Future Capabilities of GenCade

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FY13 Activities

CMS-Wave

Wind input, wave generation & growth, wave transformation, diffraction, reflection, run-up, setup, overtopping, structures, surface roller
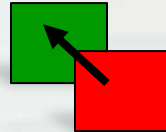
⟹ **GenCade**

Option for GenCade to accept forcing from an external wave model
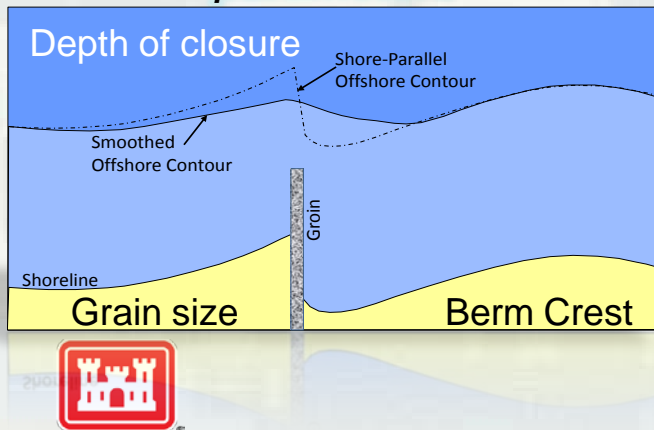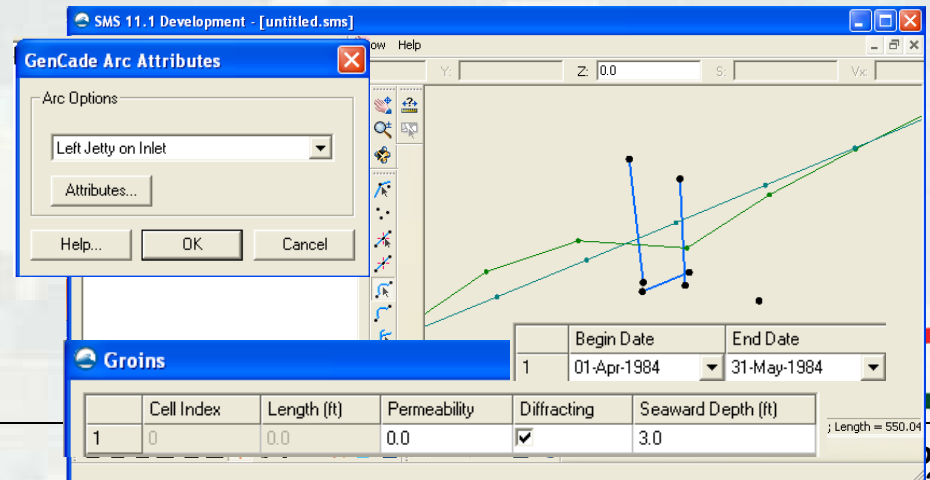
GenCade ⟹ *SBAS Arc10*

GenCade output used as input to create an SBAS Calculated Sediment Budget

Variable alongshore parameters

Depth of closure

Shore-Parallel Offshore Contour

Smoothed Offshore Contour

Groin

Shoreline

Grain size   Berm Crest

Variable structures and failure

SMS 11.1 Development - [untitled.sms]

GenCade Arc Attributes

Arc Options

Left Jetty on Inlet

Attributes...

Help...   OK   Cancel

	Begin Date	End Date
1	01-Apr-1984	31-May-1984

Groins

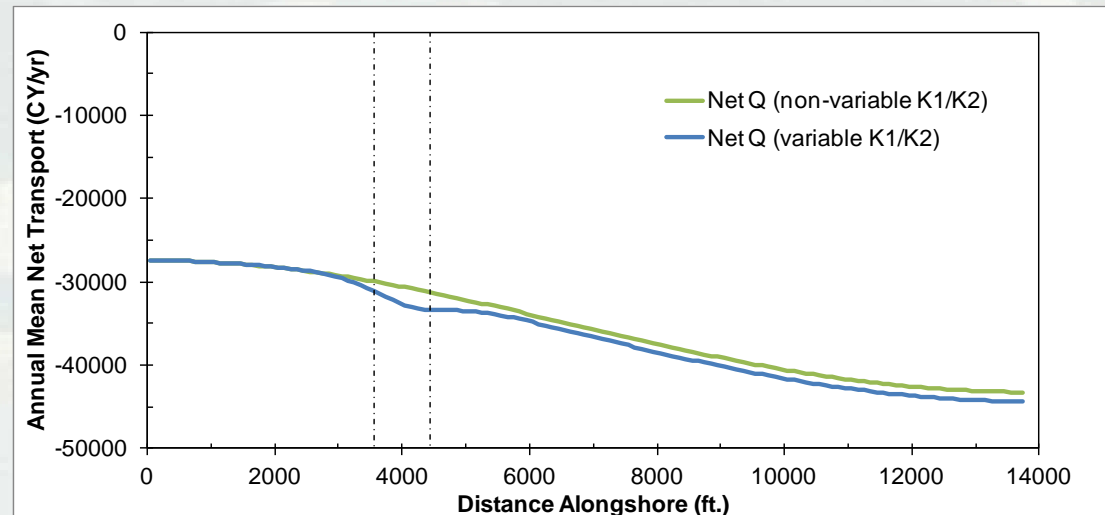|	Cell Index	Length (ft)	Permeability	Diffracting	Seaward Depth (ft)
1	0	0.0	0.0	☑	3.0

; Length = 550.04

FY13 Documentation

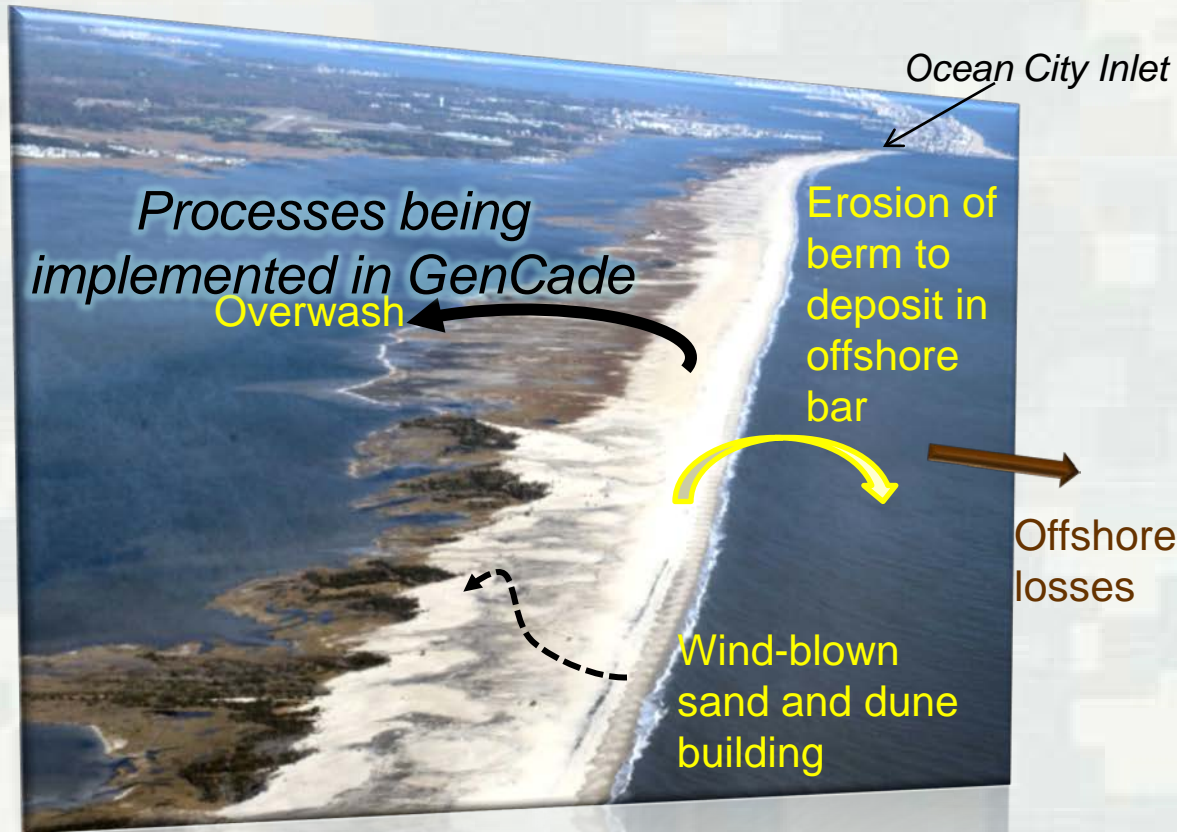**Wiki-TN: Standard Methodology for Calibration and Validation**

- *Statistical toolkit*

- *Recommended statistics for acceptable Cal/Val*

- *Standard, unified approach*

GenCade V2 Release

- Variable parameters and structures

- Code enhancement

- Output files for SBAS

- Updated documentation for V2 (wiki-TN or TR)
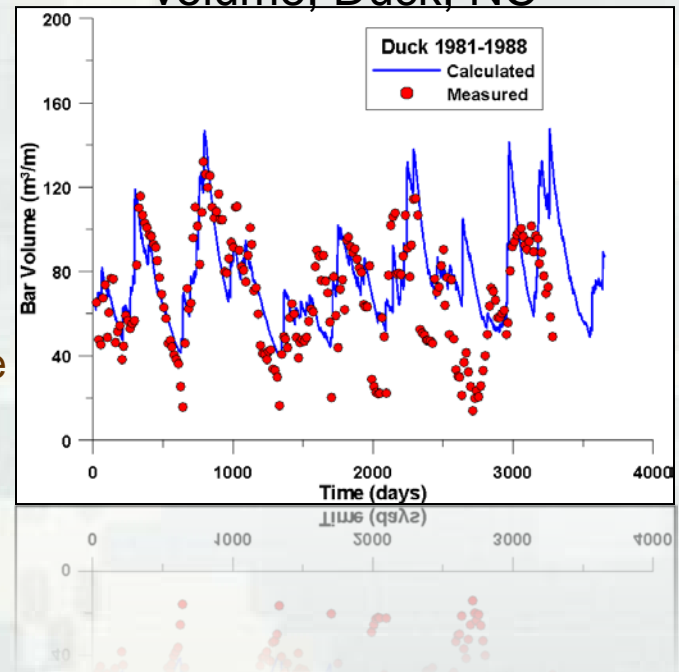
FY13 & Beyond – Cross-shore Transport

Ocean City Inlet

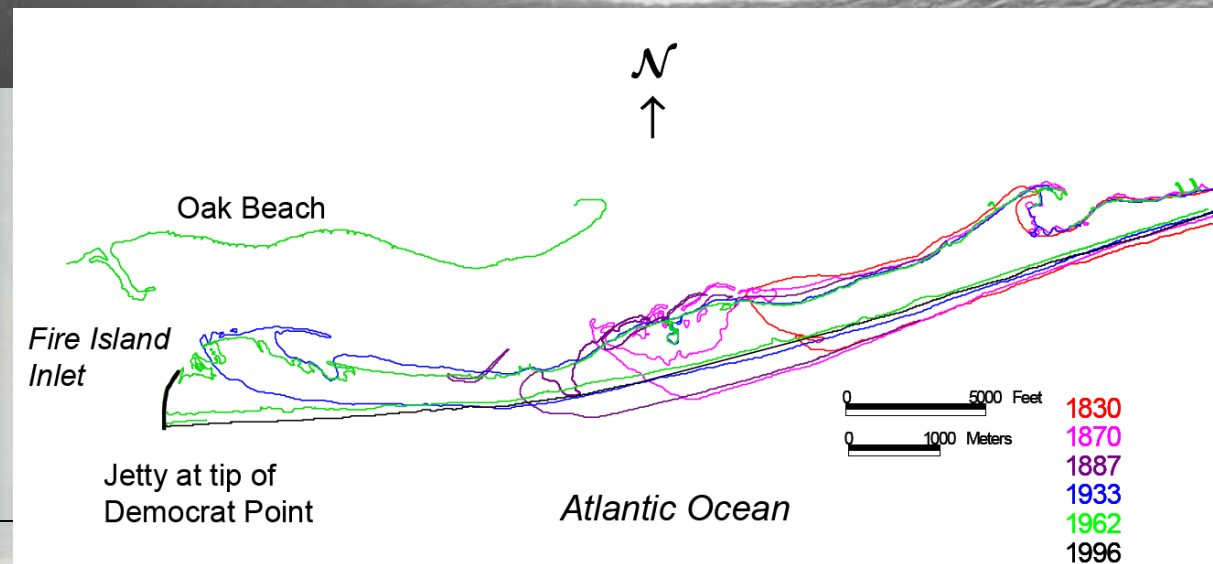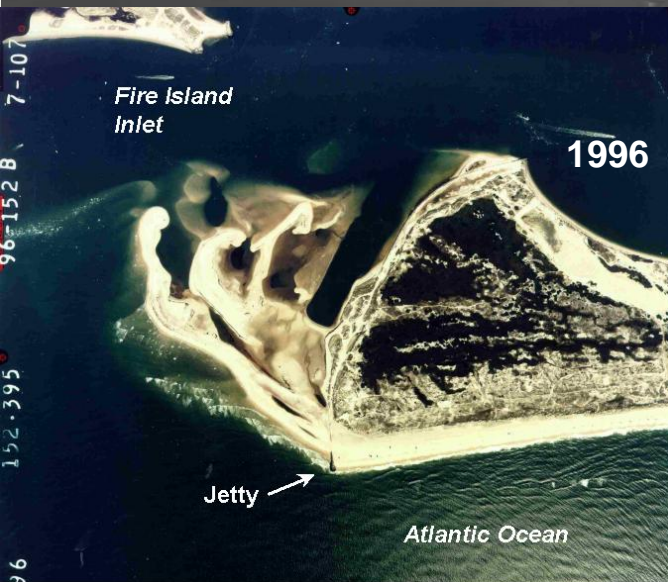Example comparison between measured and calculated bar volume, Duck, NC

Processes being implemented in GenCade

Overwash

Erosion of berm to deposit in offshore bar

Offshore losses

Wind-blown sand and dune building

Assateague Island, MD

ERDC

Innovative solutions for a safer, better world

FY13 & Beyond – Spit Growth

Fire Island Inlet

1941

GenCade Development

Atlantic Ocean

Jetty

from Kraus & Seabergh 2002

Fire Island Inlet

1996

Jetty

Atlantic Ocean

N

Oak Beach

Fire Island Inlet

Jetty at tip of Democrat Point

Atlantic Ocean

0   5000 Feet
0   1000 Meters

1830
1870
1887
1933
1962
1996

FY13 & Beyond - Inlet and Barrier Migration

1926   1942   1962