



PROJECT DESCRIPTION

This approximately 85 acre project, consisting of piers, upland and water area, will stretch along 1.3 miles of Brooklyn waterfront and will include Piers 1-6. Included in the project plans are water recreation areas for kayaking and a marina. Shelter from wave agitation caused by both wind waves and boat wakes is to be obtained through the use of a combination of wave fences and floating breakwaters.

DESIGN APPROACH

The Coldwater team was retained by DMJM-Harris in the design phase of the project to provide the following services with respect to the kayaking area and marina:

- collect data, including vessel traffic, bathymetry, geometry and climate data;
- collect field measurements of ship and wind waves at the site;
- develop design criteria through the use of predictive models in order to estimate operating wake and wave conditions within the facility as well as ship-induced incident waves at the facility limits;
- perform modeling of the facility to estimate wave agitation using Coldwater's Hyper numerical modeling software;
- analyze and interpret the model results to evaluate each structural arrangement, and;
- develop and refine the breakwater and fence layout in the facility.

The Hyper model takes into account the following processes:

- wave refraction (transformation of the waves over the uneven lake bed);
- wave diffraction (scattering of waves);
- reflection (the bouncing of waves off reflective surfaces such as marina walls and bulkheads), and;
- the transmission (and partial reflection) of waves through floating breakwaters.

CLIENT

DMJM-Harris / AECOM

LOCATION

Brooklyn, NY

DATE

2005-2007