



US Army Corps of Engineers

# Application: Coastal Structures Condition Assessment and Standardized Reporting Application (CoSCA)

- Description
  - ESRI ArcMap Toolbar and backend enterprise database(s)
  - Integrates data from various sources to aid inspections and calculate a condition index
  - Standardizes coastal structure condition assessments from inspection and survey data
  - *Special Function:*
    - 3D wire-frame data model is used as baseline for volume calculations
- What will it help us do?
  - Assessed condition is no longer subjective. Index is **generated** from calculations

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# Data Input Requirements

• W

STRUCTURAL RATING FOR RUBBLE BREAKWATERS AND JETTIES Page \_\_\_\_ of \_\_\_\_

PROJECT NAME: \_\_\_\_\_ Reach: \_\_\_\_\_

STRUCTURE NAME: \_\_\_\_\_ Sta. From \_\_\_\_\_ To \_\_\_\_\_

INSPECTION TEAM: \_\_\_\_\_ DATE: \_\_\_\_\_ TIME: \_\_\_\_\_

NAME: \_\_\_\_\_ OFFICE SYMBOL: \_\_\_\_\_ PHONE: \_\_\_\_\_ Begin \_\_\_\_\_ End \_\_\_\_\_

WAVE HEIGHT (ft) \_\_\_\_\_ WAVE ACTION ON STRUCTURE: \_\_\_\_\_ TIDE LEVEL: \_\_\_\_\_ WEATHER DAY OF INSPECTION: \_\_\_\_\_

DAY OF INSPECTION: \_\_\_\_\_ A. Overtopping A. High B. Medium \_\_\_\_\_

\_\_\_\_\_ B. Non-overtopping C. Low \_\_\_\_\_ B. Rain \_\_\_\_\_

\_\_\_\_\_ Stage: \_\_\_\_\_ feet \_\_\_\_\_ C. Fog \_\_\_\_\_

\_\_\_\_\_ D. Storming \_\_\_\_\_

TYPE OF INSPECTION: WALKING BOATING OTHER \_\_\_\_\_ (CIRCLE)

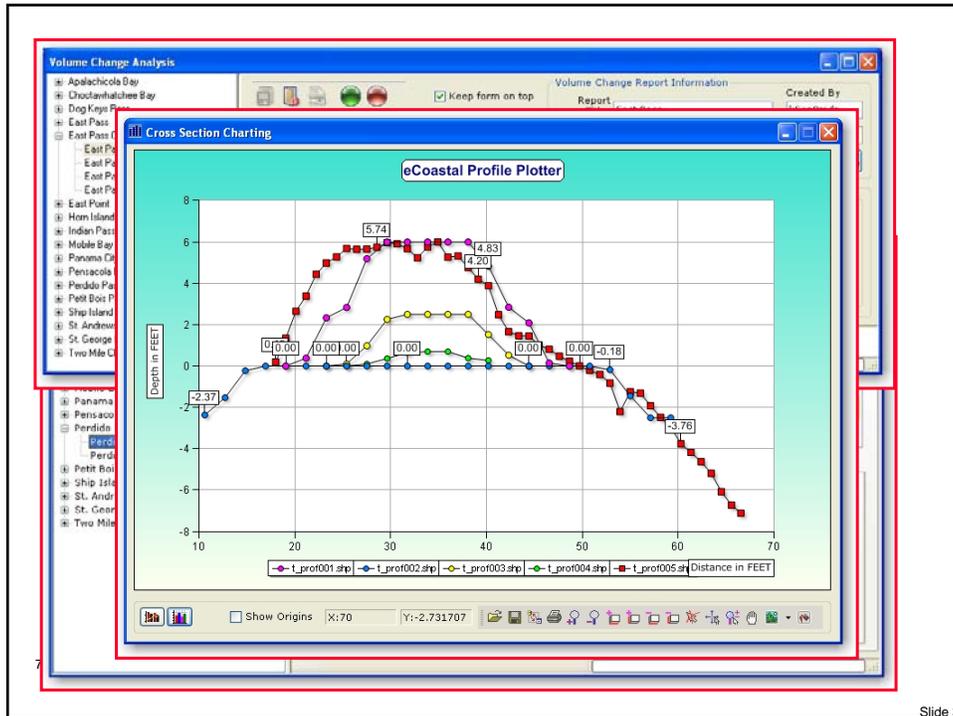
RATING CATEGORIES: Rate all items (Circle applicable lettered items)	CREST / CAP CR			SEASIDE (or HEAD) SE			CHANNEL / HARBOR SIDE CH		
	Rating 1-6	Damage Length	Comment Numbers	Rating 1-6	Damage Length	Comment Numbers	Rating 1-6	Damage Length	Comment Numbers
Breach: (A) Displaced Cap/Armor (B) Settling Cap/Armor									
Core (or Underlayer) Exposure/Loss									
Armor Loss: (A) Displaced (B) Settling (C) Bridging									
Loss of Armor Contact/ Armor Interlock									
Armor Quality Defects:									

3D Wire-frame

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Inspection Form

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## Application User

- Who are the application users? How might they use the tool?
  - Where are they in the organization Division/branch?
    - Operations Division/Navigation Branch/Area Office (inspections)
    - Engineering Division/Structures Branch (analysis)
  - What level are they (Tech, Eng, Mgr)?
    - Technicians can provide the data entry for inspections (HAMMER)
    - Engineers can work through the data analysis to determine damage
    - Managers can view calculated results in posted condition reports and use information for budgeting
  - What skills or training is required?
    - Basic GIS skills
    - Self-paced training will be provided

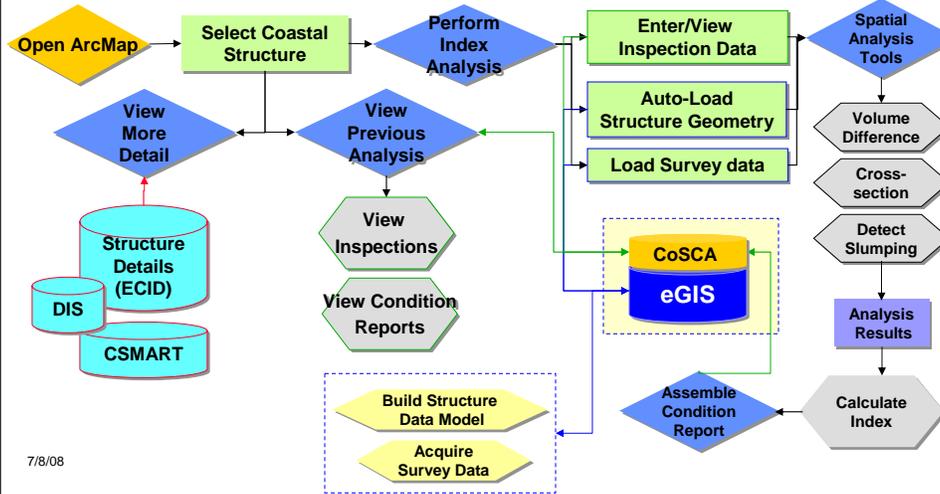
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## Work Flow



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## Tech Support Plan

- CoSCA is part of the eCoastal program.
  - eCoastal provides yearly training on available tools & applications
  - eCoastal website (<http://eCoastal.usace.army.mil>) provides web presence for distribution of tools, documentation, and user feedback.

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# Biggest Challenges

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- What's the best way to package and deploy the tool?
  - Distribute application via download or DVD to the District Commander, Chief of Ops, Coastal Engineer, or District eGIS organization
- What are the ERDC challenges in moving ahead?
  - Will each District support an enterprise architecture or must the application come with stand-alone capability...adds significant cost and does not support USACE eGIS goals
- What are the district challenges in the use of this application?
  - SDS-compliant eGIS database with populated feature classes
    - Wire-frame data model of each coastal structure needs to be created to use analysis portions of CoSCA.
    - Survey data
  - Access to NCMP data
  - Architecture to support web services
  - Inspections needs to be entered into the CoSCA/eGIS database.

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