



**US Army Corps
of Engineers®**
Engineer Research and
Development Center

Product

GenCade Model, Version 1

Technology

GenCade is a newly developed numerical model which combines the engineering power of GENESIS and the regional processes capability of the Cascade model. GenCade calculates shoreline change, wave-induced longshore sand transport, and morphology change at inlets on a local to regional scale and can be applied as a planning or engineering tool. GenCade is operated within the Surface-water Modeling System interface, bringing functionality of a georeferenced environment together with accessibility to other U.S. Army Corps of Engineers numerical models. GenCade is being developed by the Coastal Inlets Research Program and the Regional Sediment Management Program.



GenCade application at Pt. Lookout, NY

Problem

Navigation channel maintenance dredging is often the source for beach nourishment material. Similarly, sediment moving alongshore will partially accumulate and partially bypass inlets. GenCade accounts for the inlet-beach interaction to allow representation of large stretches of coast, multiple inlets, and long time frames (typically 50 years) in one modeling grid. Additionally, GenCade allows for a regional contour which can be used for studies with a curved shoreline. The user can also enter engineering activities such as jetties, seawalls, groins, inlet dredging, and beach fills which are visually represented on the GenCade grid and included in the model calculations.

Expected Cost To Implement

GenCade is available at no cost to USACE employees.

Benefits/Savings

GENESIS is one of the most popular major coastal engineering software packages in the world, with order of 1,000 users. It is expected that GenCade will have similar or greater popularity.

Status

A beta version is available for testing and, GenCade, Version 1 will be available mid-2011.

ERDC POC

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Distribution Sources

A beta version of GenCade is available to USACE districts and other users. GenCade, Version 1 will be available mid-2011. GenCade setup, model control, and execution are operated within a GenCade SMS interface. Case studies have been conducted at Long Island, NY; Onslow Bay, NC; and Matagorda, TX.

Available Documentation

Documentation is under development. A GenCade User's Guide is in progress (<http://cirpwiki.info/wiki/GenCade>) and will be completed by November 2010. A Technical Report describing GenCade will be available in summer 2011.

Available Training

Periodic technology-transfer workshops and webinars will be held by the ERDC staff. Refer to the CIRP webpage (<http://cirp.usace.army.mil>) for training announcements.

Available Support

Support is available by contacting the ERDC POC or commercial support from Aquaveo at support@aquaveo.com.