Channel Prioritization Tool

CPT Overview to AAPA

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Channel Prioritization Tool (CPT)

• What does CPT do?
  • Deep-draft commerce analysis
    - See tonnage, $-value, and commodities transiting at each foot of maintained channel depth
  • Portfolio prioritization
    - Rank portfolio of projects for O&M funding based on current channel conditions and depth-utilization by industry
  • Economic justification and decision-support
    - Quantify the $-value of commerce directly supported by USACE maintenance dredging investments
  • Project visualization
    - Google Earth display of the network of maintained channels, with relative maintenance need shown
Channel Prioritization Tool (CPT)

- CPT responds to requests from OMB for objective, consistent performance-based budgeting for Navigation O&M (dredging).

- The case must be made for:
  - economic benefits derived from deep-draft navigation channels
  - economic consequences imposed if dredging not conducted
Channel Prioritization Tool (CPT)

• CPT accesses the dock-level, Corps-use-only tonnage database from IWR’s Waterborne Commerce Statistics Center to analyze extent to which commercial traffic utilizes maintained channel depths.

• Commodity codes are cross-referenced with Dept. of Commerce import/export figures to obtain $-value estimates for the cargo transiting at each 1-ft increment of maintained depth.

• Navigation channels are ranked in terms of tons and $-value of cargo transiting at depths that experience shoaling.
A typical USACE Navigation project will contain many miles of maintained channels.

Projects are currently prioritized for O&M funding based upon total project tonnage.

Current approach does not systematically consider relevant factors such as cargo value, depth of transit, and channel condition.
Portfolio management for USACE navigation channels should account for both physical condition and depth utilization in prioritizing projects for O&M funding.

By focusing on the cargo at the marginal, shoal-vulnerable depths, CPT provides a more complete indication of the significance of maintenance dredging.
Channel Prioritization Tool (CPT)

- User defines reaches through Google Earth interface.
- Docks are automatically linked using nearest-neighbor search algorithm.
Channel Prioritization Tool (CPT)
Traffic-type filter enabled, showing mostly foreign tonnage.
As with tonnage, traffic-type filter shows $-value dominated by foreign tonnage.
Key point: historical tonnage records are combined with anticipated shoaling rates to determine the relative importance of dredging work packages.
Google Earth™ writer provides useful visualization feature for showing relative significance of maintenance dredging jobs.
CPT Components

• Commerce data:
  - WCSC dock-level tonnage database
  - WCSC docks database
  - US Customs $-value database

• Reach definitions:
  - Google Earth paths (.kml files)
  - Port entrance coordinates
  - Current channel conditions

• Application:
  - CPT Validator and Builder
  - CPT Executable
  - System files
CPT Components

• Commerce data can be left alone

• Reach definitions
  - Google Earth paths will need to be revised to fit with local reach designations (name, extent, etc.)
  
  - Port entrance coordinates reside in an Excel spreadsheet and may require updating if the associated .kml file is changed

  - Current channel limiting depths are kept in a spreadsheet and can be changed without rebuilding the database
CPT Components

• CPT Validator:
  - once any changes to .kml files or spreadsheets have been made, the validator checks to make sure all files are in the correct folders and that they contain the necessary information.

• CPT Builder:
  - The builder assembles all of the various files into one single database to be used when running CPT

• CPT Executable:
  - user can select projects of interest and define custom ranking criteria
Questions?

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