

INTRODUCTION TO COASTAL TECH



Coastal Tech is uniquely qualified to provide coastal engineering services. Since 1984, we have been committed to providing quality service and expertise in relation to the coastal zone. The broad background and experience of our staff allows us to provide the specialized services required to design, permit and construct public and private improvements within environmentally sensitive coastal areas.

Some of our specializations include:

- ➔ beach/dune restoration and nourishment,
- ➔ coastal and inland erosion control/shoreline protection structures,
- ➔ coastal geology,
- ➔ marinas/docking facilities/boat ramps,
- ➔ marine structure inspections and rehabilitation design,
- ➔ waterfront park development, and
- ➔ environmental permitting.

Beach/Dune Restoration and Nourishment: Coastal Tech has provided design and permitting services for numerous beach/dune restoration projects including St. George Island State Park, Navarre Beach, Town of Palm Beach, and the City of Venice. Designs are developed using a combination of cross shore and shoreline change numerical models, historical data comparison and engineering judgements. Mitigative artificial reefs have been designed, permitted and monitored to document colonization trends.

Coastal and Inland Erosion Control/Shoreline Protection Structures: Our coastal engineering staff has designed, permitted and provided construction administration services for a broad range of erosion control projects. Those projects include beach restoration, inlet sand transfer, dune nourishment, jetties, breakwaters, groins, seawalls and revetments.

Coastal Geology: Our state-of-the-art Coastal Geology and Sediments Lab, located in our Melbourne office, provides a full range of services including field investigations, laboratory analysis, and documentation of results. Typical projects entail splitting and logging of sediment cores, digital photography and color analysis, gradation analysis, compatibility analysis and determination of sediment composition.

Marinas/Docking Facilities: We have installed sedimentation traps to determine sediment origins; conducted current measurements to characterize currents inside proposed marina sites and adjacent waterways; employed empirical hydrodynamic models to evaluate the character of tidal flows and sedimentation and scouring potential; and performed coastal analysis to design wave attenuators. We have also provided design, permitting and construction phase services. Coastal Tech has also evaluated alternative design layouts, provided cost estimates, and investigated potential funding sources.

Marine Structure Inspections and Rehabilitation Design: Coastal Tech has extensive experience in above and below water inspections, evaluations of structural conditions, repair recommendations, assessments of load capabilities, detailed engineering design, permitting and repair/rebuild cost estimating. We have provided these services in conjunction with bridges, piers, launching facilities, bulkheads, seawalls, revetments, weirs, groins and marinas. We have a thorough understanding of the design and performance of previous repairs; marine structure design expertise; and inspection, diving and testing abilities.

Waterfront Park Development: In conjunction with waterfront park development, we have developed and implemented master plans; provided biological and habitat assessments; prepared funding applications; provided design, permitting and construction phase services for hiking and bike paths, pavilions, overwalks, boat and air boat ramps, docks, bulkheads, shoreline stabilization structures, and dune and beach nourishment.

Environmental Permitting: As our work is focused in the sensitive coastal zone, maintaining a professional working relationship with Local, Regional, State and Federal regulatory agencies has been integral in Coastal Tech's success. This relationship enables us to efficiently design and permit new projects, as well as, project improvements and rehabilitation.

Strategic Planning: For Coastal Zone Management Planning, Coastal Tech's basic approach includes the following major tasks :

- Public Outreach
- Severity of Erosion Analysis
- Risk Assessment
- Sand Source Investigations
- Alternative Conceptual Designs
- Storm Recovery Contingency Plan
- Long-term Assessment/Funding Strategies

We see this approach as a “nested hierarchy”; that is, these tasks are appropriate in planning for beach erosion control at the single community level. The same approach is applicable for larger projects and/or more than one project at a ‘multiple community’ or regional level. Such a consistent approach ensures that the final results best reflect the needs of each group from the community, through the region, to the State level.

Locations: Coastal Tech maintains offices in Vero Beach, Melbourne, and Sarasota, Florida and Austin, Texas. Each office has an engineering staff equipped to offer a myriad of expertise. All offices work closely together to ensure our clients receive the finest service in coastal engineering. For more information, contact an office in your area.

