

MAINTENANCE DREDGING IN THE NEW YORK DISTRICT

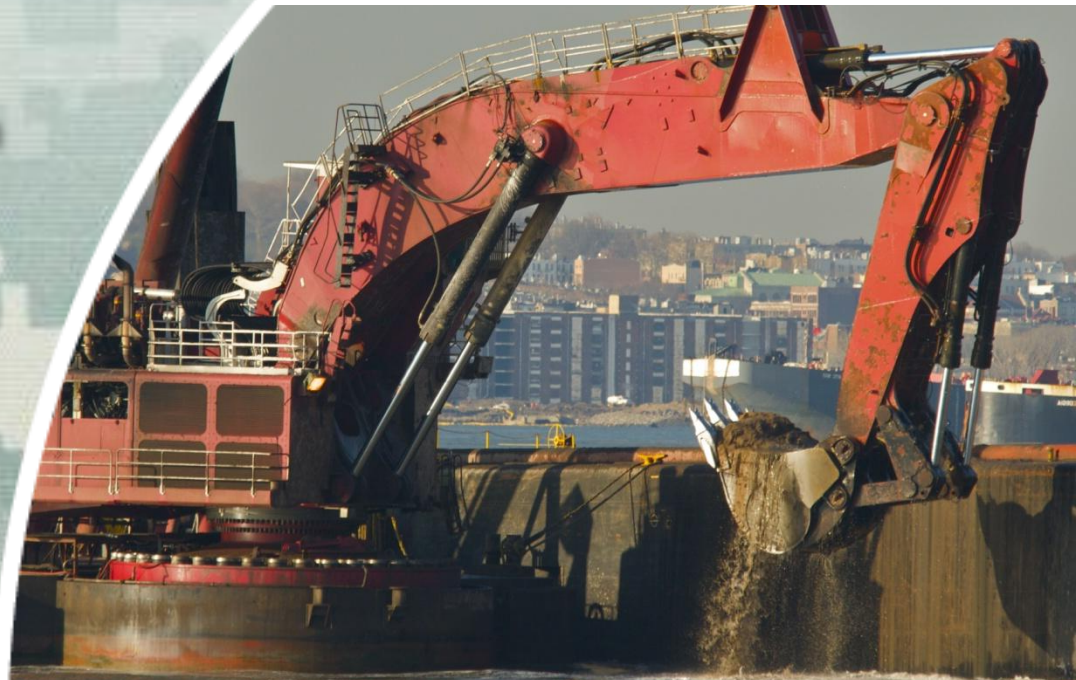
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US Army Corps of Engineers
BUILDING STRONG



Overview

MAINTENANCE DREDGING PROJECTS

- Deep Draft Channels
- Shallow Draft Channels
- Coastal Inlets



DEEP DRAFT CHANNELS



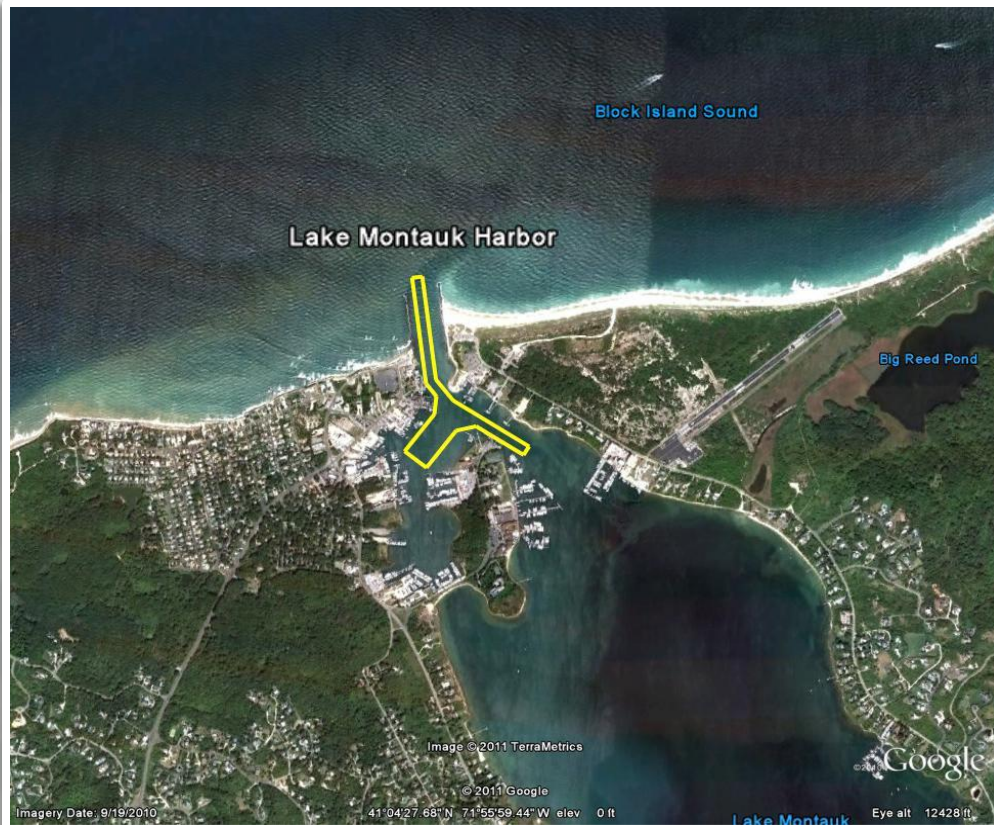
TYPICAL DEEP DRAFT PROJECTS	NY & NJ Channels, New York Harbor, Hudson River
CONTRACT DEPTH	20 ft – 50 ft
QUANTITY TO BE DREDGED	60K – 80K
TYPE OF DREDGED MATERIAL	Silt, Clay & Sand
AVERAGE COST PER CUBIC YARD	\$10 – \$100
EQUIPMENT	Hopper / Mechanical
PLACEMENT SITE	HARS / Upland
DREDGING FREQUENCY	1 – 5 years
DREDGING DURATION	2 – 4 months
ENVIRONMENTAL NO WORK WINDOWS	All Year

Environmental No Work Windows

Winter Flounder [NMFS, USFWS, NJDEP, NYSDEC]	1 Jan - 30 June
Nesting birds (herons, egrets, Per. Falcons) [NYSDEC]	1 March - 31 Jul
Piping Plovers & Terns [NYSDEC, USFWS]	1 April - 31 Aug
Blue Crabs [NMFS, NJDEP]	15 Nov - 15 Mar
Overwintering Winter Flounder and Striped Bass [NYSDEC]; Winter Flounder [NJDEP]	15 Nov - 31 May



SHALLOW DRAFT CHANNELS



TYPICAL SHALLOW DRAFT PROJECTS	Lake Montauk Harbor, Long Island Intracoastal Waterway, Shrewsbury River
CONTRACT DEPTH	6 ft – 14 ft
QUANTITY TO BE DREDGED	3K – 50K CY
TYPE OF DREDGED MATERIAL	Sand
AVERAGE COST PER CUBIC YARD	\$10 – \$20
EQUIPMENT	Pipeline
PLACEMENT SITE	Beach / Upland
DREDGING FREQUENCY	5 – 10 years
DREDGING DURATION	1.5 – 3 months
ENVIRONMENTAL NO WORK WINDOWS	1 Jan – 30 Nov

Environmental No Work Windows

Winter Flounder [NMFS, USFWS, NJDEP, NYSDEC]	1 Jan - 30 June
Beach placement - birds [NJDEP]; birds (herons, egrets, Per. Falcons) [NYSDEC]	1 March - 31 Aug
Piping Plovers & Terns [NYSDEC, USFWS]	1 April - 31 Aug
Amaranth [USFWS]	1 May - 31 Oct
Spawning of Shellfish and Finfish [NYSDEC]	1 June - 30 Sept
Turtles [NMFS]	15 June - 30 Nov



COASTAL INLETS



TYPICAL INLET PROJECTS	Fire Island, East Rockaway, Moriches, Jones, Shinnecock
CONTRACT DEPTH	14 ft – 20 ft
QUANTITY TO BE DREDGED	150K – 2,000K CY
TYPE OF DREDGED MATERIAL	Sand
AVERAGE COST PER CUBIC YARD	\$12 – \$30
EQUIPMENT	Hopper / Pipeline
PLACEMENT SITE	Beach
DREDGING FREQUENCY	1 – 5 years
DREDGING DURATION	3 – 6 months
ENVIRONMENTAL NO WORK WINDOWS	1 Jan – 30 Nov

Environmental No Work Windows

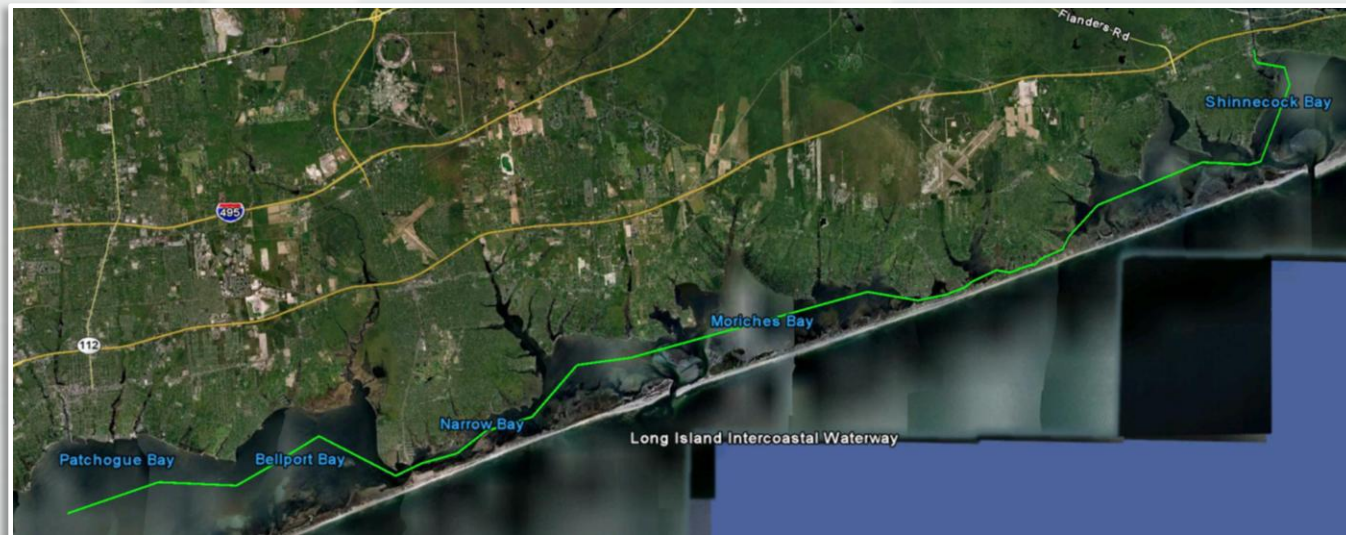
Winter Flounder [NMFS, USFWS, NJDEP, NYSDEC]	1 Jan - 30 June
Piping Plovers & Terns [USFWS]	1 Apr - 31 Aug
Sea Beach Amaranth [USFWS]	1 Apr – 1Nov
Spawning of Shellfish and Finfish [NYSDEC]	1 Jun - 30 Sept
Turtles [NMFS]	15 Jun - 30 Nov



LONG ISLAND INTRACOASTAL WATERWAY

- Long Island Intracoastal Waterway, New York
 - ▶ Environmental No-Work Windows from 15 January – 30 September.
 - ▶ US Coast Guard concerns:
 - Reported 16+ vessel groundings over Memorial Day weekend 2009
 - Difficulties marking a safe channel
 - Inability to perform search and rescue
 - ▶ WQC permitted only dredging of critical area (basic work) from 15 May – 25 June 2010 and option work after 30 September.
 - ▶ As a result, 2 separate costs for M/D incurred due to 2 separate work periods. \$645,000 basic work M/D and additional \$10,000 option work M/D.
 - ▶ 2 separate work periods created twice the periods of disturbance.

**2 PERIODS OF DISTURBANCE, COMPROMISED
NAVIGATIONAL SAFETY & INCREASED COSTS FOR DREDGING**



FIRE ISLAND INLET

■ Fire Island Inlet to Jones Inlet

- ▶ Environmental No-Work Windows from 15 January – 30 September.
- ▶ US Coast Guard Concerns:
 - Almost no navigable pathway
 - Inability to perform SAR
- ▶ Need to dredge over 1M CY of sand from the channel and an additional 750k CY in the depo.
- ▶ Need 6 months to perform dredging of 1M CY of sand from just the channel with placement at Gilgo Beach.
- ▶ Window allows for only 3 months of dredging.
- ▶ The inlet is a wide, high energy environment—2,000 ft in width, strong currents with average speed of 2.4 knots, maximum of 3.5 knots.
- ▶ Reference Crawford and Carey (1985)—"spawning winter flounder prefer small, narrow estuaries where water flow is restricted thereby retaining the larvae in a suitable nursery."

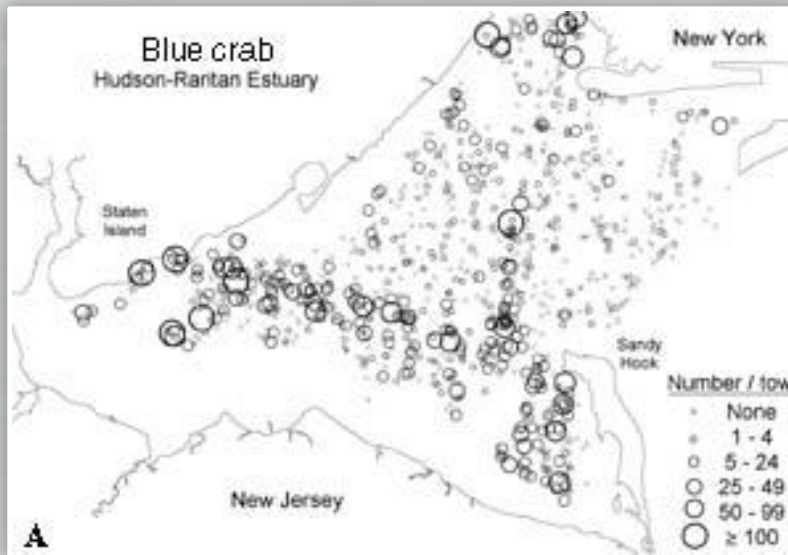


WINDOW NOT JUSTIFIED & LARGE VOLUME TO DREDGE, NOT ENOUGH TIME



NEW YORK HARBOR – Main Ship and Sandy Hook

- Blue Crab Window
 - ▶ NMFS Overwintering Blue Crab Window: 15 November – 15 March
 - ▶ Reference Stehlik et al. 2004 – considers when and where crabs depend on certain locations to complete life cycles.
 - ▶ Reference sites large number of overwintering crabs from December – March.
 - ▶ Typically crabs overwinter in colder months (January – February).
 - ▶ Study area considered 280 square kilometers within Hudson-River Estuary.
 - ▶ Proposed dredging area for 2011 project is 0.15% of this study area.



DREDGING AREA 0.15% of STUDY AREA

NEW YORK HARBOR – Main Ship and Sandy Hook



- Winter Flounder Window
 - ▶ NJDEP WQC Winter Flounder Window:
1 January – 31 May (Main Ship & Sandy Hook)
 - ▶ NYDEC WQC Winter Flounder Window:
1 February – 31 May (Main Ship)
 - ▶ 2 different environmental windows for shoals within the same channel.

**DIFFERING WINDOWS FROM STATE AGENCIES FOR
SAME SPECIES IN SAME CHANNEL**

