



# CIRP: Coastal Navigation Portfolio Management

**Problem** The US Army Corps of Engineers (USACE) has the federal mission of maintaining the national waterborne transportation infrastructure and therefore invests hundreds of millions of dollars annually towards operation and maintenance (O&M) of federal channels, ports, and waterways. Within deep-draft coastal projects, this work consists primarily of channel dredging, but also includes repair and restoration of coastal jetty and breakwater structures. Limited funding in recent years has forced project managers to make difficult decisions concerning which projects are to be funded each year and which are to be considered lower priority and passed over until later. Examiners from the Office of Management and Budget (OMB) have conveyed to USACE personnel that overall funding levels will not increase until improved justification for the investments already made each year maintaining the many hundreds of channels and coastal structures can be provided.

**Objectives** The objective of the Coastal Navigation Portfolio Management work unit is to provide decision-support tools to all levels of USACE management concerning O&M funding of deep-draft coastal channels, jetties, and breakwaters. The overarching vision is to rationally and consistently prioritize O&M disbursement such that benefits to the nation are maximized, and funding decisions can be documented and defended.

**Products** Two decision-support software packages, the Channel Prioritization Tool (CPT) and the Coastal Structures Management, Analysis, and Ranking Tool (CSMART) are being developed for use by Corps management (HQ, Division, and District). These tools feature user-friendly software interfaces and output visualizations using Google Earth™. Development of both CPT and CSMART includes feedback and guidance from OMB, USACE-HQ, and District personnel.

The CPT uses the Corps-only tonnage database from by the Waterborne Commerce Statistics Center (WCSC) to analyze the extent to which maintained channel depths are utilized by commercial shipping. In addition to commercial tonnage, draft, commodity, and movement type, the CPT also provides cargo value estimates based on a separate dataset from U.S. Customs. Long-term development includes integration with channel condition reporting technologies to identify shoaling locations that pose the greatest risk to commercial navigation.

The CSMART prioritizes coastal structures for O&M funding using data concerning major commodities of the respective inlets (including commercial fishing), channel safety, and several other indicators of coastal structure significance. Data pertaining to the selected criteria are analyzed to produce customized rankings of coastal structures according to user-specified weightings.

Development of both the CPT and CSMART packages is proceeding in conjunction with several other software tools designed to support the USACE Navigation mission. These include the Enterprise Coastal Inventory Database (ECID), the Coastal Structures Condition Assessment (CoSCA) tool, and the Lock Operations and Management Application (LOMA) software tool utilizing the Automatic Identification System (AIS) data provided by the US Coast Guard.

**Milestones**

10-01	JCR Special Issue Journal Article on CPT and CSMART	Oct 09
10-02	Software Upgrade - CPT Inland	Oct 09
10-03	ERDC R&D Conference - CPT	Nov 09
10-04	CERB Demo CPT Web-based Platform	Nov 09
10-05	11th Annual CIRP Technology Transfer Workshop	Dec 09
10-06	CHETN: Channel Prioritization Tool (CPT) Methodology; wiki-page	Dec 09
10-07	CHETN: CSMART Conceptual Framework and Data Sources	Jan 10
10-08	JP on CSMART and/or CPT	Feb 10
10-09	CIRP Mini-Tech-Transfer Workshop (during CWG workshop)	Jun 10
10-10	CPT_v1.0 (web-based, full-functionality, accessible to USACE personnel, shoaling calculators); wiki-page	Aug 10

**Funding**    **FY10:** \$600K.

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