

# Marine Park Improvements

## *A Red Bank Borough, NJ Project*

### **PROJECT SUMMARY**

**Artheon, Inc.** served as the lead engineering consultant for the Marine Park Improvements Project, a transformative waterfront revitalization initiative located along the Navesink River in the Borough of Red Bank, Monmouth County, New Jersey. The project reimagined one of the Borough's most prominent public spaces, creating a resilient, accessible, and inclusive community destination while addressing longstanding environmental and infrastructure challenges.

The comprehensive redevelopment included environmental remediation of historically contaminated soils, installation of stormwater check valves and drainage improvements to mitigate recurring tidal flooding, replacement and upgrade of aging water infrastructure, and creation of a completely inclusive playground designed to serve children of all abilities.

Additional improvements included construction of a large event lawn and bandshell, waterfront gathering spaces, decorative pergolas, interactive spray fountain, bocce courts, cornhole areas, hammock lounges, enhanced lighting and security systems, extensive landscaping, and public amenities that strengthen connections between residents and the Borough's waterfront.

The project transformed an underutilized and flood-prone property into a vibrant community asset that supports recreation, cultural events, environmental stewardship, and economic vitality. By integrating resiliency measures, universal accessibility, environmental restoration, and placemaking, Marine Park now serves as a model for waterfront park redevelopment throughout New Jersey.

### **INNOVATIVE, TRANSFORMATIVE OR UNIQUE METHODS**

The Marine Park Improvements Project required innovative solutions to overcome significant environmental, regulatory, accessibility, and resiliency challenges while maintaining the project vision of creating an inclusive waterfront destination.

One of the project's most significant achievements was the remediation of historic fill and contaminated soils discovered throughout the site. Extensive environmental investigation, testing, and coordination were required to safely remove contaminated materials and replace them with certified clean fill in accordance with NJDEP technical requirements. This effort transformed environmentally impaired land into a safe and sustainable public resource.

The project also addressed chronic flooding conditions that had affected the park since Superstorm Sandy. Artheon's design incorporated stormwater check valves and drainage system improvements specifically engineered to prevent tidal backflow from the Navesink River. These resiliency enhancements help protect public investments and improve the park's long-term functionality during future storm events and rising tidal conditions.

A centerpiece of the project is the Completely Inclusive Playground, designed to provide equitable recreational opportunities for children of all physical, cognitive, and sensory abilities. Designing the



playground required precise grading and site engineering to comply with New Jersey Department of Community Affairs regulations while preserving mature trees and accommodating the site's challenging topography. The result is a welcoming and accessible environment that promotes inclusion, social interaction, and community engagement.

The project further demonstrates innovation through the integration of recreation, environmental restoration, flood resilience, and community gathering spaces into a single unified waterfront destination. Every element—from the interactive spray fountain and event lawn to the marina promenade and landscaped open spaces—was designed to create a cohesive experience that strengthens community identity and enhances quality of life.

## **COMPLEXITY**

The Marine Park Improvements Project presented numerous technical, environmental, and regulatory complexities that required multidisciplinary coordination and creative engineering solutions.

Key project challenges included:

- **Environmental Remediation Requirements** – Historical fill materials and contaminated soils required extensive investigation, environmental planning, permitting, removal, and replacement in compliance with NJDEP site remediation regulations.
- **Waterfront Regulatory Compliance** – The project is located adjacent to the Navesink River within regulated coastal and flood hazard areas, requiring coordination with multiple regulatory agencies and compliance with CAFRA, Flood Hazard Area, Waterfront Development, and Army Corps permitting requirements.
- **Flood Resiliency Design** – The site had experienced recurring tidal flooding and impacts from Superstorm Sandy. Engineering solutions were required to reduce vulnerability while preserving public access and maintaining the character of the waterfront park.
- **Inclusive Playground Design** – The completely inclusive playground required careful grading and accessibility planning to satisfy stringent regulatory requirements while working around existing site constraints and preserving mature trees.
- **Utility Infrastructure Upgrades** – Replacement of aging water infrastructure and integration of new drainage systems had to be coordinated with park improvements, construction sequencing, and future maintenance requirements.
- **Active Community Stakeholder Environment** – Marine Park is a highly visible public space serving residents, visitors, boaters, and local businesses. The project required balancing community expectations, recreational needs, environmental objectives, and long-term resiliency goals.
- **Comprehensive Site Transformation** – The project combined environmental remediation, waterfront improvements, accessibility enhancements, recreational facilities, landscaping, lighting, security systems, public gathering areas, and utility upgrades within a single integrated construction effort.

Through careful planning, innovative engineering, and extensive stakeholder coordination, Artheon successfully delivered a project that not only resolved longstanding site challenges but created a premier waterfront destination that will serve the Borough of Red Bank for generations to come.

