

## ***Mooring System Analysis***

We have several tools for analysis of mooring systems:

OPTIMOOR by Tension Technologies International has many features for typical static ship berth mooring systems, as well as some anchor mooring features and dynamic analysis capabilities.

OrcaFlex solves very complex mooring system dynamic problems with multiple mooring or anchor lines.

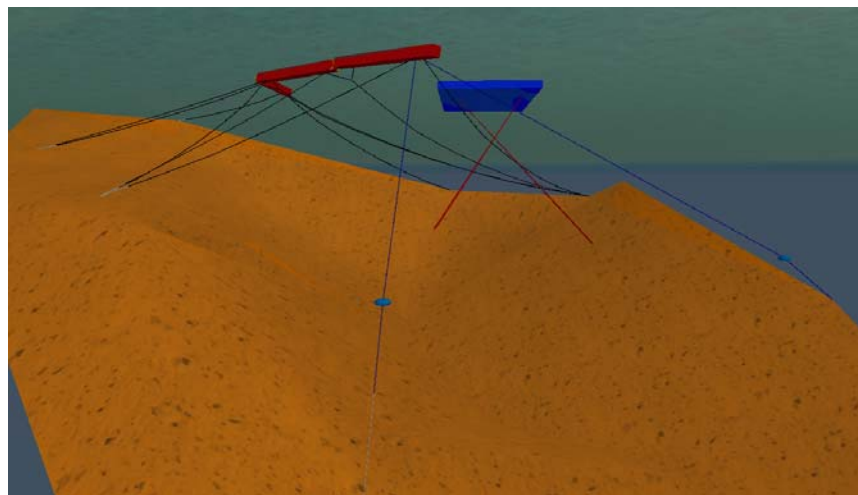
Static 2-D mooring configurations can be studied quickly using our in house catenary solvers. This is useful for preliminary design.

**Project:**  
Mooring System for a Floating  
Breakwater

**Client:**  
Matrix Engineering, Inc.

**Owner:**  
Idaho Department of Parks and  
Recreation

**Scope:** Glostén designed a breakwater mooring system suitable for 65-mph winds, 5-ft seas, and with 180-ft seasonal variation in pool level. We also performed a dynamic analysis using the OrcaFlex software.



*Mooring System Configuration for a Floating Breakwater*

**Project Description:** This project involved designing a mooring system for a floating breakwater on the Dworshak Reservoir at Orofino, Idaho. The final configuration was an L-shape wave attenuator (shown below in red), with a 12-point mooring. The marina is shown in blue, with two mooring lines that posed potential interferences. Mooring legs incorporated some heavy chain and clump weight elements to accommodate the large pool elevation changes.

**Project:**

Mooring System for Three Derrick Barges

**Client:**

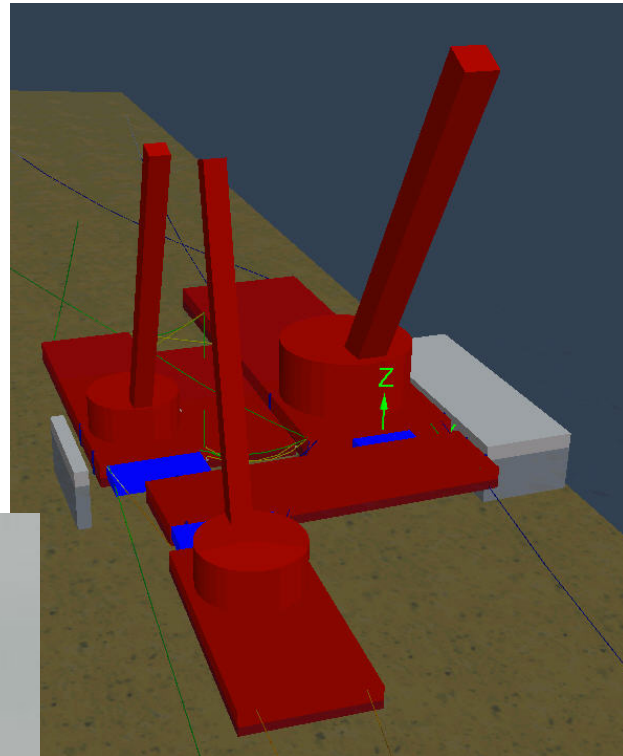
Kiewitt/General JV

**Owner:**

Washington State Department of Transportation

**Scope:** Initially a peer review of the contractor's mooring plan, the scope was extended to look at a matrix of wind and current conditions and provide guidance on safe working limits.

*The OrcaFlex model contained three derrick barges, the transport barge, four spacer barges, numerous fender elements, and eighteen anchor or mooring line elements.*



*The two transition spans were installed exactly as planned, and the bridge was reopened to traffic ahead of schedule. (Photo by the Washington State Department of Transportation.)*

**Project Description:** The project involved analysis of a mooring system needed for three derrick barges used to lift the 800 ton transition spans for the new Hood Canal Floating Bridge. Glosten's analysis was carried out using the OrcaFlex software.