients from municipalities and resort developments to industrial and agricultural facilities. ATM has LEED-certified staff and actively works with clients to develop sustainable green initiatives.

Ecological and Environmental Sciences

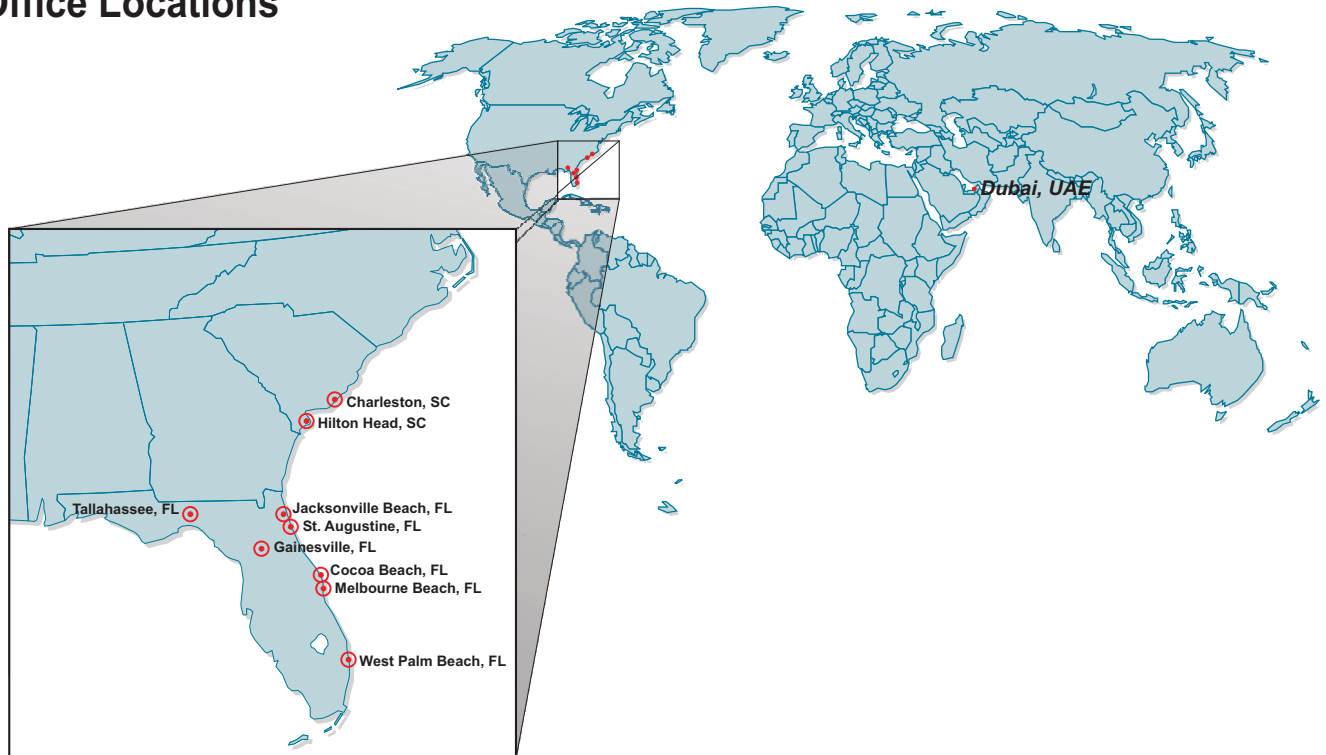
Environmental and ecological evaluations, planning, management, permitting and mitigation services to meet regulatory requirements for uplands, wetlands, estuarine and island systems are services provided. We offer a full range of capabilities, including NEPA and environmental impact assessments, wetlands delineations, surveying, compliance monitoring, threatened and endangered species evaluations, and habitat restoration.

Water Resources

Our engineers and scientists offer comprehensive solutions to a wide range of water-related issues, including complex hydrodynamic, hydraulic and water quality modeling; monitoring program development and implementation; impact assessment; and detailed hydraulic design support. ATM helps clients negotiate the regulatory process while protecting aquatic resources and providing a better understanding of issues that affect them.

Applied Technology & Management

Office Locations



U.S.A.

1435 E. Piedmont Drive, Suite 210
Tallahassee, FL 32308
(850) 765-8150 tel
(850) 591-1888 alt tel
(386) 418-6401 fax

411 Pablo Ave.
Jacksonville Beach, FL 32250
(904) 249-8009 tel
(904) 249-8007 fax

2200 N. Ponce de Leon Blvd., Suite 9
St. Augustine, FL 32084
(904) 249-8009 tel
(904) 808-8478 fax

5550 NW 111th Blvd.
Gainesville, FL 32653
(386) 256-1477 tel
(855) 281-6884 fax

2047 Vista Parkway, Suite 201
West Palm Beach, FL 33411
(561) 659-0041 tel
(561) 659-3733 fax

P.O. Box 20336
Charleston, SC 29413-0336
(843) 414-1040 tel
(843) 414-0155 fax

P.O. Box 24156
Hilton Head Island, SC 29925-4156
(843) 290-0980 tel

Dubai, U.A.E.

SHIPPING: IBN Battuta Gate Building
Ground Floor #G0007
MAILING: P.O. Box 487197
Dubai, U.A.E.
971 (4) 432-9263 office
971 (4) 432-9265 fax

Additional Staff are Located:

Cocoa Beach, FL
(800) 275-6488 tel

Melbourne Beach, FL
(321) 403-2163 tel

Visit our website at:
www.appliedtm.com

Applied Technology & Management, Inc.

Professional Service Areas Overview



Water Resources

- Hydrodynamic and Water Quality Modeling
- Hydraulic and Floodplain Modeling
- Watershed Assessment/ Stormwater Management and Planning
- TMDL Development and Advocacy
- Basin Management Action Planning (BMAP)
- Stakeholder Outreach and Participation
- Point and Nonpoint Source Pollutant Load Reductions
- Mixing Zone Studies
- Integrated Water Resources Management Plans
- NPDES and Environmental Resource Permitting
- Potable and Irrigation Water Supply
- Data Collection and Field Services

Ecological / Environmental Sciences

- Environmental Impact Assessments and Environmental Impact Statements
- Environmental Management Plans
- Environmental Monitoring Plans
- Environmental Baseline Surveys
- Mitigation Planning and Design
- Water Quality Management
- Mangrove, Reef and Sea Grass Management Plans
- Land Management
- Ecological Impact Assessments
- Plant and Wildlife Surveys
- Wetland Characterization and Delineation
- Wetlands Assessments/ Mitigation/Jurisdiction
- Mitigation Planning and Implementation
- Ecological Restoration
- Coral/Seagrass Relocation
- Surveying and Mapping
- Protected Species Studies and Mitigation
- Habitat Management Plans
- Terrestrial and Aquatic Species Monitoring

Environmental / Civil Engineering

- Land Development
- Regulatory Compliance
- Funding Facilitation
- Resort Infrastructure Development
- Roadway Drainage and Stormwater Design
- Utility Design
- Water Distribution and Treatment Plant Design
- Wastewater and Reclaimed Water Systems
- Federal, State and Local Permitting
- Construction Management Services
- Stormwater Systems Design
- Best Management Practice (BMP) Development
- Aquarium and Life Support Systems
- Effluent Disposal System Design
- Compliance Audits
- Environmental Audits

Marina and Waterfront Development

- Market Analysis
- Due Diligence and Business Audits
- Planning and Feasibility Studies
- Financial Analysis and Pro Forma Modeling
- Engineering Studies and Design
- Bidding and Construction Services
- Operation Consultancy Services
- Dredging and Dredged Material Management
- Environmental Impact Studies and Permitting
- Grant Funding Assistance

Coastal Engineering

- Beach Nourishment, Feasibility, Design and Permitting
- Shoreline Stabilization and Coastal Structures
- Inlet and Channel Management
- Coastal Modeling
- Habitat Restoration and Enhancement
- Environmental Permitting
- Storm Damage Assessments and Post-Storm Response
- Surveying Services
- FEMA Flood Hazard/Mapping Support Services



Caribbean Environmental Impact Assessment Project Experience

ATM staff members have extensive experience developing detailed environmental management plans and Environmental Impact Assessments for multi-phase resort and industrial development projects in the Caribbean.

The Following Map Indicates the Locations of Recent Project Experience.



The Following is a List of Our Representative Caribbean EIA Project Experience.

Bahamas

Abaco Islands

- . Gorda Cay Disney
- . Great Guana Cay
- . Sandy Point EIA

Andros Island

- . AUTECH Shallow Water Range Cable Installation, Great Stirrup Cay, Berry Islands/Andros Island

Caribbean Environmental Impact Assessment Project Experience

Our Representative Caribbean EIA Project Experience (Continued)

Berry Islands

- . AUTECH Shallow Water Range Cable Installation, Little Stirrup Cay, Berry Islands/Andros Island
- . Whale Cay
- . Norwegian Cruise Lines, Great Stirrup Cay
- . Chub Cay Shoreline Analysis

Bimini Islands

- . Bimini Bay Resort and Marina
- . Bimini Inlet, North Bimini Island
- . Bimini Bay Environmental Studies Program

Grand Bahama Island

- . Freeport Harbor
- . Grand Bahama Resort
- . Gold Rock Creek
- . West End Marina and EIA
- . Lloyd Werft Ship Repair Facility

Eleuthera Islands

- . Unicorn Cay
- . Windermere Club
- . Winding and Half Sound Bay
- . Seashells at Cotton Bay
- . Royal Island Development
- . Sky Beach Club EIA

Exuma Islands

- . Crab Cay Development
- . Normans Cay Marina Resort, Exuma Cays
- . Royal Cay, Little Exuma

Long Island

- . Diamond Crystal Properties EIA Phase I

Mayaguana Island

- . Mayaguana Development
- . Pirate Wells

New Providence Islands

- . Atlantis Resort, Paradise Island
- . Athol Island Golf Course, Paradise Island
- . Ocean Club and Golf Course Renovation, Paradise Island
- . Rose Island Resort, Rose Island
- . Shell Bahamas Offshore Mooring Facility at Clifton Pier
- . Aqua Dyer Open Ocean Aquaculture Facility, Salt Cay
- . Ocean Bay EIA, Nassau
- . South Ocean Property
- . Hurricane Hole, Phase I EIA, Paradise Island
- . Athol Island Borrow Area EIA, Paradise Island
- . Atlantis Casino and Resort EIA
- . Atlantis Casino and Resort - Ocean Club Expansion and Redevelopment EIA
- . Atlantis Casino and Resort East End Redevelopment EIA

Rum Cay

- . Preliminary Marine Facilities Siting Assessment

San Salvador Island

- . Preliminary Marine Facilities Siting Assessment

Turks and Caicos

Middle Caicos

- . Mare Bello Development, LLC, Middle Caicos

Providenciales

- . West Caicos Marina
- . Cooper Jack Marina
- . Leeward Canals Phase I & II
- . Amanyara Resorts, Northwest Point
- . Mare Bello Resort Development, North Caicos
- . Turtle Tail Marina EIA Support

Water Cay

- . Mare Bello Development, LLC, Middle Caicos

Caribbean Environmental Impact Assessment Project Experience

Our Representative Caribbean EIA Project Experience (Continued)

Bermuda and the Caribbean Islands

Anguilla

- . Sonesta Resort, Anguilla
- . Cap Juluca, Anguilla
- . Altamer Resort, Anguilla
- . Savannah Bay, Anguilla
- . Viceroy Anguilla Resort, Anguilla

Bermuda

- . Dolphin Quest, Southampton Princess Hotel, Bermuda
- . Ariel Sands Resorts, Bermuda

Barbados

- . Graeme Hall Swamp Environmental Restoration Plan, Barbados

Dominican Republic

- . Westin Roco Ki Resort, Dominican Republic
- . Punta Mangle, Dominican Republic
- . Samana, Dominican Republic
- . Macao Beach Resort Environmental Study

Grand Cayman

- . Cayman Palace, Grand Cayman
- . Ritz Carlton, Grand Cayman

Grenada

- . Port George, Grenada

St. Lucia

- . Rodney Bay Environmental Assessment

Tortola

- . Beef Island, BVI
- . Scrub Island, BVI
- . Nanny Cay Marina, BVI
- . Trellis Bay Estates, BVI

El Salvador

- . Cutuco Energy LNG



SERVICES



Environmental Impact and Management Services

Capabilities

- Environmental Impact Assessments
- Environmental Impact Statements
- Environmental Management Plans
- Environmental Monitoring Plans
- Environmental Baseline Surveys
- Mitigation Planning and Design
- Water Quality Management
- Mangrove, Reef and Sea Grass Management Plans

Since 1984 our engineers and scientists have completed comprehensive and specialized environmental impact assessments, studies and planning services. Our team works with developers and public agencies to complete the requisite Environmental Impact Assessments (EIAs) and to solve complex environmental and development issues.

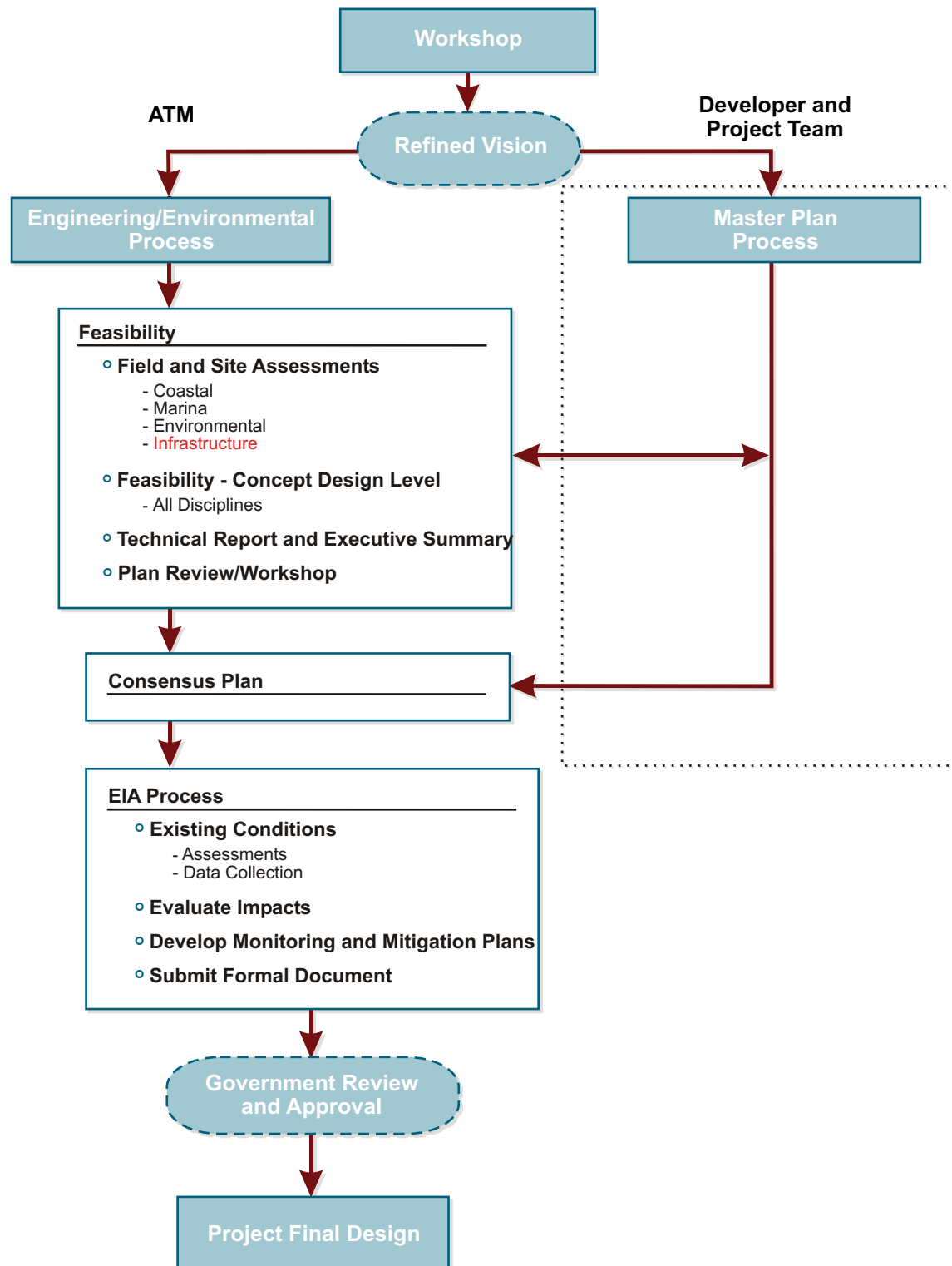
Working with some of the world's premier hotel and resort developers, their architects, land planners, and financial and marketing consultants, ATM has built an organizational and project management approach that has enabled us to develop economically and technically feasible solutions for sustainable development.

The EIA process often requires a developer to offset anticipated environmental impacts through mitigation. Our mitigation plans are designed to provide long-term, ecologically-balanced alternatives to avoid, minimize and monitor the potential impacts of a proposed development.

From pre-development EIAs to mitigation planning and implementation, ATM provides the regulatory, scientific and technical strategies needed for the success of projects worldwide.



Integration of ATM Environmental Impact Assessment / Infrastructure Process With Engineering Feasibility and Preliminary Design





International Experience Environmental Impact Assessments

TITLE	LOCATION	YEAR
Texaco Bahamas	Providenciales, Turk & Caicos	1991
Atlantis Resort and Casino – Phase I EIA	Paradise Island, Bahamas	1994
Atlantis Resort and Casino – Phase II EIA	Paradise Island, Bahamas	1996
Old Bahama Bay Resort EIA	West End, Grand Bahamas	1996
Atlantis Resort & Casino – Marina & Retail Center EIA	Paradise Island, Bahamas	1997
Bimini Bay Resort Phase I EIA	Bimini, Bahamas	1997
Praslin Bay Resort Development EIA	St. Lucia	1997
Erosion Control Cap Juluca Hotel EIA	Anguilla	1998
Graeme Hall Swamp Environmental Restoration Plan	Barbados	1998
Jomico Investments' Resort Preliminary EIA	Grand Cayman, Cayman Islands	1998
Ritz-Carlton Hotel and Resort EIA	Grand Cayman, Cayman Islands	1998
Atlantis Resort and Casino – East End Redevelopment EIA	Paradise Island, Bahamas	1999
Atlantis Resort and Casino – Ocean Club Expansion & Redevelopment EIA	Paradise Island, Bahamas	1999
Dominican Republic Resort EIA	Punta Mangle, Dominican Republic	1999
Eco-Tourism Lodges Development Report	Mayaguana, Bahamas	1999
Grand Bahama Island EI Review and Mgmt Program for Prime Minister	Grand Bahama Island, Bahamas	1999
Cooper Jack Marina EIA	Providenciales, Turks & Caicos	2000
Leeward Canal Expansion – EIA support	Providenciales, Turks & Caicos	2000
Rose Island – EIA support	Rose Island, Bahamas	2000
West Caicos Development – EIA support	Turks & Caicos	2000
Freeport Ship Repair Facility EIA	Freeport, Bahamas	2001
Turtle Tail Marina – EIA support	Providenciales, Turks & Caicos	2001
Windermere Island North Development EA	Eleuthera, Bahamas	2001
Cayman Palace & Resort Environmental Study	Grand Cayman, Cayman Islands	2002
The Pavilions at Unicorn Cay EA	Eleuthera, Bahamas	2002
Nanny Cay Marina EIA	Tortola, BVI	2003
Amanyara Resort EIA	Providenciales, Turks & Caicos	2003
Ariel Sands Resort Redevelopment EIA	Bermuda	2003

TITLE	LOCATION	YEAR
Bimini Bay Environmental Studies Program	Bimini, Bahamas	2003
Cabinda Port Development EIA	Angola	2003
Crab Cay – EIA & Environmental Management Plan	Exumas, Bahamas	2003
Water Cay Club Resort – Preliminary EA	Water Cay, Turks & Caicos	2003
Trellis Bay Estates EIA	Tortola, BVI	2004
Athol Island Borrow Area – EIA	Bahamas	2004
Athol Island Golf Course, EIA	Bahamas	2004
Atlantis Resort and Casino – Athol Island Golf Course EIA	Paradise Island, Bahamas	2004
Atlantis Resort and Casino – Phase III Dolphin Encounter EIA	Paradise Island, Bahamas	2004
Atlantis Resort and Casino – Phase III EIA	Paradise Island, Bahamas	2004
AUTEC Shallow Water Range & Minefield Cable Connection EIA	Andros Island, Bahamas	2004
Bimini Bay Resort and Marina	Bimini, Bahamas	2004
Bimini Inlet Dredging EIA	Bimini, Bahamas	2004
Great Guana EIA	Abacos Islands, Bahamas	2004
Macao Beach Resort EIA – Westin Roco Ki	Dominican Republic	2004
Offshore Aquaculture Facility EIA	Salt Cay, Bahamas	2004
Shell Bahamas Facility at Clifton Pier EIA	New Providence, Bahamas	2004
Beef Island EIA	Tortola, BVI	2005
Chub Cay Resort Development	Bahamas	2005
Dubai Dolfhia EIA	Dubai, UAE	2005
Gold Rock Creek EIA	Bahamas	2005
Royal Island EIA	Bahamas	2005
Scrub Island EIA	Scrub Island, BVI	2005
West End (Ginn sur Mer) EIA	Grand Bahama Island, Bahamas	2005
Whale Cay EIA	Berry Islands, Bahamas	2005
Samana Marina	Dominican Republic	2006
Altamer Marina Resort EIA	Anguilla	2006
Hurricane Hole, Phase I EIA	Paradise Island, Bahamas	2006
Ritz-Carlton Rose Island – EIA support	Rose Island, Bahamas	2006
Rum Cay Marina Resort – EIA support	Bahamas	2006
Sandy Point EIA	Great Abaco Island, Bahamas	2006
Savannah Bay	Anguilla	2006
Sky Beach Club EIA	Eleuthera, Bahamas	2006

TITLE	LOCATION	YEAR
Viceroy Anguilla Resort Reverse Osmosis Plant EIA	Anguilla	2006
Harbour Dredging Area EIA	Nassau, Bahamas	2006
Rodney Bay Environmental Assessment	St. Lucia	2007
Anchor Marina (Palm Jumeirah)	Dubai, UAE	2007
Hurricane Hole Village and Marina EIA	Paradise Island, Bahamas	2007
Port St. George (Stella Maris) EIA	Long Island, Bahamas	2008
Port Ghalib City EIA and EMP	Port Ghalib, Egypt	2008
Port Ghalib Lagoon EIA and EMP	Port Ghalib, Egypt	2008
Dolphin Discovery EIA	Anguilla, BWI	2008
Fresh Creek Redevelopment Environmental Planning	Fresh Creek, Bahamas	2008
Randheli EIA Review and Environmental Planning	Noonu Atoll, Maldives	2008
South Caicos Environmental Planning	Turks and Caicos Islands	2008
Bimini Bay Phase II EIA	North Bimini, Bahamas	2008
Queen Elizabeth 2 Ship Hotel Facility EIA	Dubai, UAE	2008
Salt Cay Barge Landing EIA	Turks and Caicos Islands	2008
Holbox Resort Development Environmental Planning	Quintana Roo, Mexico	2008
True East Resort Development Environmental Planning	Grand Bahama Island, Bahamas	2008
Ginn Sur Mer EIA and EMP	Grand Bahama Island	2008
Bock Cay EIA	Exuma, Bahamas	2010
Cat Island Beach Resort	Bahamas	2010
Cat Island Supplemental EIA	Bahamas	2011

SELECTED PROJECTS

Beef Island Golf and Country Club Environmental Impact Assessment

Quorum Island, Ltd.

Trellis and Bluff Bays, British Virgin Islands

Services Rendered

EIA Services

- Coordination and review of environmental studies scoping document produced by Island Resources Foundation
- Extensive coordination with planning team and owner to define master plan development, including an approximate 200-acre preserve
- Comprehensive field studies and characterization mapping of terrestrial and marine flora and fauna within project sphere of influence
- Creation of GIS-based resource maps
- Completion of EIA for five-star resort hotel, 18-hole golf course, 200+ slip marina, residential and commercial development, beach enhancements, utilities and infrastructures, etc.
- Assisting owner in development of environmentally sensitive design requirements for golf course drainage, stormwater management and sedimentation/erosion controls
- Investigation of mitigation options, including identification of coral and seagrass transplantation sites
- Close coordination with government agencies and participation in public workshops as part of the outline planning and EIA approval process



- Numerical hydrodynamic and water quality modeling to assess risk associated with proposed marina operations
- Providing coastal construction recommendations based on site-specific storm surge analysis

Other Services

- Hydrographic survey and shoreline profile surveys
- Baseline water and sediment sampling for laboratory analyses (contaminants)
- Conceptual beach design
- Marina market study
- Marina economic (pro forma) analyses
- Conceptual marina design

Project Summary

Quorum Island (BVI) Ltd. proposed to develop a luxury five-star destination resort on Beef Island, British Virgin Islands. The overall development goal was to create a five-star destination resort that would be a unique source of pride for the British Virgin Islands, as well as a major economic asset.

ATM was retained by Quorum Island to prepare an EIA for the proposed resort project. To facilitate review, the EIA was organized into three separate components: Golf Course, Resort Core and Future Development.

Thatch Cay Engineering and Environmental Support Services

St. Thomas, U.S. Virgin Islands

Services Rendered

- Docking Facility and Beach Site Analysis
- Docking Facility Conceptual Plan
- Beach Conceptual Plan
- Mooring Field Conceptual Plan
- CZM and Federal Permitting Support
- Development of a Stormwater Pollution Prevention Plan (SWPPP)
- Reverse Osmosis Discharge Modeling for Environmental Impacts



Project Summary

ATM has provided support to a range of engineering and analysis efforts for a proposed high-end development on Thatch Cay, USVI. This has included analysis of beach, marine facilities, stormwater and Reverse Osmosis discharge elements of the project.

ATM participated in an island-wide field investigation to determine the most feasible location for both the marine dependent facilities and recreational beach amenities. Conceptual designs for a docking facility were developed to make full use of the existing site conditions and constraints and provide for the facilities necessary to support the development, which is only accessible by water. Recreational beach concepts were developed to support the development. ATM developed a Stormwater Pollution Prevention Plan to address concerns regarding stormwater discharge into the nearshore. An analysis of the proposed Reverse Osmosis discharge was conducted to ensure a mixing zone sufficient to avoid direct impacts to observed Acropora corals within the area.



ATM provided significant technical support for the CZM and federal permitting processes. To date, CZM project approval has occurred and consultation with federal regulatory agencies is ongoing. In particular, this project has included significant consideration of the project with respect to Acropora corals, which have been recently listed as a federally threatened species. Efforts have included the quantification of potential impacts to corals and the development of avoidance and minimization strategies to address coral impact concerns.

This project is currently under formal Section 7 consultation status with the National Marine Fisheries Service.

Altamer Resort

Environmental Impact Assessment

Anguilla, British West Indies



Services Rendered

- Environmental Impact Assessment
- Coordination With Regulatory Agencies

Project Summary

ATM performed an Environmental Impact Assessment (EIA) for regulatory agency approval for the proposed construction and operation of a megayacht marina and hotel expansion project on Anguilla, the British West Indies at the Altamer Resort. As part of the development approval process and in accordance with the Anguilla Department of Physical Planning requirements. ATM prepared this EIA in accordance within the known policies, legal and administrative framework of the prescribed laws, ordinances, and other legislation of the Government of Anguilla, while the potential impacts were evaluated according to International and United States Environmental Protection Agency standards and guidelines. ATM traveled to the project site to assess the project. Specific tasks ATM completed for the EIA are detailed below.

- The development of detailed environmental baseline characterization and EIA component assessment plans.
- Confirmed and delineated the Zone of Influence of the EIA study area.
- The review of all available background information, previous studies and site-specific local environmental and regulatory policy concerns.
- Site investigations of upland, wetland, salt pond and near shore marine areas.
- Documentation and outline of the justification of the Zone of Influence for the project site to be presented and provided to the Land Development Control Committee.



Scrub Island Resort Development

Mainsail Development Group, Inc.

Scrub Island, British Virgin Islands

Services Rendered

- Marina Planning and Engineering
- Coastal Engineering
- Environmental Impact Assessment
- Marina Schematic Design for Design-build
- Marina Economic Proforma
- Coral and Seagrass Transplanting Support

Project Summary

ATM worked on the planning and conceptual design of a luxury resort marina associated with the Scrub Island Resort in the British Virgin Islands (BVI). This was the first new full-service marina facility to be built in the BVI 20 years. Scrub Island is a 230-acre island just northeast of Tortola, in close proximity to the Beef Island and Trellis Bay. Mainsail Development Group, Inc. retained ATM to provide marina planning and design services to the project development team. The final concept included a 67-slip fixed pier marina, marina utilities, breakwater protection, as well as barge landing and coastal improvements. The marina compliments the boutique resort which includes hotel, multi-family and single family estate residences, spa, restaurant, and marina village. The site will cater to sportfishing enthusiasts, as Scrub Island Marina will be the closest full-service facility to the famed North Drop, which is the location of the Virgin Islands' best billfishing. The marina will accommodate vessels to 150 ft and includes a full complement of utilities.

ATM also completed the Environmental Impact Assessment (EIA) in accordance with the Terms of Reference (TOR) established by the Town and Country Planning Department. The EIA work included:

- Terrestrial and marine biological characterizations
- Bathymetric and oceanographic surveys and geotechnical investigations
- Hydrodynamic, wave, and water quality modeling
- Quantification of potential environmental impacts of the project
- Development of monitoring and mitigation planning, including coral and seagrass transplanting
- Public consultation support

As part of the approvals process, ATM also provided technical support to the development team during Government liaisons and public meetings. Following approvals, ATM completed schematic design for the marina elements in conjunction with development of a design-build approach to project construction. ATM also provided limited support to the project team during pre-construction monitoring efforts, in compliance with the Government approvals, including coral and seagrass transplanting/relocation.



Photo Courtesy of Meridian Construction Company Limited



Coral and Seagrass Impact Mitigation and Relocation

Scrub Island, British Virgin Islands

Services Rendered

- Coral Relocation
- Seagrass Transplantation

Project Summary

A marina at a newly planned resort called for a marina basin on the sheltered western shore of the island. The area being considered contained areas of seagrass and coral that would be impacted by the project. ATM's mitigation plan not only provided mitigation alternatives, but met the Government goals for the preservation of the natural resources. ATM was able to mobilize a project team and complete major portions of this mitigation project within 6 weeks of initial consultations and planning.

The plan included transplanting the most dense and viable seagrass beds to adjacent barren areas of similar depth and conditions, as well as some offsite receiver areas. The coral in the work footprint was removed from two sites and relocated to three nearby sites. Coral was removed carefully from the impacted areas and transported to nearby areas using existing, as well as new, and innovative techniques developed by the project team onsite. A special fast setting, non-separable concrete mortar mix developed by ATM staff, was used to reattach the relocated corals to existing barren substrate, hereby enhancing the habitat in those areas.

More than 1,200 sq. meters of seagrass beds were successfully planted, and approximately 1,200 corals were successfully relocated and reattached.



Rodney Bay Marina

Island Global Yachting

St. Lucia, Windward Islands, Lesser Antilles



Recipient of the 5 Gold Anchors Certification
by The Yacht Harbour Association's (TYHA)
Gold Anchor Award Scheme

Services Rendered

- Due Diligence and Site Evaluations
- Marina Planning
- Environmental Impact Assessment (EIA)
- Marina Engineering Design
- Bidding/Negotiation
- Construction Contract Administration Services

Project Summary

ATM has assisted Island Global Yachting (IGY) with the complete redevelopment of the Rodney Bay Marina in Gros Islet. The facility provides berthing for 32 megayachts up to 250 feet in length and approximately 230 smaller vessels in the 40 to 60-foot class.

ATM's effort on this project began with a detailed due diligence assessment for IGY, along with participation in the purchase negotiations for the property. Staff created an aggressive redevelopment program that included detailed marina planning, an Environmental Impact Assessment (EIA) and marina engineering design services for the project. Design elements for the project included fixed piers, floating docks, shoreline stabilization (revetment and sheet-pile bulkhead), marina utilities and dredging.

Upon completion of the engineering design phase, ATM compiled a comprehensive bid package for the construction works, facilitated the bidding process for the Owner, and also participated in contract negotiations between the Owner and the selected contractors. After award of the contract, construction phase services were provided, including shop drawing review, site inspection and payment application review/certification. Construction of the project was completed on schedule in December 2008, in time to accommodate vessels during the annual Atlantic Rally for Cruisers (ARC) regatta, the world's largest trans-ocean sailing event.

Rodney Bay Marina is now considered one of the premier marina facilities in the Windward Islands and provides safe, reliable dockage for the people of St. Lucia as well as visitors to this island destination.



Crab Cay Environmental Impact Assessment and Environmental Management Plan

Crab Cay Island, Exuma, Bahamas

Services Rendered

- Environmental Impact Assessment Supplement
- Traffic Impact Assessment
- Mangrove Preservation Plan
- Dredged Material Management Plan
- Marine Habitat Survey
- Detailed Bathymetric Survey
- Environmental Management Plan

Project Summary

ATM prepared an Environmental Impact Assessment (EIA) Supplement and an Environmental Management Plan (EMP) for the proposed development of Crab Cay Island and Little Crab Cay Island. The development features hotel and mixed-residential accommodations and a 125-slip marina.

The EIA addressed revisions to the project components, including a detailed marina site plan and finalized dredging extents, recreational enhancement to Crab Claw Beach, construction of an entrance bridge from the Great Exuma mainland to Crab Cay, and establishment of three mooring fields, each with a 10-boat capacity.

The EMP, which specifically addressed several environmental issues of critical importance, was designed to ensure that the development, operation, and maintenance of Crab Cay proceeds with adequate controls to protect the long-term health of environmental resources on the property and immediate vicinity. ATM drafted mangrove protection covenants and guidelines, designed construction buffers and restrictions for Blue Hole protection, and established guidelines for protection of overall environmental quality of the island. Other components of the EMP included the design of a marina operations and maintenance plan, groundwater resource protection guidelines and stormwater runoff controls.

Upon completion of the baseline studies and data collection for the first phase of the EMP, ATM documented the existing ecological condition of the site to satisfy the Bahamas Environment, Science and Technology (BEST) Commission development requirements for approval of construction permits and initial development of the project. ATM also completed a detailed and comprehensive bathymetric survey of the waters surrounding Crab Cay (referencing the local water datum) to be used for preconstruction bidding for the dredging operations and fill templates for onsite disposal areas.



Hurricane Hole Environmental Impact Assessment

Kerzner International Development

Paradise Island, Bahamas

Services Rendered

- Environmental Impact Assessment
- Environmental Management Plan
- Tidal Current Study and Marina Flushing Analysis
- Water Quality Analysis

Project Summary

The Environmental Impact Assessment for the renovation of Hurricane Hole Marina included the creation of a retail village and 302 timeshare units, relocation of the Paradise Island Police Station, the addition of two levels to the adjacent parking structure, and other necessary infrastructure changes.

Renovating Hurricane Hole Marina with the associated retail and timeshares components was part of the ongoing expansion of the Atlantis Resort. The revitalized marina would serve as a focal point at the gateway to Paradise Island, providing berthing space for multiple megayachts right in Nassau Harbour.

The new marina facility would provide a total slip length of approximately 4,600 linear feet, compared to 4,240 linear feet at the existing Atlantis Marina, and be able to berth approximately 47 vessels. Sufficient dock space would be available to accommodate vessels with lengths on the order of 220 feet. The design has taken account of the existing water flow conditions in the harbor, as well as the flushing and silting potentials within the newly created docking basins. The new marina design and construction would meet certification provisions for the internationally recognized Blue Flag Marina Program.

ATM conducted a computer simulation of the new marina basin configuration and the marina flushing surpassed BEST Commission guidelines. As with other Kerzner developments, landscaping was designed to be significantly improved beyond existing conditions.

Kerzner has decided not to initiate the project at this time.



Atlantis Resort Phase III Environmental Impact Assessment

Kerzner Development

Paradise Island, Bahamas

Services Rendered

- Environmental Impact Assessment
- Environmental Management Plan

Project Summary

ATM developed an Environmental Impact Assessment (EIA) for Phase III of the Atlantis Resort expansion on Paradise Island, Bahamas. The expansion included a new hotel and beachside villas, a new 100,000-square foot convention center, an expanded casino, an interactive dolphin exhibit, a snorkeling experience in Paradise Lagoon, a recreational water slide, and a canal created to connect the entrance of the existing lagoon to Nassau Harbour. The Phase III expansion also includes upgrades to the potable water and wastewater systems at Paradise Island utilities.

ATM utilized past studies of the area, along with new data collection to develop the baseline conditions for the site. As with other Atlantis phases, the lands proposed for Phase III were previously impacted and cleared areas. This EIA provided a detailed description of the proposed project, an evaluation of existing environmental conditions, and an assessment of the potential environmental impacts of construction and operation of the proposed Phase III development on both Paradise Island and the surrounding nearshore marine environment. This included a detailed assessment of potential impacts to infrastructure and traffic within the area.

ATM developed an Environmental Management Plan (EMP) that outlined construction and operational Best Management Practices (BMPs) to reduce potential impacts of the proposed project on adjacent waters and other resources.



Grand Bahama Ship Repair Facility EIA and EMP

Freeport, Grand Bahama

Services Rendered

- Completed an Environmental Impact Assessment
- Conducted Sediment and Water Analyses
- Developed a Pollution Prevention Plan
- Developed an Environmental Management Plan
- Developed Long-Term Environmental Monitoring Protocol

Project Summary

ATM was selected by the Government of the Bahamas and coordinated closely with the Bahamas Environment Science and Technology (BEST) Commission to provide third party review of the construction and operation of the Grand Bahama Ship Repair Facility. To minimize environmental impacts from the proposed facility, a comprehensive Environmental Impact Assessment (EIA) and Environmental Management Plan (EMP) were developed in accordance with the requirements of the Bahamian government.

As part of the challenging environmental review and management control process, ATM conducted an environmental baseline study, including sediment and water quality analyses. A multidisciplinary team of environmental engineers and scientists reviewed design and operation plans, developed pollution prevention plans, coordinated with local port and government officials, and prepared the EIA that addressed the myriad of associated issues.

The comprehensive EMP was developed to specify the operational practices recommended to incorporate Best Management Practices. The EMP included a long-term monitoring protocol to ensure adherence to the recommended BMPs.



Clifton Pier EIA

Shell Bahamas, Ltd.

New Providence Island, Bahamas

Services Rendered

- Preparation of Environmental Impact Assessment
- Initiation of Baseline Monitoring of Water and Sediment Quality
- Preparation of Environmental Management Plan
- Modeling of Ecological Risk Scenarios for Oil Spills

Project Summary

ATM was part of a team retained by Shell Bahamas, Ltd. to conduct an environmental assessment of the proposed Shell Bahamas Offshore Berthing Buoys and Fuel Pipeline Project at Clifton Pier. A formal EIA document was required by the Bahamas government to be submitted to the Bahamas Environment Science and Technology (BEST) Commission.

ATM conducted oil spill modeling scenarios to determine the potential changes that would occur at the facility in the event of a spill. ATM also initiated baseline monitoring of water and sediment quality to provide a benchmark for determination of the environmental health of the project area prior to construction of the project. An environmental management plan was developed by ATM to address environmental control operations at the offshore berthing facility.

Following submission of the EIA, the BEST Commission approved the project after extensive discussions with government representatives and the development of mitigation plans to address the environmental risks.



Nassau Harbor Dredging Environmental Impact Assessment

Kerzner International

Nassau, Bahamas

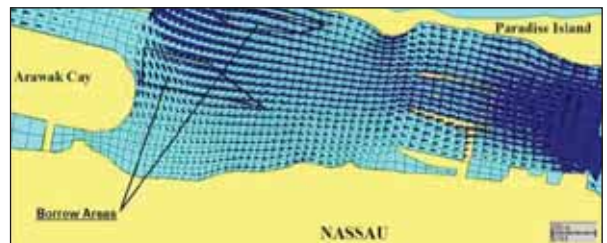
This project had the dual purpose of creating an improved navigation channel for cruise ships while providing material for a land reclamation project on Athol Island in the Bahamas. This beneficial use study was part of an Environmental Impact Assessment (EIA) for the Athol Island Golf Course project. The proposed dredging area was located in western Nassau Harbor, approximately 5 miles from Athol Island. This also created some logistical concerns in terms of material transport. The following studies were conducted in support of this project.

- Bathymetric Survey
- Inventory and Mapping of Marine Species and Habitats
- Hydrodynamic Model to Evaluate Current and Flow Impacts
- Sediment Transport Model to Evaluate Turbidity Increases and Sedimentation
- Measurement of Currents, Flows, and Water Levels in the Harbor
- Wave and Shoreline Assessment Study
- Sediment and Water Quality Sampling and Analysis
- Geotechnical Sampling and Analysis

Specific environmental design components, potential benefits, and findings based on the completion of these studies are summarized as follows.

- There are negligible current changes.
- Post-project storm waves have the potential to create additional shoreline erosion.
- Blasting within the dredge area may be necessary, potentially impacting marine life, with specific concern relative to nearby dolphin holding pens.
- Sediment quality testing shows the presence of some contaminants, but not at levels of concern relative to EPA screening criteria.

A detailed pipe corridor layout and impact evaluation was also completed and submitted with an Environmental Management Plan (EMP) following detailed geotechnical studies. In summary, this project represents a comprehensive environmental analysis of impacts associated with the potential widening of Nassau Harbor. A major concern for most dredging projects is disposal; however, this study has found a beneficial use for the dredged material that aids both the Bahamas Government (which requested the dredging study) and the Athol Island land reclamation project.



Old Bahama Bay Resort Restoration

West End Resorts, Ltd.

West End, Grand Bahama Island

Services Rendered

- Feasibility and Market Analysis
- Environmental Impact Assessment
- Marina Design
- Design of Site Civil Components
- Permitting
- Construction Management Services

Project Summary

West End Resorts retained ATM to assist in the preparation of a feasibility and marketing analysis for a redesign of the existing Jack Tar Resort on Grand Bahama Island, which had been closed and abandoned since 1989.

ATM's proposal called for the complete reconstruction and transformation of the marina and commercial harbor into one unified recreational facility with a single entrance. An Environmental Impact Assessment was prepared that included design of the 150-slip marina as well as water distribution, wastewater collection, roadways, parking facilities, and storm drainage for the 175-room hotel, shops, customs house, restaurant, and the residential components of the project, Pine Island and The Isles at Old Bahama Bay.

ATM was also responsible for all project permitting through the appropriate Bahamian governmental agencies. The first phase of the marina was completed in April 1999.

Experience gained in the Bahamas during this and other similar projects positioned ATM as a leader in marina, coastal, and environmental consulting and support for development projects for the Bahamian government.



Dolphin Interactive Exhibit at Atlantis Resort Phase III

Kerzner Development

Paradise Island, Bahamas

Services Rendered

- Environmental Impact Assessment
- Planning and Design
- Permitting
- Construction Inspection

Project Summary

The Dolphin Interactive Exhibit at Atlantis is a world-class entertainment and educational facility for visitors of the upscale Paradise Island Resort and Casino at Atlantis.

In addition to the daily guests and visitors desiring a close encounter with magnificent creatures in the Dolphin Swim Experience pools, the Dolphin Interactive Exhibit's blend of entertainment, educational, and medical facilities attract students, researchers, medical and behavioral scientists, and dolphin enthusiasts from all walks of life.

The Dolphin Interactive Exhibit project consists of a series of concrete floating dock enclosures for 20 to 35 dolphins, an observational building, a dolphin medical support area, quarantine/medical pools, guest services areas, and a marine mammal hospital.

Phase III of the Atlantis Resort expansion on Paradise Island also includes a new hotel and expanded casino, a recreational water slide feature, and a manmade canal connecting the entrance of the existing lagoon to Nassau Harbour.

In support of the EIA, Kerzner Development conducted extensive studies to determine the suitability of the Atlantis facility for dolphins. These studies served as the baseline information that led to the decision to create a world-class interactive dolphin facility and marine mammal hospital as part of the Atlantis experience.



EIA and Engineering Assessment

Gold Rock Creek Enterprises, Ltd./ Bahamas Film Studios Gold Rock Creek, Grand Bahama Island

Services Rendered

- EIA Development
- Nearshore Environmental Assessment
- Upland Impact Assessment
- Coastal Processes Evaluation
- Engineering Alternatives Assessment
- Wave and Shoreline Modeling
- Water Quality Modeling
- Sediment Transport Modeling

Project Summary

ATM provided an Environmental Impact Assessment (EIA) and engineering development services for the creation of a basin and upland support area for major film production at the Bahamas Film Studios. The facility consists of a large dredged basin with upland support facilities. This work involved the assessment of impacts to adjacent natural resources due to construction, determination of baseline conditions, and full development of an EIA for the project. Additional modeling of project impacts to nearshore waves, currents, and sediment transport was also conducted in support of the EIA document.

Engineering support services included analysis of constructed infrastructure and recommendation of improvements, including reduction in wave seiche within the constructed basin.



Paradise Island Environmental Site Assessment

Kerzner International Holdings

Paradise Island, Bahamas

Services Rendered

- Environmental Site Assessment
- Site Reconnaissance
- Historical Records Review
- Interaction with Regulatory Governmental Agencies
- Indicated Recognized Environmental Conditions
- Suggested Recommendations for Corrective Action

Project Summary

ATM provided all services necessary to complete an Environmental Site Assessment (ESA) for Kerzner International properties located on Paradise Island, Bahamas, by using a due diligence approach consistent with practices and standards implemented by the United States. ATM used the ASTM Standard E1527-05 as a due diligence guideline for this assessment. ATM indicated obvious signs of Recognized Environmental Conditions (REC) associated with the subject site and adjacent properties and provided recommendations for corrective action.

The scope of work for the ESA consisted of site reconnaissance, a historical records review, contact interviews, and environmental government official interviews. The ESA also included visual identification and interpretation of site conditions, identification of hazardous substances, petroleum product storage, previous disturbances and/or concerns, asbestos testing, water quality testing, and wetland determination recommendations based on the regulations of the U.S. Army Corps of Engineers.

The 461-acre subject property is located just north of Nassau, Bahamas, and accounts for roughly 70 percent of Paradise Island. This subject area is primarily commercial properties that make up the Atlantis Resort and associated developments owned by Kerzner International Holdings of Paradise Island. ATM investigated the entire Paradise Island to account for additional contamination, noted environmental conditions, and/or documented records of previous environmental concerns to assist in the completion of this assessment.



Ginn Sur Mer Environmental Impact Assessment

Ginn Development

West End, Grand Bahama Island, Bahamas

Services Rendered

- Environmental Impact Assessment (EIA)
- Environmental Management Plan (EMP)
- Construction Inspections and Monitoring
- Dewatering System Design
- Marina Layout, Entrance Channel, and Jetty Design
- Shoreline Erosion and Littoral Transport Modeling (GENESIS)
- Offshore Bathymetric Mapping and Sidescan Sonar
- Sandy Beach and Dune Restoration Design
- Sand Source Studies
- Shoreline Stabilization Design
- Hydrodynamic and Hydraulic Modeling
- Tide Studies
- Water Quality Sampling
- Marine Ecology Monitoring (Corals, Seagrass)
- Mangrove Mitigation Plan



Project Summary

Ginn Sur Mer resort was originally envisioned as a \$4.9 billion master-planned development with 4,000+ condo hotel units, a 5-star resort with miles of waterways and a Grand Canal, a world-class marina, and a signature golf course. However, the project was suspended due to the economic recession.

ATM was closely involved with the project from the beginning and wrote the EIA and supporting documents for submission to the Bahamian government. Since EIA submission, ATM has provided ongoing coordination of all environmental issues and plans, ongoing coastal engineering services, and design of the marina and internal waterways by conducting hydraulic and flushing analyses. ATM also conducted preconstruction baseline ecological monitoring of offshore coral reefs and seagrass beds.



Athol Island Golf Course Environmental Impact Assessment

Kerzner Development, Inc.
Athol Island, Bahamas

Services Rendered

- Environmental Impact Assessment (EIA)
- Environmental Management Plan (EMP)
- Impact Mitigation Planning and Design
- Environmental Planning

Project Summary

ATM produced an Environmental Impact Assessment (EIA) for the proposed development of the Athol Island Golf Course. The Athol Island Golf Course serves as an amenity to the existing Atlantis Resort on Paradise Island.

The course was designed in the links style, which is characterized by preservation of much of the island's natural vegetation and a less manicured appearance than other resort-oriented golf courses. The links design concept affords several environmental advantages, including the use of existing natural vegetation, a substantially smaller need for fertilizer and irrigation than a standard course, and retention of existing habitat and cover for native species.

In support of the EIA, ATM conducted extensive studies on the island in order to identify and map important natural and cultural resources. The studies included the following:

- Inventory and mapping of the upland plant and animal species and habitats
- Inventory and mapping of marine species and habitats surrounding the island
- Cataloguing and mapping of an extensive debris field
- Water quality testing and analysis
- Review and development of Environmental Assessment outlines for locally identified potential sites for landfill sourcing
- Cultural and historic resource assessment in cooperation with the National Museum of the Bahamas



Crab Cay Development

Great Exuma, Bahamas

Services Rendered

- Pre-Project Environmental Assessment of Proposed Site
- Design Layouts for Marina Basin and Entrance Channel
- Engineering Design and Layout of Placement Site
- Coordination and Permitting Assistance
- Development of Environmental Monitoring Program for Approval by the Government of the Bahamas
- Assistance with Selection and Purchase of Turbidity Containment and Monitoring Equipment
- Assistance with Installation of Turbidity Curtain
- Instruction on Use of Monitoring Equipment and Procedures
- Collection of Monitoring Data for Submittal to the Government
- Periodic Site Visits and Construction Management Services
- Before and After Dredge Surveys for Volume Certification

Project Summary

ATM assisted the developer with obtaining permits to dredge and dispose of roughly 250,000 cubic yards of material for the installation of a marina on Crab Cay Island near Great Exuma, Bahamas. The material was placed on the island for future use as a recreational beach. ATM staff provided layout and engineering services both for the excavation of the marina basin and the placement site.

Construction management services were also rendered, including assistance with implementation of the government-approved Environmental Monitoring Program. Installation of turbidity control measures and instruction on their use was also provided.

The excavation and fill placement activities were completed in April, 2004 (with the volume certification provided by ATM to the developer for contractor payment).



Cayman Palace Hotel and Resort

EDSA

Grand Cayman Island

Services Rendered

- Preliminary Environmental Assessment
- Coastal Engineering Report
- Infrastructure Requirements

Project Summary

ATM assisted NBS Architects and EDSA during the initial planning phase for this premier hotel and resort development located on Grand Cayman Island. Staff attended meetings with the planning team to establish the goals and objectives of the project.

Working with representatives from the British West Indies' Government Planning and Environment, ATM staff conducted a thorough environmental and coastal engineering investigation of the development site.

ATM also completed an Environmental Impact Assessment and submitted mitigation recommendations for the project.



Environmental Impact Statement and Marina Support

Kerzner International Holdings Ltd.

Paradise Island, Nassau, Bahamas

Services Rendered

- Environmental Impact Studies
- Regulatory Permits
- Hydrologic/Hydraulic Modeling
- Lagoon Flushing Analysis

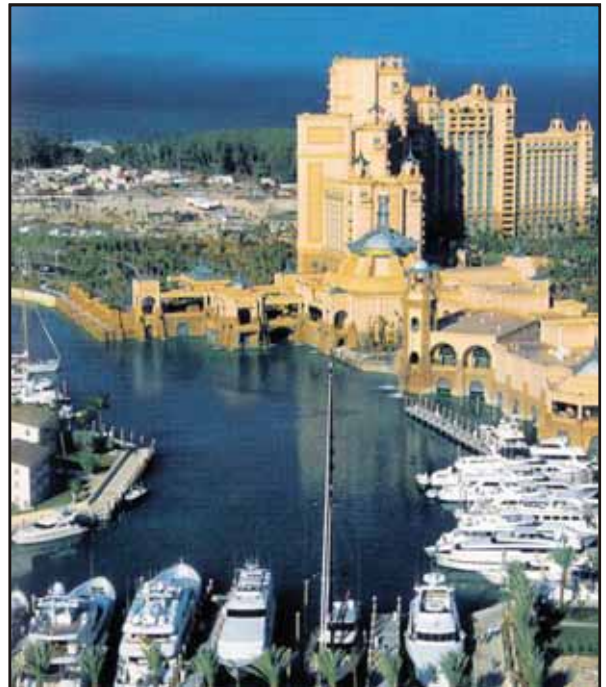
Project Summary

In support of a \$600 million expansion of the hotel and resort complex at Paradise Island (Atlantis), Nassau, Bahamas, ATM performed a number of extensive ecological, water quality, geohydrology, soils, geology, surface water, wastewater, hydrodynamic, socioeconomic, cultural resources and transportation studies.

A comprehensive Environmental Impact Statement (EIS) was prepared according to the guidelines of the National Bahamas Trust and submitted to the Bahamian government for review and comment. All regulatory permits were then obtained.

ATM also completed a hydrodynamic and water quality model, storm surge analysis, EIS, and Marine Operations and Management Plan in support of the marina development at Atlantis. The marina, which features 63 yacht slips and a 100-foot wide channel connection to Nassau Harbor, displays excellent water quality and water exchange that is eight times greater than the standards set by the United States EPA.

A Phase III EIS was also completed by ATM in support of additional development on the island.



Westin Roco Ki Beach and Golf Resort (Phase I)

Richard Knorr International, Ltd.
Punta Macao, Dominican Republic

Services Rendered

- Infrastructure Conceptual Design
- Environmental Assessment and Master Plan Environmental Recommendations
- Environmental Impact Study and Management Plans (in Spanish and English)

Project Summary

ATM conducted environmental and engineering studies for the new 200 Ha (~500 acres) Westin Roco Ki Beach and Golf Resort project. Services included site visits, environmental upland and marine field work, infrastructure preliminary design, beach and dune erosion assessment, development of community inclusion strategies, assessment and mitigation of project impacts, and definition of conservation areas.

As part of the sustainable development approach, the project included more than 50 Ha (~120 acres) of mangrove conservation areas.

ATM assisted in revising the Master Plan, participated in public presentations and regulatory agency meetings, and is providing ongoing support to the project design team.

The resulting EIS report was produced in Spanish for presentation to the Dominican government and in English for the European Investment Bank, the developer and investors.

Technical support was provided through the obtainment of environmental permits.



Salt Cay Barge Landing Environmental Impact Assessment

Salt Cay, Turks and Caicos Islands

Services Rendered

- Terms of Reference Negotiations
- Environmental Impact Assessment
- Mitigation Planning and Design
- Flushing Analysis
- Coastal Engineering Recommendations
- Coastal Engineering Conceptual Design

Project Summary

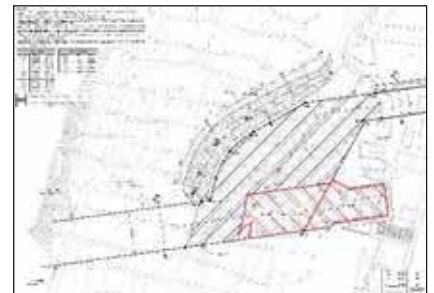
ATM provided environmental impact and related services associated with the proposed government barge landing and jetty on Salt Cay, Turks and Caicos. The government is developing a public barge landing to service the island of Salt Cay. ATM worked with the government to develop the conceptual design and coastal engineering technical justification for the project elements.

ATM completed the development of the Terms of Reference for the Environmental Impact Assessment in conjunction with the Turks and Caicos Department of Coastal and Environmental Resources (DECR). The Terms of Reference identified the critical issues of potential impact from the project and mitigation plans that would be required.

In preparation for the environmental impact analysis, ATM reviewed existing site bathymetric and topographic data, recommended changes to the original project design to reduce marine impacts and costs, and provided guidance to government staff for mitigation of structural impacts to upland historic buildings.

Subsequently, ATM reviewed the proposed barge landing and associated jetty project for potential environmental impacts to the cultural resources of the project site and marine and terrestrial environment. The project was also reviewed to anticipate construction and operational impacts.

ATM completed the impact assessment and provided mitigation guidelines that outlined a program to minimize potential impacts from the proposed project. The environmental impact assessment was developed in close coordination with the DECR and the government Department of Physical Planning.



Amanyara – Northwest Point

Caicos Resorts, Ltd.

Providenciales, Turks and Caicos Islands

Services Rendered

- Ecological Assessment
- Environmental Impact Assessment
- Infrastructure Analysis
- Surface Water Management System Engineering
- 3-D Water Quality and Hydraulic Model Simulations
- Environmental Management and Operations Plans
- Pond Management Plan

Project Summary

A critical component to the aesthetic appeal of Amanyara was realizing the architect's desire for over 20 acres of reflection ponds scattered throughout the resort.

Site conditions dictated that these ponds were to be shallow and lined with water levels maintained via brackish groundwater. To meet these challenges, ATM engineers utilized GIS-based three-dimensional water quality and hydraulic models simulating the long-term operational characteristics of each pond. These efforts resulted in the design of unique circulation, level control, and drainage systems for each pond to maintain aesthetically pleasing conditions.

ATM provided comprehensive environmental and engineering support services to obtain government approval of the proposed design. As part of this work, ATM engineers and biologists conducted an ecological assessment of the project site to support the development of an Environmental Impact Assessment. This work entailed an analysis of the entire project, including a terrestrial ecological survey, analysis of the proposed infrastructure design, etc.

ATM engineers also developed a series of environmental management plans to be followed during the construction and subsequent operation of Amanyara, including a pond management plan.



Leeward EIA and Coastal Engineering Support

Leeward Limited

Providenciales, Turks & Caicos Islands

Services Rendered

- Environmental Impact Assessment
- Master Planning
- Design
- Permitting
- Plans, Specifications and Cost Estimates
- Construction Administration

Project Summary

ATM engineers and marine biologists developed an Environmental Impact Assessment and preliminary designs for a 475-acre oceanfront development in Providenciales. Evaluations of alternative canal and harbor layouts, dredging and spoil disposal, stormwater runoff, shoreline stabilization options, wastewater treatment and disposal, and stormwater resources management were used to prepare the Master Development Plan.

Erosion control project elements for the 10,000-foot beach nourishment project design included dune restoration and revegetation, sand source investigations, design of three rock groins to provide storm protection for upland properties and a recreational sandy beach.

ATM's work included the preparation of plans, specifications, and cost estimates for the projects recommended in the Master Development Plan.



Third Turtle Beach Restoration and Channel Improvements

Oceanpoint Development Ltd.

Providenciales, Turks and Caicos Islands

Services Rendered

- Beach Design
- Jetty and Groin Design
- Maintenance Dredging Design
- Supplemental Environmental Impact Assessment
- Revetment and Wall Design
- Plans and Specifications
- Construction Observation and Support

Project Summary

ATM provided ongoing support for the design, permitting and construction of a major resort development in Providenciales, Turks and Caicos. Elements of the project included restoration of 900 feet of severely eroded beach and the construction of a rock groin and jetty structure to stabilize the constructed beach.

Additional efforts included maintenance dredging of the adjacent marina channel and the use of beach-compatible material from the dredging project for the beach restoration. The shoreline adjacent to the channel was stabilized using the combination of a sheet pile wall and revetment.

This effort included the development of monitoring and maintenance protocols for the project and the completion of a supplemental Environmental Impact Assessment. ATM supported the successful review and approval process with the government, which was required for project implementation, and also performed construction administration services.



Sailrock Development

CMK BWI, Ltd.

South Caicos, Turks and Caicos Islands

Services Rendered

- Marina Market Assessment
- Coastal Engineering
- Concept Design
- Modeling
- Surveying
- Environmental Services

Project Summary

ATM provided a multitude of engineering consulting services in support of the Sailrock Development, located on South Caicos, Turks and Caicos Islands. The development is proposed to consist of four separate projects, including over 1,700 residential units, approximately 500 hotel keys, restaurants, retail and an 18-hole golf course.

ATM conducted a comprehensive marina market assessment to determine boating market trends, existing marina supply, and potential marina berthing demand in South Caicos. Topographic and bathymetric surveys were conducted at several locations around the island.

Coastal engineering services included the development of multiple beach enhancement concepts and the preliminary design of the inland extension of an existing water body. Modeling services, consisting of wind, wave, storm surge and flushing analyses were conducted.

Environmental services performed in support of the Sailrock Development included a mangrove assessment and document preparation as part of a Specific Environmental Impact Assessment (SEIA).





Applied Technology & Management, Inc.
www.appliedtm.com

The background of the entire page is an underwater photograph of a coral reef. A large, branching, light-colored coral structure dominates the center, with various other coral species and green seaweed visible in the foreground and background. The water is clear and blue.

BIOIMPACT, INC.

**P.O. BOX 132
KINGSHILL, ST. CROIX
U.S. VIRGIN ISLANDS 00851**

PHONE NUMBER 340 773-5881, 340 718-3246

FAX NUMBER 340 718-3800

EMAIL bioimpact@islands.vi

BIOIMPACT, INC. QUALIFICATION STATEMENT

Bioimpact, Inc. is a Virgin Islands Corporation licensed to do business in the Virgin Islands Since 1986.

Bioimpact, Inc. is qualified to conduct and prepare both terrestrial and marine Environmental Assessment Report required by the Department of Planning and Natural Resources, Division of Coastal Zone Management, and the U.S. Army Corps of Engineers.

Amy Claire Dempsey, principal of **Bioimpact, Inc.** is certified in wetland delineation by the National Wetland Science Training Cooperative to establish wetland jurisdictional limits for the U.S. Army Corps of Engineers.

Bioimpact, Inc. is experienced in the creation and implementation of wetland mitigation programs.

Bioimpact, Inc. is experienced in developing and implementing marine water quality monitoring programs and long term photographic monitoring of the benthic environment. Amy Claire Dempsey, principal of **Bioimpact, Inc.** is an EPA certified water sampler and analyst.

Bioimpact, Inc. has successfully designed and implemented large scale coral and seagrass transplant programs.

Bioimpact, Inc. is experienced in cable landfall studies and the establishment of routes for undersea cables and monitoring of cable installations to minimize impact.

Bioimpact, Inc. is experienced in endangered species surveys included the endangered coral species and is experienced in preparing Biological Assessments for National Marine Fisheries and Fish and Wildlife Service.

Bioimpact, Inc. is experienced in preparing Environmental Assessments for federal permitting and the issuance of Findings of No Significant Impact.

Bioimpact, Inc. is experienced in the preparations of Phase I Environmental Site Assessments as set forth in the ASTM Standard Practice Designation E 1527-05 and All Appropriate Inquires and Phase II Environmental Site Assessments as set for in ASTM E1903 – 11.

Bioimpact, Inc. is experience in the development and implementation of sampling plans to detect and delineation hazardous materials and petroleum products.

Bioimpact, Inc. has conducted environmental studies in the U.S. Virgin Islands, Puerto Rico, British Virgin Islands, throughout the Caribbean and in the Florida Keys.

PARTIAL JOB LIST
UP-DATED June 14, 2013

MONITORING PROGRAMS

- 2013 – current** Environmental Monitoring of the wetland created as mitigation for the development of VIWMA's St.Croix Transfer Station
- 2013 –** Development of the Monitoring Plans for VIDPW's Improvements to Veterans Drive St. Thomas
- 2013 –** Development of the Monitoring Plans for VIPA's Dredging of Crown Bay Marine Terminal and Turning Basin, St. Thomas
- 2013 –** Development of the Monitoring Plans for VIPA's Maintenance Dredging of Crown Bay Marina, St. Thomas
- 2013 –** Development of the Monitoring Plans for Westin Resorts Permitting of the dock and Improvements of Drainage, St. John
- 2012 – 2013** Development of the Monitoring Plans for viNGN's Cable System in the USVI.
- 2012- current** Water Quality and Environmental Monitoring Program for the increase in discharge from the Frenchman's Reef Hotel, St. Thomas
- 2011-2012** Water Quality and Environmental Monitoring Program for the installation of a Chiller System and reconstruction of a dock at Frenchman's Reef Hotel, St. Thomas.
- 2010** Development of the Water Quality and Environmental Monitoring Program for the development of Thatch Cay, with special emphasize on the endangered coral species
- 2009** Establishment of the baseline for the dredging of Charlotte Amalie Harbor and entrance channel and the filling of the dredged hole in Lindbergh Bay, St. Thomas for West Indies Company
- 2009 – 2010** Water Quality Monitoring Plan for the Construction of the dock at Frenchman's Cove, St. Thomas for Marriott Vacation Club, Inc.
- 2009-current** Environmental Monitoring for the development of Oil Nut Bay, and YCCS Yacht Club, Virgin Gorda, BVI, for Victor International
- 2008-2009** Environmental Monitoring of the development of Scrub Island, BVI, for MainSail

Development, LLC

2007 – 2010 Water Quality Monitoring for the development of the Calabash Boom Affordable Housing Complex in Calabash Boom, St. John for Reliance Housing

2007 - 2009 Water Quality and Environmental Monitoring for the Subdivision of 77 acres in Hansen Bay, St. John, for Flamboyant

2006- 2008 Water Quality Monitoring for the dredging of the Sand Channel for the V.I. Water and Power Authority

2006-2007 Water Quality Monitoring for the renovations to the Ritz Carlton Hotel, St. Thomas for Ritz Carlton

2006 - 2010 Environmental monitoring for the placement of undersea cables at the Global Crossing Cable Station in St. Croix for Global Crossing Network, ALCATEL and TYCO

2005-2007 Water Quality Monitoring for the dredging of Crown Bay, St. Thomas for the V.I. Port Authority

2005- 2006 Water Quality and Environmental Monitoring for Improvements to the Redhook Marine Terminal for the V.I. Port Authority

2004 - 2011 Water Quality and Environmental Monitoring for the construction of the Pond Bay Resort, St. John for First American Development Group

2003 - 2006 Water Quality Monitoring for the construction of the Enighed Pond Marine Terminal, St. John, for the V.I. Port Authority

2002 - 2008 Water Quality and Environmental Monitoring for the development of Marine Amenities on the island of Lovango, St. John, for the Joseph Markus Trust

2003 - 2004 Water Quality Monitoring for the development of the Crown Bay Marine Terminal, St. Thomas for the V.I. Port Authority

2002-2005 Water Quality Monitoring for the improvements to the Gallows Bay Marine Terminal, St. Croix, for the V.I. Port Authority

1999-2006 Water Quality Monitoring for repairs to the Frederiksted Pier, St. Croix, for the V.I. Port Authority

2001-2008 Coral Transplant Monitoring for the Enighed Pond Marine Terminal, St. John, for the

V.I. Port Authority

- 2001- 2007** Coral Transplant Monitoring for the Mangrove Lagoon Sewage Treatment Plant Outfall, St. Thomas for the V.I. Department of Public Works
- 2000 - 2003** Water Quality Monitoring for the dredging of Charlotte Amalie Harbor, St. Thomas, for the V.I. Port Authority
- 2001 - 2002** Water Quality Monitoring for Improvements to the Tropical Shipping Dock in Crown Bay, St. Thomas for Misener Marine
- 2000 - 2006** Seagrass Transplant Monitoring for the Seagrass Transplant for the Dredging of Charlotte Amalie Harbor for the V.I. Port Authority
- 1999- 2002** Water quality monitoring for Construction of Cable Stations at Estate Northside for Global Crossings
- 1997-2002** Wetland monitoring of the Airport Mitigation Site at the Henry E. Rohlsen Airport for the V.I. Port Authority
- 1997 - 2002** Wetland monitoring for the Fairplains Mitigation Site at the Henry E. Rohlsen Airport for the V.I. Port Authority
- 1997- 2005** Water quality monitoring program for Construction of the Christiansted Boardwalk in St. Croix prepared for the Government of the Virgin Islands
- 1997-2005** Wetland monitoring of Tren Urbano, PR 5 and PR 22 Mitigation *Sites in Puerto Rico under subcontract to Nutter and Associates for the Puerto Rico Highway Authority
- 1996** Water quality monitoring program for Expansion and Improvements to the Redhook Marine Terminal in St. Thomas prepared for the V.I. Port Authority
- 1996** Water quality monitoring program for the creation of The Enighed Pond Marine Terminal in St. John prepared for Maguire Group, Inc. for the V.I. Port Authority
- 1996-1998** Water quality monitoring for the Expansion of the Molasses Pier at the Third Port St. Croix conducted for the V.I. Port Authority
- 1995** Water quality for the Construction of the AT&T Cable Landing Facility, Estate Northside St. Croix, conducted for AT&T Submarine Systems
- 1992-1994** Water quality monitoring program for the Reconstruction of the Frederiksted Pier,

conducted for the V.I. Port Authority, St. Croix

1992-1993 Establishment of a baseline and long term monitoring of the benthic community potentially impacted by the Water and Power Authority Outfall from the Richmond Power Plant, conducted for the V.I. Water and Power Authority, St. Croix

1992-1993 Preparation of a biological monitoring study for the Cooling Pond Discharge, and monitoring of the algal bloom within the cooling ponds; development of management strategies to alleviate algal and runoff problems, the V.I. Alumina Corporation, St. Croix

1990-1992 Water quality monitoring for The Dredging Project and Related Activities in Christiansted Harbor, conducted for the V.I. Port Authority, St. Croix

1989 Turtle Monitoring Program for Manchineel Beach, St. Croix

LARGE SCALE MITIGATION PROGRAMS UPDATED June 14, 2013

Development of the Mitigation Plans for VIDPW's Improvements to Veterans Drive
St. Thomas

Development of the Mitigation Plans for VIPA's Dredging of Crown Bay Marine
Terminal and Turning Basin, St. Thomas

Development of the Mitigation Plans for VIPA's Maintenance Dredging of Crown
Bay Marina, St. Thomas

Development of the Mitigation Plans for Westin Resorts Permitting of the dock and
Improvements of Drainage, St. John

Virgin Islands Waste Management Authority creation of an Herbaceous Wetland as mitigation
for the construction of the Transfer Station at the Anguilla Landfill, St. Croix

Mainsail Coral Transplant/Seagrass Transplant for impacts associated with the development of
the Scrub Island Resort BVI, Bioimpact, Inc. came in and completed the transplant and
monitoring began by others (Approximately 3000 Corals)

Victor International Coral Transplant for impacts associated by the development of an access
ramp and dock at Oil Nut Bay, BVI (Approximately 300 corals)

V.I. Port Authority Mangrove Mitigation for the construction of the Enighed Pond Terminal in
St. John (2.8 Acres of Mangrove Wetland)

Joseph Markus Trust Creation of Acropora Thickets and Artificial Reefs as mitigation for the construction of a barge landing facility on the island of Lovango

V.I. Port Authority Transplanting of coral out of the area of impact for the development of the Crown Bay Marine Terminal, St. Thomas (Approximately 3000 Corals)

Department of Public Works Mangrove Mitigation Project for the construction of the Mangrove Lagoon Sewage Treatment Plant, St. Thomas (Approximately 1 Acre of Mangrove Wetland)

V.I. Port Authority Transplanting of Coral out of the area of impact for the Enighed Pond Marine Terminal Project, St. John (Approximately 50,000 Corals)

Department of Public Works Transplanting of Coral out of the area of impact for the placement of the Mangrove Lagoon Sewage Treatment Plant Outfall, St. Thomas (Approximately 7,000 Corals)

V.I. Port Authority Transplanting of Coral out of the area of impact for the mooring improvements to the Frederiksted Pier, St. Croix (Approximately 300 corals)

V.I. Port Authority Transplanting of Seagrass from the Dredging footprint for the dredging of Charlotte Amalie Harbor, St. Thomas (Approximately 2 acres)

V.I. Port Authority/Department of Public Works, Mangrove Mitigation Project for the construction of the Molasses Dock Road, St. Croix (Approximately ½ acre)

V.I. Port Authority creation of Herbaceous Wetlands for mitigation at the Henry E. Rohlsen Airport, St. Croix (Approximately 1 acres)

V.I. Port Authority mitigation plan for impact incurred in Fairplains Gut by the VIPA plan for creation of 16,000 Square Feet of Wetland at the Manning Bay Site, St. Croix

V.I. Water and Power Authority plan for creation of 4.1 Acres of Wetland as mitigation of the construction of the South Shore Power Plant, Third Port, St. Croix

Green Cay Plan for mitigation for the impacting of 12 Acres of Wetland for the construction of the Green Cay Resort, St. Croix

ENVIRONMENTAL ASSESSMENT REPORTS 2009-2013

VIPA's dredging of Crown Bay Marine Terminal and Turning Basin.

VIPA's maintenance dredging of Crown Bay Marina.

VIDPW's Improvements to Bordeaux Road, St. Thomas.

VIDPW's Improvement to Spring Gut Road, St. Croix.

Coral World's Dolphin Exhibit for Coral World (VI), Inc., St. Thomas.

Expansion of the Spratt Bay Homeowners Dock on Water Island.

Veterans Drive Expansion with Parsons Brinckerhoff, for the Department of Public Works
St. Thomas

Chiller Cooling System, BaHaMar, HDR, Grande Bahama

viNGN Submarine Cable Network with Acatel-Lucent for Virgin Islands Next Generation
Network, Virgin Islands

Reverse Osmosis Facility at VIWAPA's St. Thomas Power Plant

Submarine Cable for VIWAPA between the Islands of St. Thomas and St. John

Chiller System and Dock repairs at Frenchman's Reef, St. Thomas

Expansion of Heavy Materials Krum Bay Facility, St. Thomas

33 Mega-Watt Waste to Energy Plant Alpine Energy Group, Inc. St. Thomas

18 Mega-Watt Waste to Energy Plant Alpine Energy Group, Inc. St. Croix

Reverse Osmosis Facility V.I. Water and Power Authority, St. John

Seven Hills Development, Robin Bay Partners, St. Croix

Improvements to the Molasses Dock, V.I. Port Authority, St. Croix

Dredging of the Charlotte Amalie Harbor and the Channel and the Filling of Lindbergh Bay,
West Indies Corporation, St. Thomas

Fueling Station, V.I. Water and Power Authority, St. Croix

ENVIRONMENTAL ASSESSMENT REPORTS 2005 -2008

Port of Mandahl, MSJ Realty, St. Thomas

North Sound Yacht Club, Victor International, Virgin Gorda, BVI

Reconstruction of the Frenchman's Cove Dock, Marriott Ownership Vacation Club, Inc. St. Thomas

Thatch Cay Development, Thatch Cay, LLC, St. Thomas

Smith Bay Development Smith Bay Developers, Inc. Smith Bay, St. Thomas

Subdivision of Great St. James Christian Kejer, Great St. James Island, St. Thomas

Subdivision of Inner Brass Green Island Developers, Inner Brass Island, St. Thomas

Subdivision of Inner Brass Byran family, Inner Brass Island, St. Thomas

Cabrita Point Major Land Permit Cabrita Point Partners, Lionstone LLC, Cabrita Point, St. Thomas

Cabrita Point Major Water Permit Cabrita Point Partners, Lionstone, LLC, Cabrita Point, St. Thomas

Subdivision of 77 Acres in Hansen Bay on the East End of St. John Flamboyant Realty, St. John

Subdivision of 14 Acres in Hansen Bay on the East End of St. John Hansen Bay Development Group, St. John

Expansions and Improvements to the Ritz Carlton Hotel William Karr and Associates, St. Thomas

Modification to Carden Beach Condominiums TK Properties, Inc. St. Croix

Development of Betty's Hope V.I. Port Authority, St. Croix

Expansion of the Compass Point Marine Margate Management, Benner Bay, St. Thomas

Construction of Maintenance Buildings HOVENSA, St. Croix

Replacement of Existing Stacks HOVENSA, St. Croix

Installation of a Permanent Barge Landing Facility on Lovango Cay Joseph Markus Trust,

BIOIMPACT, INC.



Lovango Cay

Relocation of the Existing Barge Landing and Construction of a Swim Dock and Beach Enhancing Devices on Little St. James LSJ, LLC, Little St. James

Development of Affordable Housing in Calabash Boom, Reliance Housing, St. John

Demineralized Water System and Storage Tank Upgrades, V.I. Water and Power Authority, St. Croix

Development of a Pizza Bar and Miniature Golf Course, Divi Carina Bay Resort, St. Croix

Placement of Fuel Pipelines on the Ann E. Abramson Pier, Royal Caribbean Cruise Lines, St. Croix

Development of a Marine and Related Infrastructure, Coral Bay Marina LLC, St. John

Development of a Marine Mammal Encountered Facility, Coral World VI, St. Thomas

Improvements to The “Doc” James Race Track, TRAXCO, St. Croix

Maintenance Dredging and the Permitting of Permanent Moorings, Westin Resort, St. John

Construction of the LSF Facility, HOVENSA, St. Croix

Construction of the LSF Project on Uplands, HOVENSA, St. Croix

Construction of the LSF Project on Submerged Lands, HOVENSA, St. Croix

Construction of Modular Buildings, HOVENSA, St. Croix

Construction of Housing in Estate Blessing, HOVENSA, St. Croix

Permitting of an Existing Borrow Pit, HOVENSA, St. Croix

ENVIRONMENTAL ASSESSMENT REPORTS 2000-2004

Compass Point Marina Expansion of the existing marina with Springline Architects, St. Thomas

Emergency Electrical Cable to St. John V.I. Water and Power Authority, St. Thomas/St. John

Richmond Sand Channel Dredging V.I. Water and Power Authority, St. Croix

The background of the page is a faded, light blue underwater photograph of a coral reef. Various types of coral, including branching and table corals, are visible against a bright, sunlit water background.

Hassel Island Electrical Cable Replacement V.I. Water and Power Authority, St. Thomas

Golden Resort Hotel Casino Resort Environmental Assessment Report, St. Croix

Crown Bay Marine Terminal Improvements Environmental Assessment Report with Adams, Inc., St. Thomas

Global Crossings Environmental Assessment Report for the Placement of a Point of Presence in Frederiksted, St. Croix

Innovative Telephone Environmental Assessment Report for the Burial of Fiber Optic Cable on the North Shore of St. Croix

Innovative Telephone Environmental Assessment Report for the Burial of Fiber Optic Cable on the West End of St. Croix

Callaloo Club Blowing Point Environmental Assessment for the Crasion of a marina on Anguilla, BWI

V.I. Water and Power Authority Waterline Environmental Assessment for a waterline between St. Thomas and St. John

V.I. Water and Power Authority Powerline Environmental Assessment for a utility line between St. Thomas and Little St. James

Global Crossings Environmental Assessment Report for the South American Crossing Cable Station at Estate Northside

Water Island Ferry Dock Environmental Assessment Report for the construction of a ferry dock on Water Island

Cuisanart Environmental Impact Assessment for Beach Renourishment, Anguilla, BWI

Cinnamon Bay Environmental Impact Assessment for Development of a Marine Facility, Anguilla, BWI

Crown Bay Benthic Habitat Survey of Crown Bay and Gregerie Channel as a supplement to the USACOE Feasibility Report

Frederiksted Pier Environmental Assessment Report for the Improvements to the Existing Frederiksted Pier, St. Croix

Little St. James Environmental Assessment Report for a Private Dock on Little St. James Island

Government of the Virgin Islands Environmental Assessment Report for Phase II of the
Christiansted Boardwalk, St. Croix

Beal Aerospace Environmental Assessment Report for Construction of the World Headquarters
Estate Great Pond, St. Croix

ENVIRONMENTAL ASSESSMENT REPORTS 1988-2000

Divi Hotel Environmental Assessment Report for the reconstruction of a dock, St. Croix

Global Crossing Environmental Assessment Report for the construction of a Cable Terminal
Building and a corridor for 8 submarine fiber optic cables

HOVENSA Environmental Assessment Report for the Construction of a Coker and Coker Dock
at the Existing HOVIC Refinery

V.I. Port Authority Environmental Assessment Report for the construction of a Mooring Dolphin
at the Frederiksted Pier

Seaborne Environmental Assessment Report for the Development of a Seaplane Terminal at the
old Seaplane Ramp, St. Croix

Forest Bay Environmental Assessment Report for the Development of a Marina and related
facilities in Forest Bay Anguilla, BWI

META Resorts Environmental Assessment Report for the development of a Dolphin Lagoon at
Meads Bay Anguilla, BWI

Government of the Virgin Islands Environmental Assessment Report for the Construction of a
boardwalk in Christiansted, St. Croix

V.I. Port Authority Environmental Assessment Report for the runway extension at the Henry E.
Rohlsen Airport under subcontract to LPA Group

V.I. Port Authority Environmental Assessment Report for the expansion of the Redhook Marine
Terminal, St. Thomas

V.I. Port Authority Environmental Assessment Report for the creation of the Enighed Pond
Marine Facility, St. John

Coral World (VI), Inc. Environmental Assessment Report for the renewal of the submerged land



lease for the Coral World Facility, St. Thomas

Cowpet Bay Environmental Assessment Report for the modification of the existing permit for construction of a seawall, St. Thomas

Watergate East Villas Environmental Assessment Report for the Construction of a Rip-Rap Revetment, St. Thomas

Christiansted Boardwalk Environmental Assessment Report for the construction of a boardwalk on the Christiansted Waterfront, St. Croix

V.I. Water and Power Authority Environmental Assessment Report for Improvements to the fuel dock at the Power Generating Facility, St. Thomas

La Domaine Environmental Assessment Report for the subdivision of 40 Acres of Land in Estate Misngunt, St. Thomas

V.I. Port Authority Environmental Assessment Report for the expansion of the Alexander Hamilton Airport Terminal and Highway 64 Relocation, St. Croix

AT&T Environmental Assessment Report for the Cable Landing Facility at Estate Northside, St. Croix

DEVCON Environmental Assessment Report for the Dredging of the Christiansted Sand Channel, St. Croix

VIALCO Environmental Assessment Report for the Expansion of the Red Mud Storage Ponds, VIALCO Alumina Facility, St. Croix

VIALCO Environmental Assessment Report for the creation of a stormwater drainage system, VIALCO Alumina Facility, St. Croix

VIALCO Environmental Assessment Report for the Mining of Caliche, VIALCO Alumina Facility, St. Croix

Molasses Dock/VI Port Authority Consulting on the Environmental Assessment Report for the Molasses Dock Terminal at the Third Port Facility, subcontracted by Frank Torrez, and the V.I. Port Authority, St. Croix

SELECTED ENVIRONMENTAL ASSESSMENT REPORTS 1988 -1993

St. Croix by the Sea Environmental Assessment Report for beach renourishment and the construction of jetties, St. Croix

Vieques Environmental Assessment Report for the creation of a shrimp farm in Puerto Ferro, Vieques, Puerto Rico

MSRC Dock Environmental Assessment Report for the construction of a pier in the HOVIC West Turning Basin, St. Croix

Eden Beach Proposed hotel and condominium project Environmental Assessment Report, St. Croix

Tamarind Reef proposed reconstruction and expansion of the Tamarind Reef Hotel, Hotel, St. Croix

V.I. Water and Power Authority Environmental Assessment Report and U.S. Corps of Engineers Application for the construction of two gas turbines at the Third Port Site, St. Croix

Lovango Cay Environmental Assessment Report for the creation of a subdivision on Lovango Cay Placement of a private dock, St. Thomas

VIALCO Environmental Assessment Report for the construction of a well water gathering system for wells at the Virgin Islands Alumina Corporation's Plant, St. Croix

Crawl Cay Environmental Assessment Report, Wetlands Delineation and Hammock Studies of Crawl Cay, Florida, for Monroe County

Jack's Bay Environmental Assessment Report for the subdivision of Approximately 300 Acres into 64 lots at Estate Jack's and Isaac's Bays, St. Croix

VIALCO Environmental Assessment Report for the Expansion of the Bauxite Building at the Virgin Islands Alumina Corporation's Alumina Facility, St. Croix

Carambola Beach Club Environmental Assessment Report for the repair and improvement of the Carambola Beach Club facility prepared for Danested, St. Croix

Salt River Environmental Impact Statement for the proposed National Park at Salt River, St. Croix, prepared for the National Park Service

V.I. Water and Power Authority Environmental Assessment Report for the Construction of a desalination unit on St. John, prepared for the V.I. Water and Power Authority, St. John

Carmel by the Sea Environmental Assessment Report for the Construction of a 95 unit condominium at Estate Turner's Hole, St. Croix

VLBA Environmental Assessment Report and Landscaping Plan for the Very Long Baseline Array, St. Croix

Buccaneer Environmental Assessment Report for 20 room addition to the Buccaneer Hotel, St. Croix

Ritz Carlton Zoning Application and Environmental Assessment Report for a 350 room hotel, Estate Davis Bay, St. Croix

Frederiksted Pier Environmental Assessment Report for the construction of a second pier in Frederiksted, St. Croix

Kingston Environmental Assessment Report for Hotel and Condominium Construction, Kingston, Tortola

Airport Warehouse Environmental Assessment Report for construction of a Warehouse Facility at the Alexander Hamilton Airport, St. Croix

Great Pond Environmental Assessment Report, Zoning Application and COE Permit Application for a Hotel and Condominium Project at Estate Great Pond, St. Croix

ENVIRONMENTAL ASSESSMENT REPORTS 1986-1988

Southeast Peninsula, St. Kitts

Columbus Landing, St. Croix

Grapetree Beach, St. Croix

Blue Beards Beach, St. Thomas

St. Croix by the Sea, St. Croix

Divi Dive Canal, Nassau, Bahamas

Ensenada, St. Croix

Virgin Grand, St. Croix

Sugar Bay, St. Croix

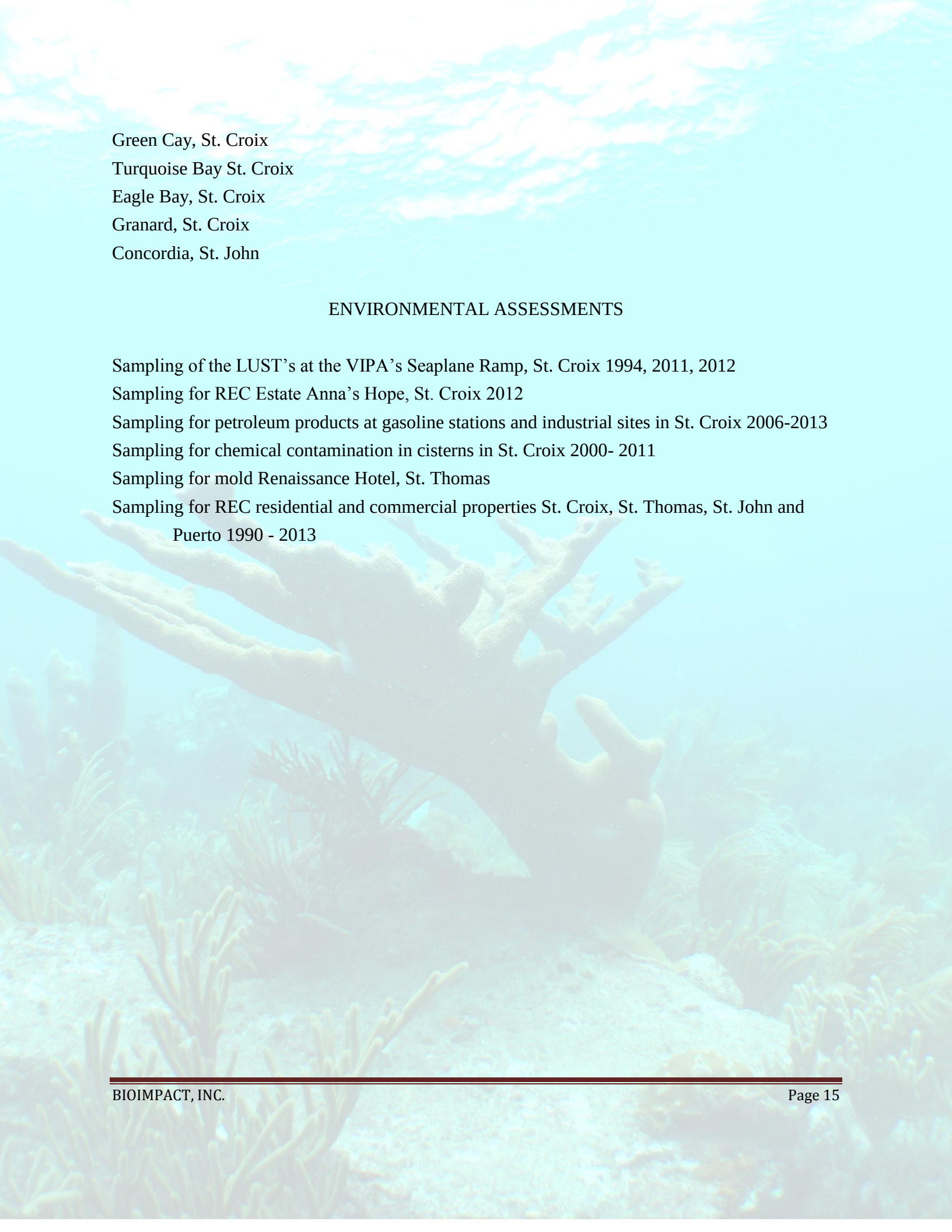
Turtle Run, St. Croix

Palm Shores, St. Croix

Baobab, St. Croix

Reflection Bay, St. Croix

Coakley Bay, St. Croix



Green Cay, St. Croix
Turquoise Bay St. Croix
Eagle Bay, St. Croix
Granard, St. Croix
Concordia, St. John

ENVIRONMENTAL ASSESSMENTS

Sampling of the LUST's at the VIPA's Seaplane Ramp, St. Croix 1994, 2011, 2012
Sampling for REC Estate Anna's Hope, St. Croix 2012
Sampling for petroleum products at gasoline stations and industrial sites in St. Croix 2006-2013
Sampling for chemical contamination in cisterns in St. Croix 2000- 2011
Sampling for mold Renaissance Hotel, St. Thomas
Sampling for REC residential and commercial properties St. Croix, St. Thomas, St. John and
Puerto 1990 - 2013



Cairone & Kaupp, Inc.

Landscape Architecture
Civil Engineering

COMPANY PROFILE

Cairone and Kaupp, Incorporated was founded in Atlantic City, NJ in 1979 under the guiding principle that landscape architects and civil engineers could synthesize their common professional goals and values in the interest of providing truly integrated site design solutions. This approach has resulted in an enduring collection of built works which presently spans 15 states and continues to serve a diverse list of public and private sector clients, including the Federal Government. Enabling our efforts is our staff, a group of professionals whose blend of experience, skill sets and interests all complement and serve our mission. Invigorated by client interaction and consultant collaboration, we approach all of our work with four core values.

Creativity



We create places that engage and inspire through the generation of unique design concepts and leveraging constraints into opportunities.

Value



We act sustainably with our environment and clients' resources.

Commitment



We listen, respond and perform in pursuit of building strong and lasting relationships.

Respect



We make a sincere effort to understand the client, environment, and needs of the user groups that our work will impact. Nothing is beneath consideration and response.

Leadership

More than three decades ago, Joe Cairone and Butch Kaupp combined their talents in the pursuit of designing projects that supported their natural context, as well as their clients' desires. What resulted from their cumulative efforts is enduring places and lasting relationships. The two are continually energized by the dynamic interplay that unfolds throughout each project. Throughout the years, the office has intentionally been maintained at a size that allows for regular interaction with all employees, clients and consultants.

Joseph R. Cairone, RLA, ASLA

With close to 40 years experience as a practitioner, Joe has always believed that landscape architects should be knowledgeable in all aspects of a project from concept to implementation. Thus, his involvement in the firm includes consistent client interaction, managing design objectives, and ensuring proper installation.

Walter J. Kaupp, P.E., LEED AP

A professional engineer, Butch Kaupp is primarily responsible for civil-site design and planning efforts. His efforts within the office involve coordinating the interdisciplinary interaction of all projects. Butch approaches each project in the same way - with the diligence to do what is most appropriate for site and client.

Services

- Feasibility Studies
- Site Programming & Site Planning
- Design Development
- Construction Documentation
- Construction Phase Services

Project Types

- Athletic Facility Planning & Design
- Campus Planning
- Cemetery Planning & Design
- Downtown/Urban Revitalization
- Green Infrastructure Solutions
- Neighborhood Development
- Park Planning & Design
- Playground Design
- Rooftop Gardens
- Region-specific Planting Design
- Urban Parks & Plazas
- Waterfront Parks & Promenades



Cairone & Kaupp, Inc.

Landscape Architecture
Civil Engineering

WALTER J. KAUPP

Principal

Walter J. Kaupp is a professional engineer and valued leader of the firm's interdisciplinary teams. He is directly responsible for the firm's site and urban planning, utility and storm water management, permitting, environmental analyses and engineering design services. He also coordinates with clients, other disciplines and regulatory and jurisdictional agencies.

Mr. Kaupp has more than 30 years of experience in the coordination of civil engineering projects from the pre-design site selection process through construction management and final project acceptance. His experience extends to projects of all sizes and complexities for an array of commercial, recreational, urban, institutional and residential clients. Prior to founding Cairone & Kaupp, Mr. Kaupp worked in the private sector. He was responsible for the design, development and coordination of large residential and commercial developments.

Education

Temple University
Bachelor of Science in Civil Engineering, 1977
Summa Cum Laude

Registrations / Licenses / Memberships

Professional Engineer
LEED AP BD+C
Member, American Society of Civil Engineers
National Society of Professional Engineers
Philadelphia Engineers Club
USGBC
DVGBC

Noteworthy Projects

McNeil Pharmaceuticals

Washington Crossing National Cemetery

Foxchase Cancer Center

Agusta Westland

Springside Chestnut Hill Academy



Cairone & Kaupp, Inc.

Landscape Architecture
Civil Engineering

JOSEPH R. CAIRONE

Principal

With close to 40 years of professional experience, Mr. Cairone believes that landscape architects should be knowledgeable in all aspects of a project, from conceptualization to implementation. Much of this was informed by his involvement in a family-owned construction company prior to receiving his education at both Rutgers University and the University of Pennsylvania.

In support of the firm's work, his responsibilities as a design principal have involved extensive travel along the Northeastern seaboard and Gulf Coasts associated with diverse project types. Informed by such travelling, Joe's approach to design lies in the respect of natural systems and native habitats and investigating methods to incorporate those characteristics into the built environment.

He is continually involved in the initial design phase throughout ensuing implementation of the development of all projects. Joe currently maintains licenses in 7 states.

Education

University of Pennsylvania, School of Design
MLA coursework, 1992-1995

Rutgers University
Bachelor of Science in Landscape Architecture, 1974

Registrations / Licenses / Memberships

Member, ASLA
CLARB Registered Landscape Architect: Delaware, Connecticut, Mississippi, Missouri, New Jersey, New York, Pennsylvania

Noteworthy Projects

Washington Crossing National Cemetery - Washington Crossing, PA

Cooper University Hospital Campus - Camden, NJ

Philadelphia Parks & Playgrounds

Revel Resort & Casino - Atlantic City, NJ

MGM / Foxwoods - Ledyard, CT



Cairone & Kaupp, Inc.

Landscape Architecture
Civil Engineering

WALTER J. KAUPP

Principal

Walter J. Kaupp is a professional engineer and valued leader of the firm's interdisciplinary teams. He is directly responsible for the firm's site and urban planning, utility and storm water management, permitting, environmental analyses and engineering design services. He also coordinates with clients, other disciplines and regulatory and jurisdictional agencies.

Mr. Kaupp has more than 30 years of experience in the coordination of civil engineering projects from the pre-design site selection process through construction management and final project acceptance. His experience extends to projects of all sizes and complexities for an array of commercial, recreational, urban, institutional and residential clients. Prior to founding Cairone & Kaupp, Mr. Kaupp worked in the private sector. He was responsible for the design, development and coordination of large residential and commercial developments.

Education

Temple University
Bachelor of Science in Civil Engineering, 1977
Summa Cum Laude

Registrations / Licenses / Memberships

Professional Engineer
LEED AP BD+C
Member, American Society of Civil Engineers
National Society of Professional Engineers
Philadelphia Engineers Club
USGBC
DVGBC

Noteworthy Projects

McNeil Pharmaceuticals

Washington Crossing National Cemetery

Foxchase Cancer Center

Agusta Westland

Springside Chestnut Hill Academy

