Appendix D

Response to Comments

Dec 8 Transcript Outline:

Comment: Do Plaintiffs want a SEIS?

USACE Response: Yes, as evidenced by numerous documented Plaintiffs requests. But, USACE is not REQUIRED to provide one because several procedures/processes are available to assist Federal Agencies in making NEPA decisions as outlined below:

1.)

Sec. 1508.12 Federal agency: "Federal agency" means all agencies of the Federal Government. It **does not mean the Congress, the Judiciary, or the President,** including the performance of staff functions for the President in his Executive Office. It also includes for purposes of these regulations States and units of general local government and Indian tribes assuming NEPA responsibilities under section 104(h) of the Housing and Community Development Act of 1974.)

Sec. 1501.4 Whether to prepare an environmental impact statement. In determining whether to prepare an environmental impact statement the **Federal agency** shall:

(a) Determine under its procedures supplementing these regulations (described in Sec. 1507.3) whether the proposal is one which:

1. Normally requires an environmental impact statement, or
2. Normally does not require either an environmental impact statement or an environmental assessment (categorical exclusion).

(b) If the proposed action is not covered by paragraph (a) of this section, prepare an environmental assessment (Sec. 1508.9). The agency shall involve environmental agencies, applicants, and the public, to the extent practicable, in preparing assessments required by Sec. 1508.9(a)(1).

(c) **Based on the environmental assessment make its determination whether to prepare an environmental impact statement**.

Sec. 1508.9 Environmental assessment.

"Environmental assessment":

(a) Means a concise public document for which a **Federal agency** is responsible that serves to:

1. Briefly provide **sufficient evidence and analysis for determining whether to prepare an environmental impact statement or a finding of no significant impact**.
2. **Aid an agency's compliance with the Act when no environmental impact statement is necessary**.
3. Facilitate preparation of a statement when one is necessary.

2.)

CEQ procedures:

EPA review and comment (summary of the Environmental Law Handbook)

By

Kartik Gandhi and Vijay Chennoju

(REFERENCES : ENVIRONMENTAL LAW HANDBOOK, 14TH EDITION THOMAS F. P. SULLIVAN (EDITOR) GOVERNMENT INSTITUTES, Inc.)

EPA has developed a rating system for draft EISs that summarizes EPA's level of concern about the adequacy of the document. The rating system uses an alphanumeric system, having alphabetic categories:

LO – Lack of Objections

EC – Environmental Concerns

EO – Environmental Objections

EU – Environmental Unsatisfactory

The numeric categories are:

1 – Adequate

2 – Insufficient Information

3 – Inadequate

Depending upon the ratings, EPA may initiate follow-up discussions with the lead agency or have consultation with the CEQ. The detailed review and submission of comments will be done for those actions rated EO, EU, or 3 at the draft stage.

Sec. 1504.1 Purpose.

(a) **This part establishes procedures for referring to the Council Federal interagency disagreements concerning proposed major Federal actions that might cause unsatisfactory environmental effects.** It provides means for early resolution of such disagreements.

(b) Under section 309 of the Clean Air Act (42 U.S.C. 7609), the Administrator of the Environmental Protection Agency is directed to review and comment publicly on the environmental impacts of Federal activities, including actions for which environmental impact statements are prepared. If after this review the Administrator determines that the matter is "unsatisfactory from the standpoint of public health or welfare or environmental quality," section 309 directs that the matter be referred to the Council (hereafter "environmental referrals").

(c) Under section 102(2)(C) of the Act other Federal agencies may make similar reviews of environmental impact statements, including judgments on the acceptability of anticipated environmental impacts. These reviews must be made available to the President, the Council and the public.

Comment: Court to Plaintiffs: If SEIS issued- what remedy would you seek then?

USACE Response: An SEIS would not ensure any different analyses than that which the current EA has already provided. USACE mitigative concessions (expanded TSS monitoring program, Inspection Process, Coordination Plan, additional BMP's as required and practicable) = avoidance, minimization and compensation for potential impacts to RIFS study. Tangible environmental benefits are derived from these analyses and concessions, therefore, this EA analyses is not a "paper solution".

Comment: Would NRDC suggested data replacement (Phase 1) change our conclusions?

USACE Response: This issue is not ripe for discussion or decision under NEPA. As new data become available, USACE will review all relevant new or significant data and determine what, if any additional NEPA evaluations are required**.** However, in addition to the geochemical analysis performed in the EA Volume II, the attachment entitled "General Characterization of Newark Bay from historical, hydrodynamic and geophysical perspectives" provides additional, separate lines of argument that further support the existing data does not indicate that the continued HDP construction will adversely impact the RI/FS.

Comment: The important conclusion is does our dredging affect or delay the RIFS/Clean up remedy?

USACE Response: No. Our dredging will have less of an effect on RIFS than resuspension caused by ships or natural (meteorological) environmental conditions combined.

Comment: Are you predetermining the outcome due to schedule/cost constraints? Can you be objective under these circumstances?

USACE Response: USACE cannot respond to or attempt to disprove a negative theory. USACE can only conduct its' only NEPA analyses according to statute and regulation and respond to public concerns. Thus far, the only public concerned about the potential effects of the HDP on the RIFS are the Plaintiffs and their. To date, no technical evidence contradicting USACE's EA analyses has been produced.

Comment: USACE wants to keep their schedule very much.

USACE Response: This is true as is mandated by Congress our own regulations to protect the Federal interest. We have a fiduciary responsibility to the United States taxpayers and a commitment to Congress. USACE regulations and Environmental Operating Principles mandate compliance with environmental laws and regulations. We have redundant Headquarters oversight to ensure compliance with all laws and regulations. We had public review and input as well as Federal and state review and input (EPA, USFWS, NOAA, NJDEP, NYSDEC) as is mandated by NEPA. To date, only Plaintiffs disagree with USACE EA evaluations.

Attachment to Response to December 8, 2005 Transcript Comments

General Characterization of Newark Bay from historical, hydrodynamic and geophysical perspectives

Introduction

As with many similar estuaries with extensive surrounding industrial, commercial and residential development, the physical, chemical and biological characteristics of Newark Bay are dynamic, complex and oftentimes interrelated. Considerable insight into the nature and behavior of the dynamics and conditions within Newark Bay can be gleaned from a review of historical, hydrodynamic and geophysical perspectives as it relates to the anthropogenic changes (*e.g.*, dredging, filling, ship traffic, etc.) that have and continue to exist within the Bay. Combined, these characterizations and the inferences that can be drawn from them provides strong compounding evidence that the continued harbor deepening projects within Newark Bay have negligible, if any, likelihood to significantly impact the environment in adverse manner or the ongoing remedial investigation/feasibility study that is underway in the Newark Bay Study area by the EPA.

Historical Characterization

The following figures (1. through 11.) with annotations provide a cursory review of the significant physical developmental actions which have occurred in and around the Newark Bay over the past approximately 130 years. Broader and more detailed views of the charts used to create these figures can be found at the following website: http://historicals.ncd.noaa.gov/historicals/histmap.asp.

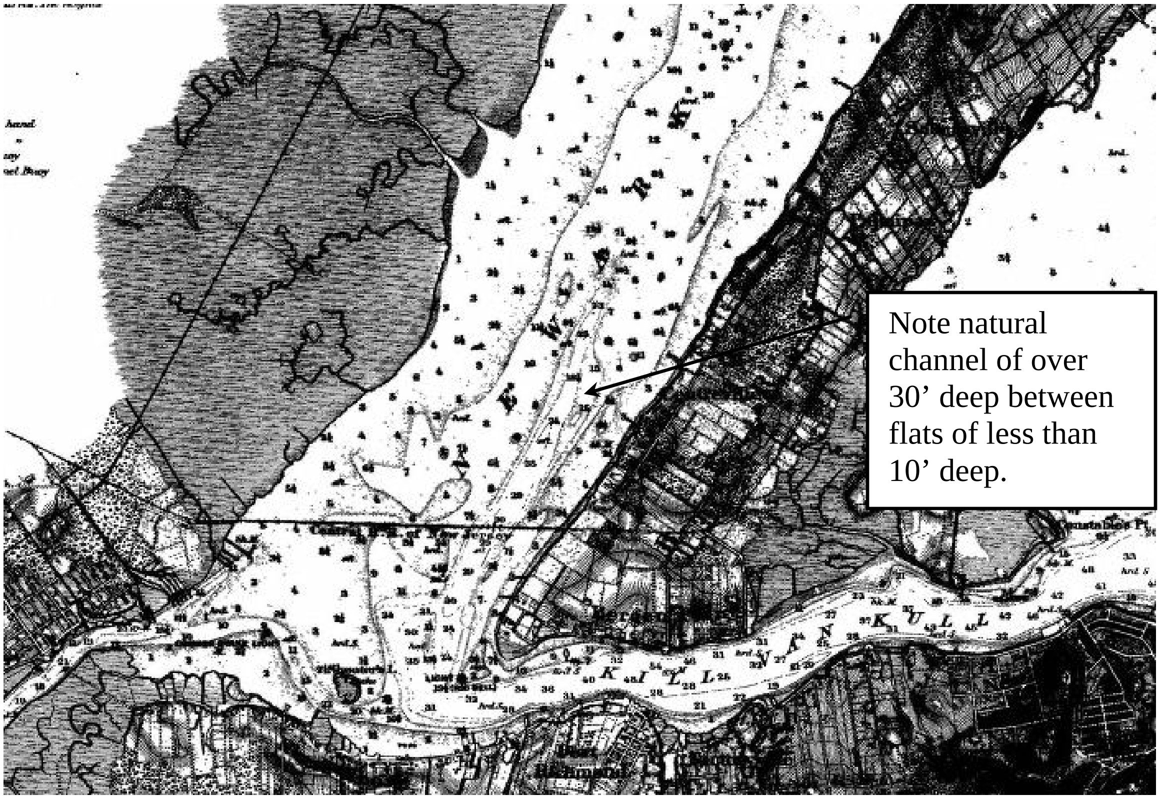


Figure 1. NOAA Historical Chart of Newark Bay circa 1874

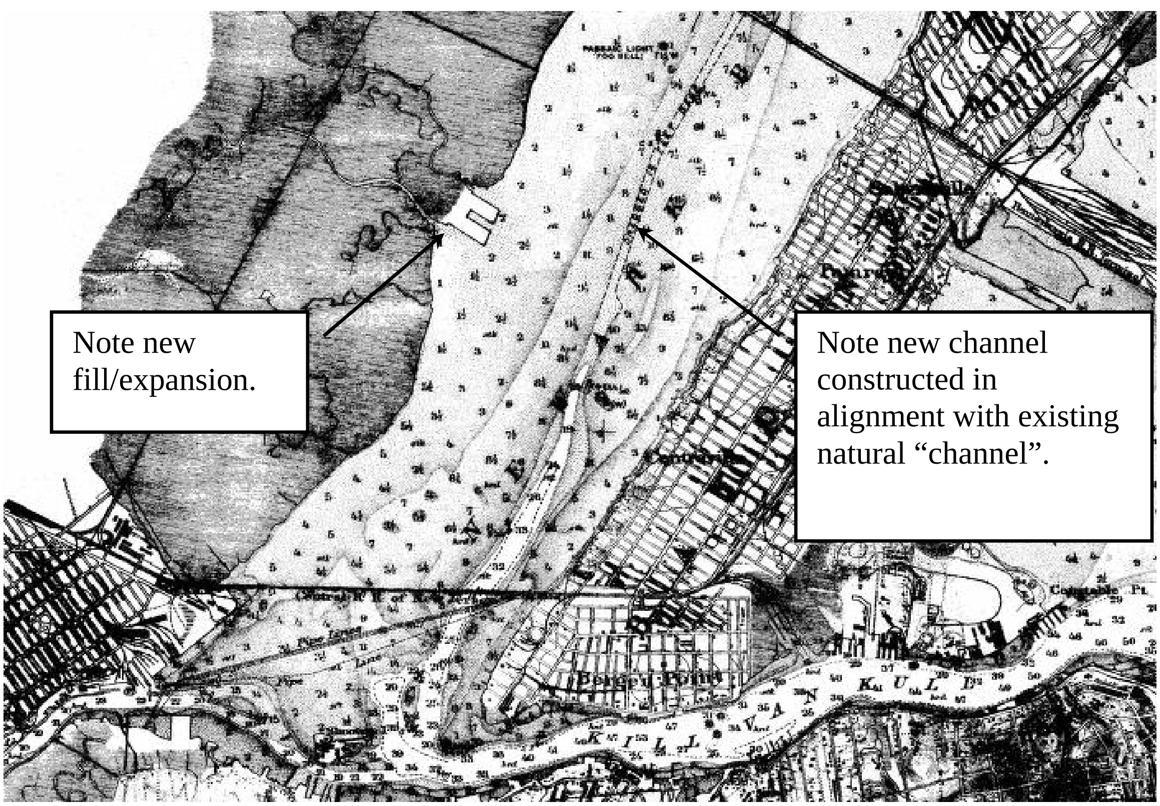


Figure 2. NOAA Historical Chart of Newark Bay circa 1910

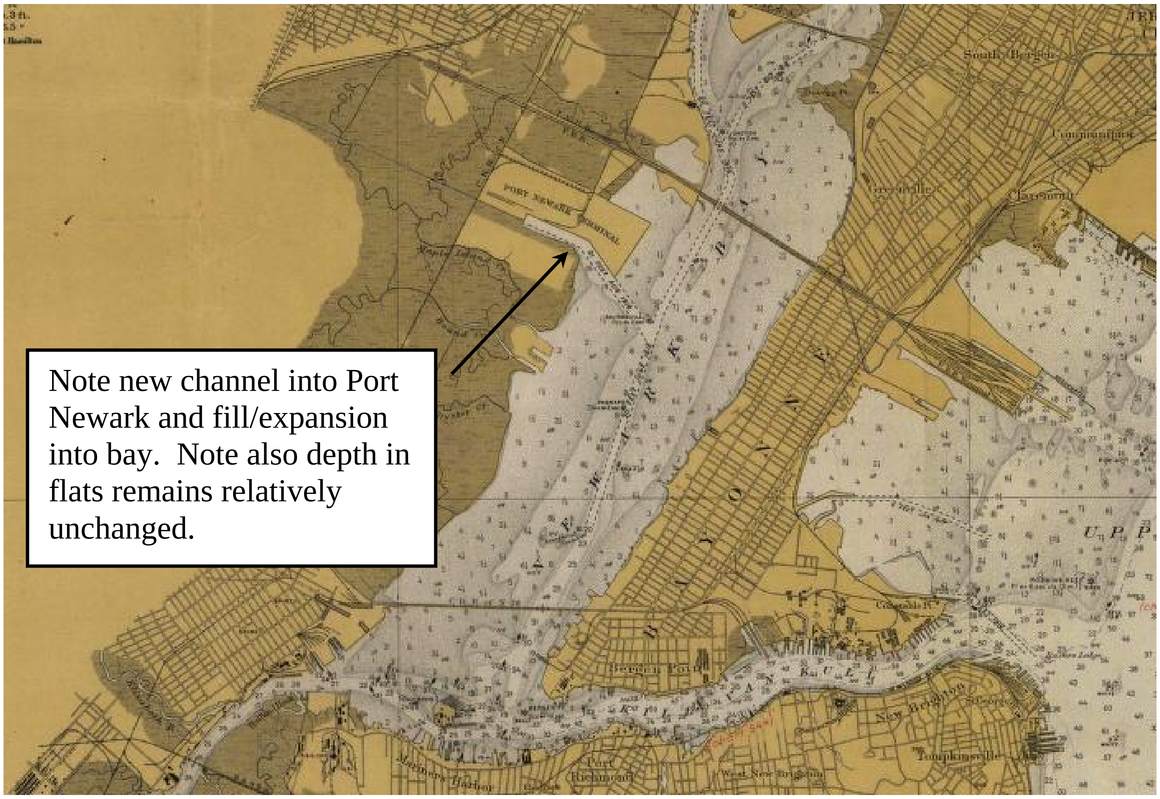


Figure 3. NOAA Historical Chart of Newark Bay circa 1917

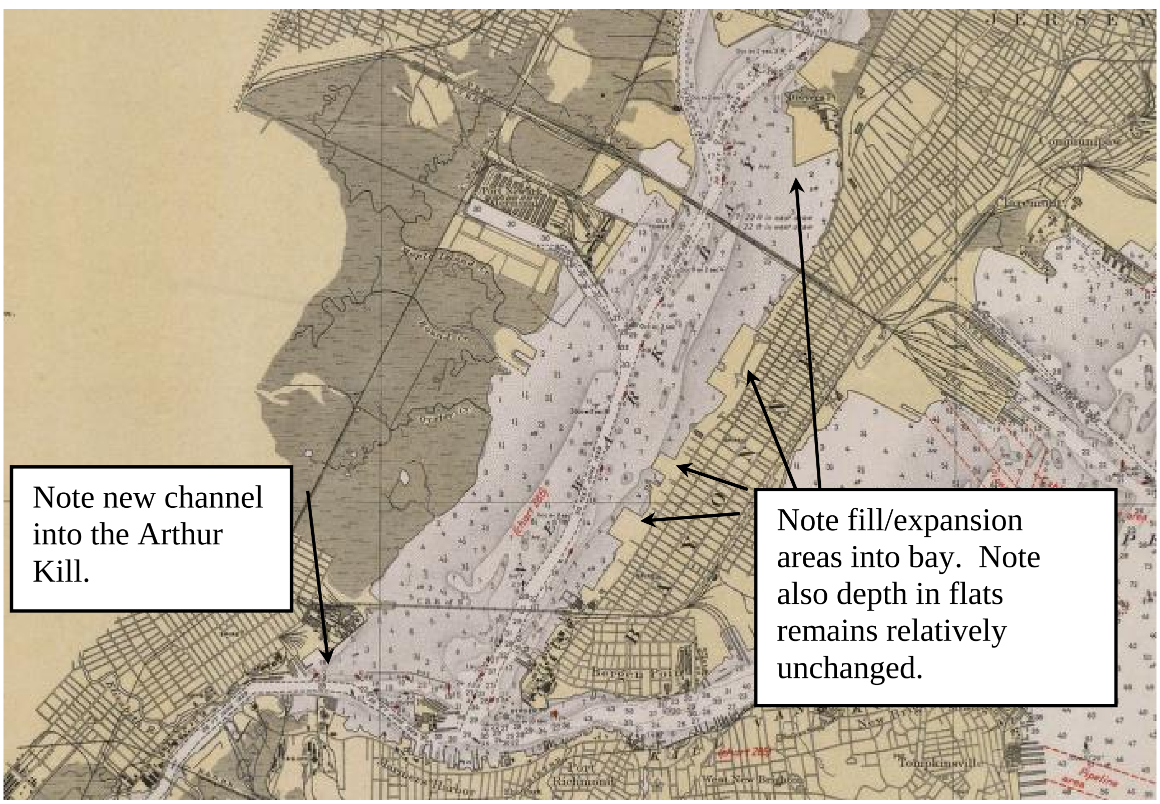


Figure 4. NOAA Historical Chart of Newark Bay circa 1930

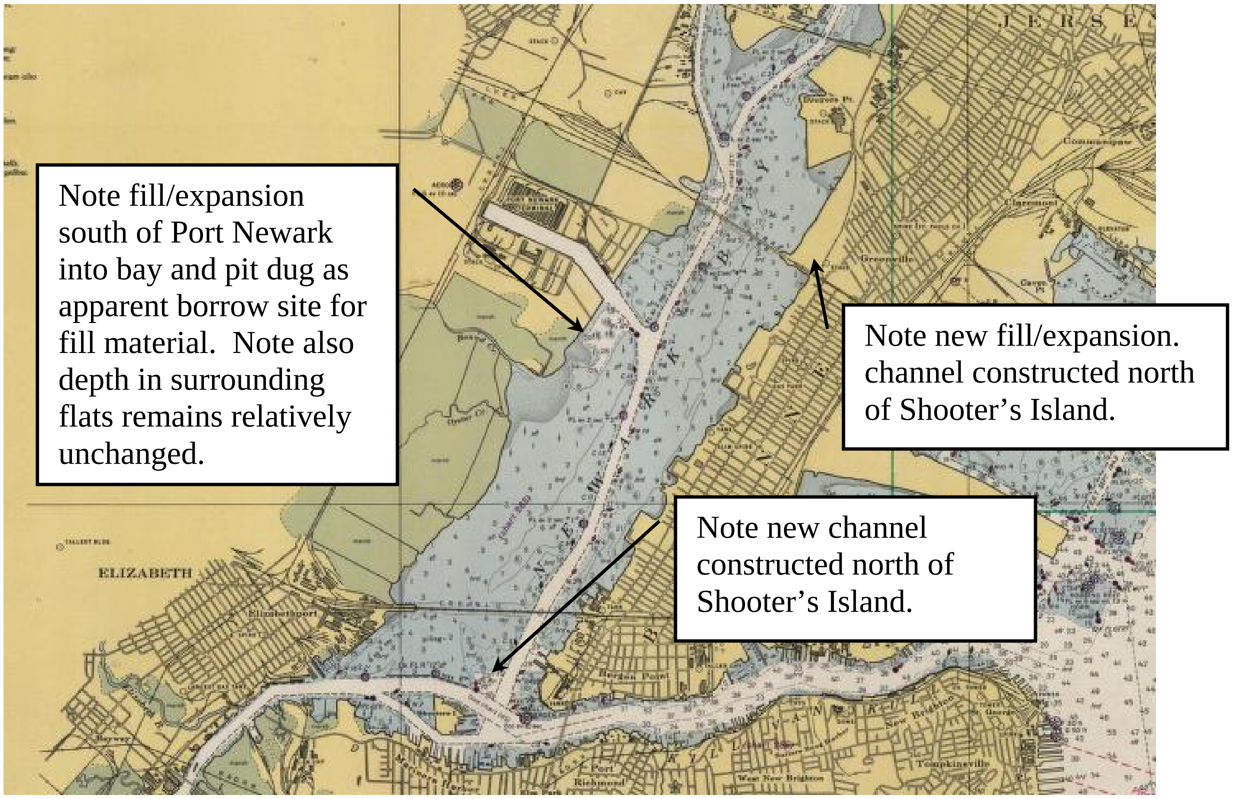


Figure 5. NOAA Historical Chart of Newark Bay circa 1944

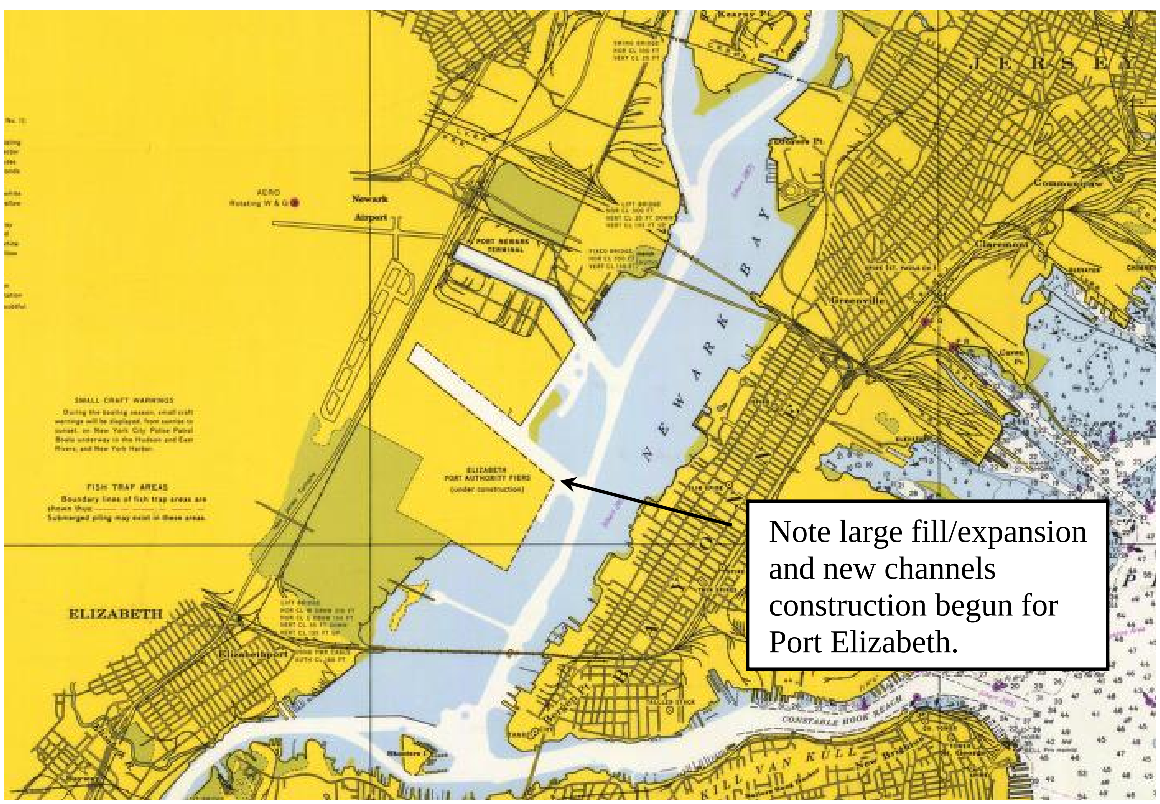


Figure 6. NOAA Historical Chart of Newark Bay circa 1965

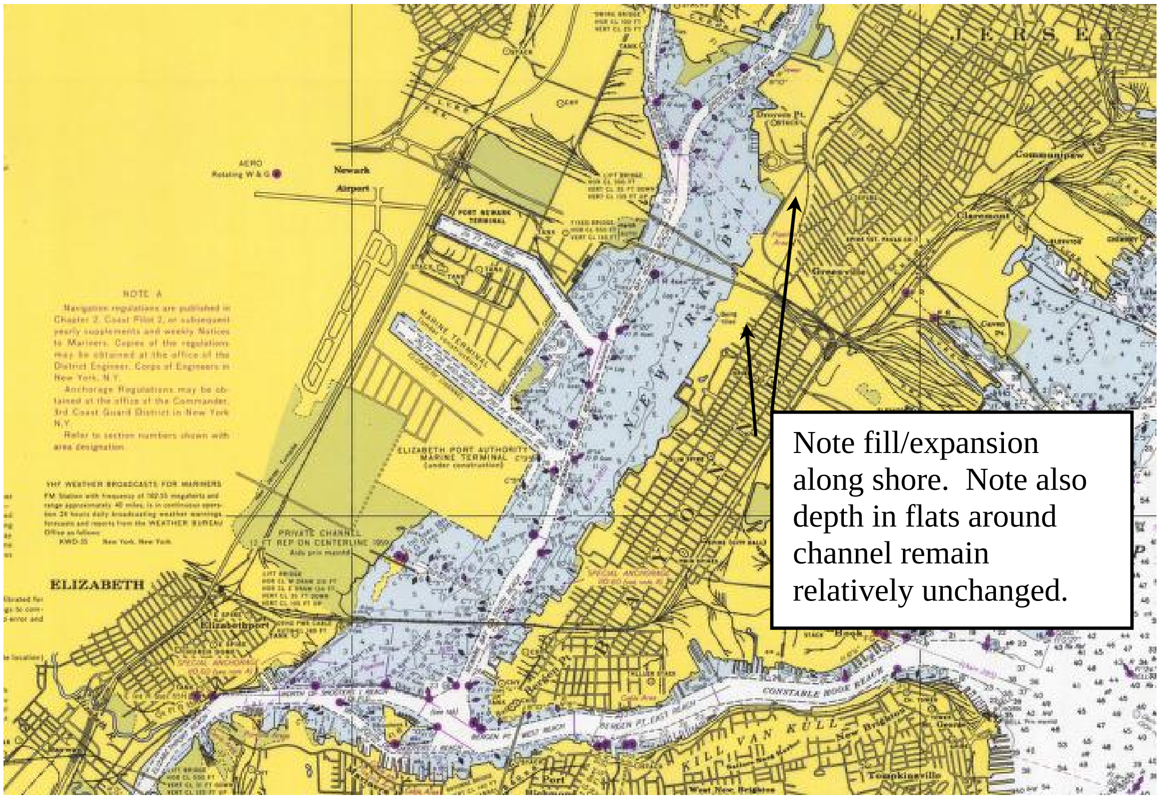


Figure 7. NOAA Historical Chart of Newark Bay circa 1969

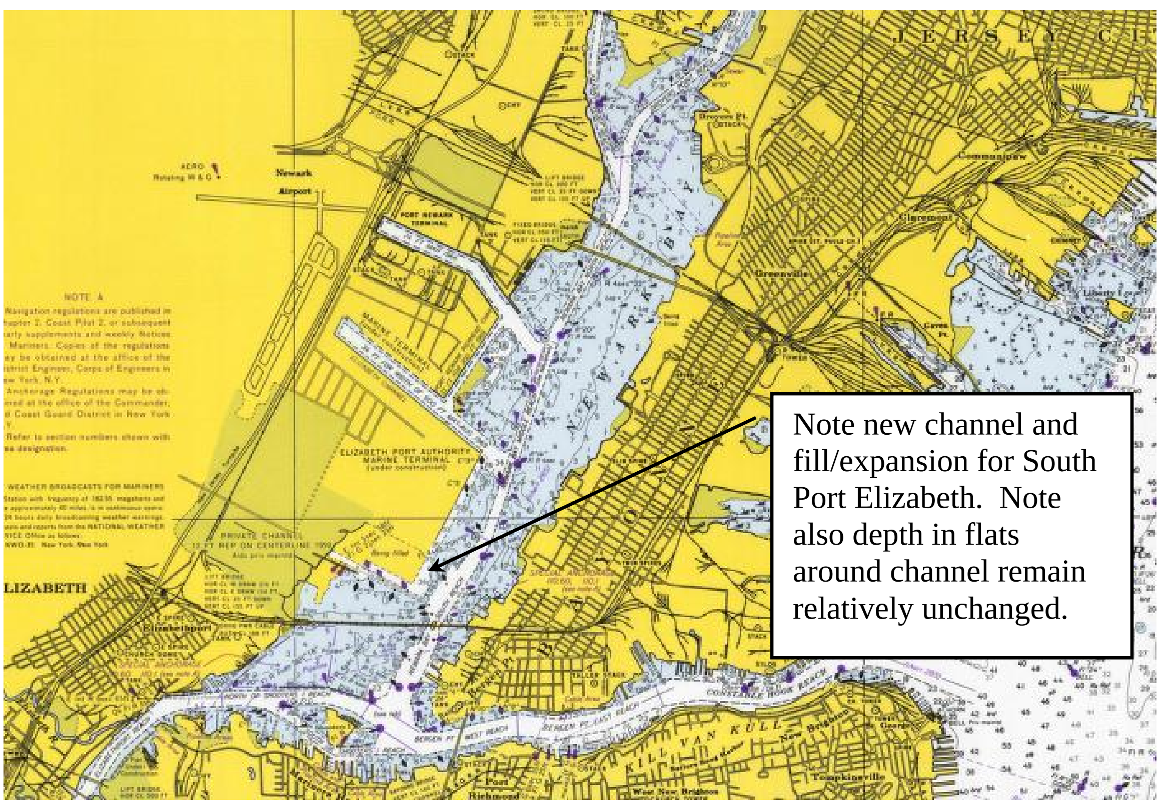


Figure 8. NOAA Historical Chart of Newark Bay circa 1971

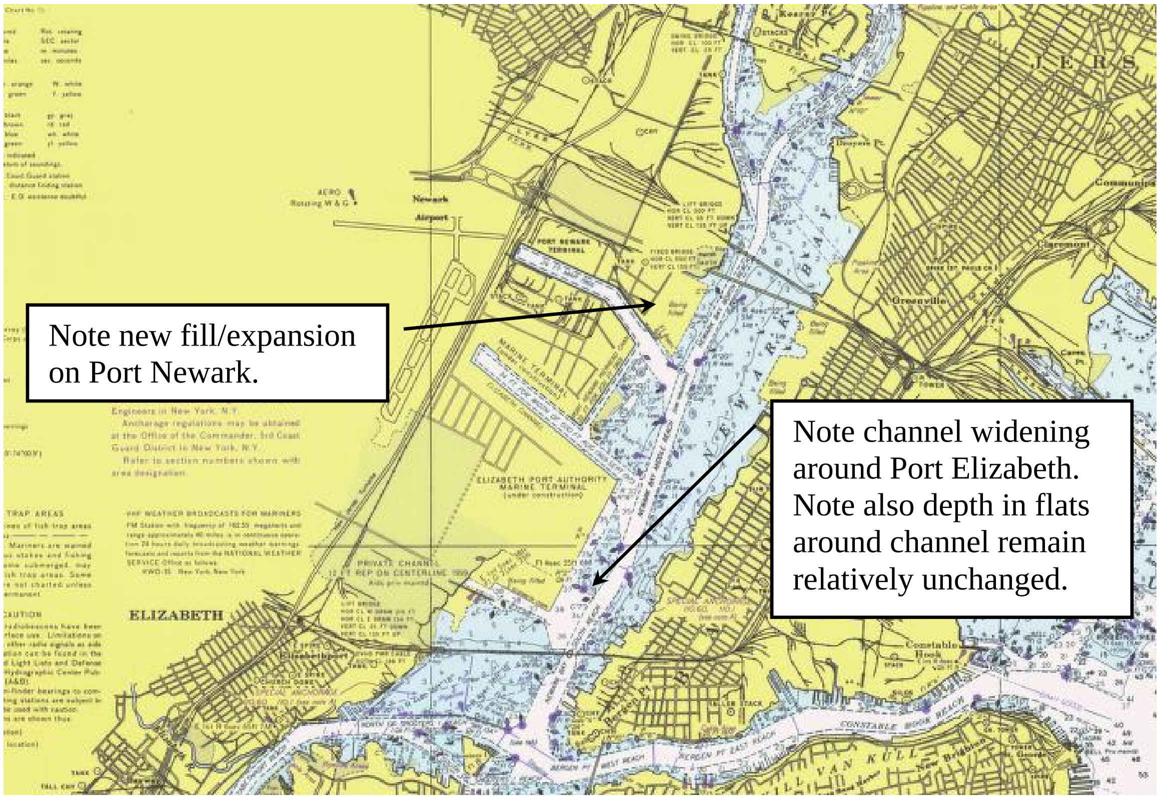


Figure 9. NOAA Historical Chart of Newark Bay circa 1975

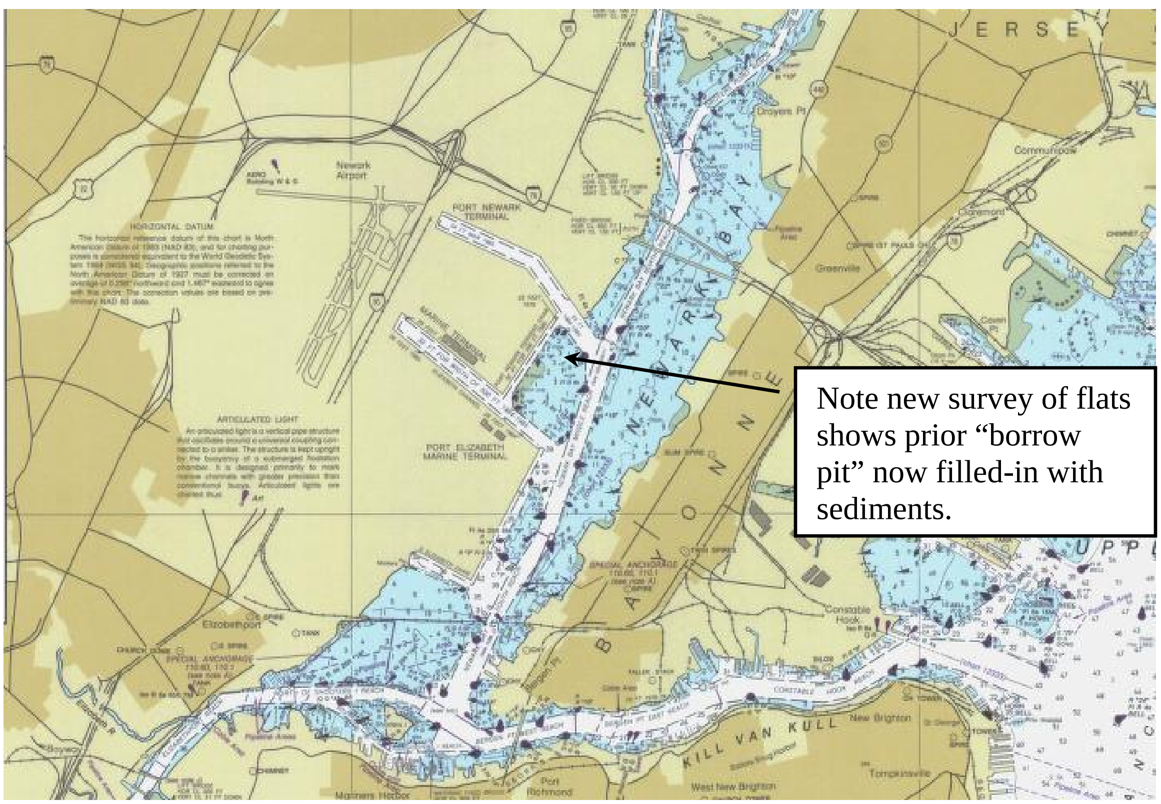


Figure 10. NOAA Historical Chart of Newark Bay circa 1986

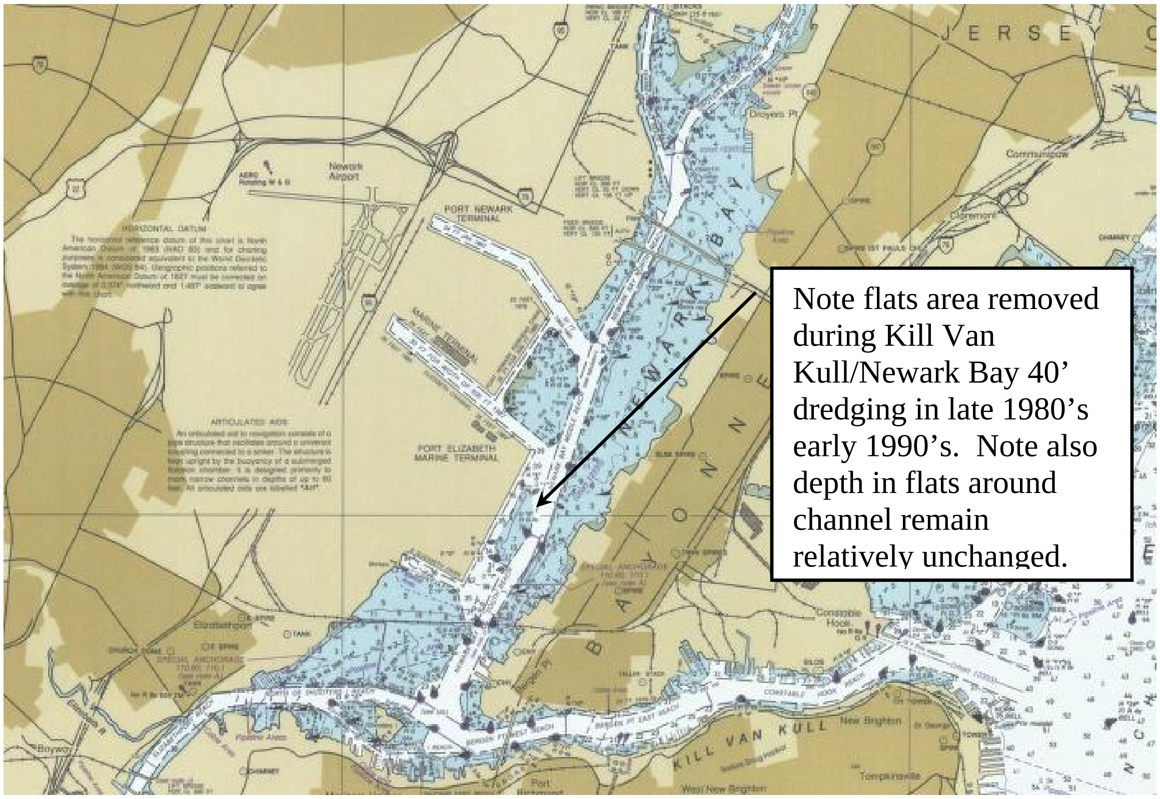


Figure 11. NOAA Historical Chart of Newark Bay circa 1989

As illustrated on the figures above, several separate fill/expansions have occurred in the past 130 years on both the eastern and western shores of Newark Bay. Concurrently, several navigation channel deepening projects have been constructed. Since much of this construction was performed prior to the NEPA, few environmental considerations were explicitly included within the design and performance of the navigation channel construction, as compared to the dredging practices currently employed. In spite of this, little, if any, discernable change is noticed within the bathymetry of the flats areas that lie adjacent to the numerous navigation channels that have been constructed, deepened and or widened within the bay. While the survey data in the flats areas of the bay are course, it does indicate that the flats have been relatively unaffected in bathymetry over the past several decades from the prior channel construction. Further, since the flats east of the channel in the southern half of the bay appear to have no large decreases in bathymetry from the 1940’s to present (unlike other selected locations in the bay such as the borrow pit off of the Port Newark Pierhead channel), the likelihood for finding any contaminated sediment “hot spot” deeper than the approximately 1-2 feet (as documented in the EA references) is low. Given that ambient currents (see below), storm conditions and bioturbation are known to mix the top few inches of sediment regularly, the vertical profiles of contamination through this 1-2 foot layer are expected to be diffused as the sediments were deposited. Combined, this leads to the view that the sediments in the flats are expected to have similar characteristics as existing, albeit limited, data indicates.

Hydrodynamic Characterization of Newark Bay

Hydrodynamic Model Description **–**The three-dimensional hydrodynamic model, TABS-MDS, has been used by the Corps' Engineering Research and Development Center to evaluate hydrodynamic conditions within the bay related to the Harbor Deepening Project. This model generated the following plots (Figures 12 – 17) of the ambient maximum flow conditions on both Flood (incoming) and Ebb (outgoing) tide conditions as well as the residual (net) currents in the bay in both the surficial and bottom water column. TABS-MDS (Multi-Dimensional, Sediment) is a finite element, hydrodynamic model. It is based on RMA10, a model written by Ian King of Resource Management Associates (King, 1993), which was used to evaluate sedimentation effects from the HDP (see Appendix E – Channel Design from HDP Feasibility Report, December 1999). It is capable of modeling turbulent, sub-critical flows using 1-D, 2-D, and/or 3-D elements. It is also capable of modeling constituent transport. This includes modeling salinity, temperature, and/or fine-grained sediment.

Model Boundary Conditions – The freshwater discharges were input at six locations in the model: the Raritan River, the South River, the Rahway River, the Passaic River, the Hackensack River, and the Hudson River. A constant discharge was used for each river. These discharges represent the mean discharge for each river and are presented in the table below.

River Inflows	
River	**Inflow Discharge (cfs)**
Raritan River	1000
South River	500
Rahway River	100
Passaic River,	3000
Hackensack River	400
Hudson River	12000

The tidal forcing for the hydrodynamic model was selected as a repeating tide of an amplitude midway between a mean tide range and the average spring tide range. This is the same tidal forcing used for the New York Channel Deepening Study (Letter, 1999). Tidal boundary conditions were necessary at two locations in the mesh: the Atlantic Ocean boundary southeast of Sandy Hook and the Long Island Sound boundary condition located east of New London Harbor (Connecticut). The model was run in 3 layers in the channel plus one boundary layer (for the no slip condition) for a total of 4 layers. As moving away from the channel, the vertical resolution was "feathered" down to 1 layer. The total number of elements was 12464 in the horizontal.

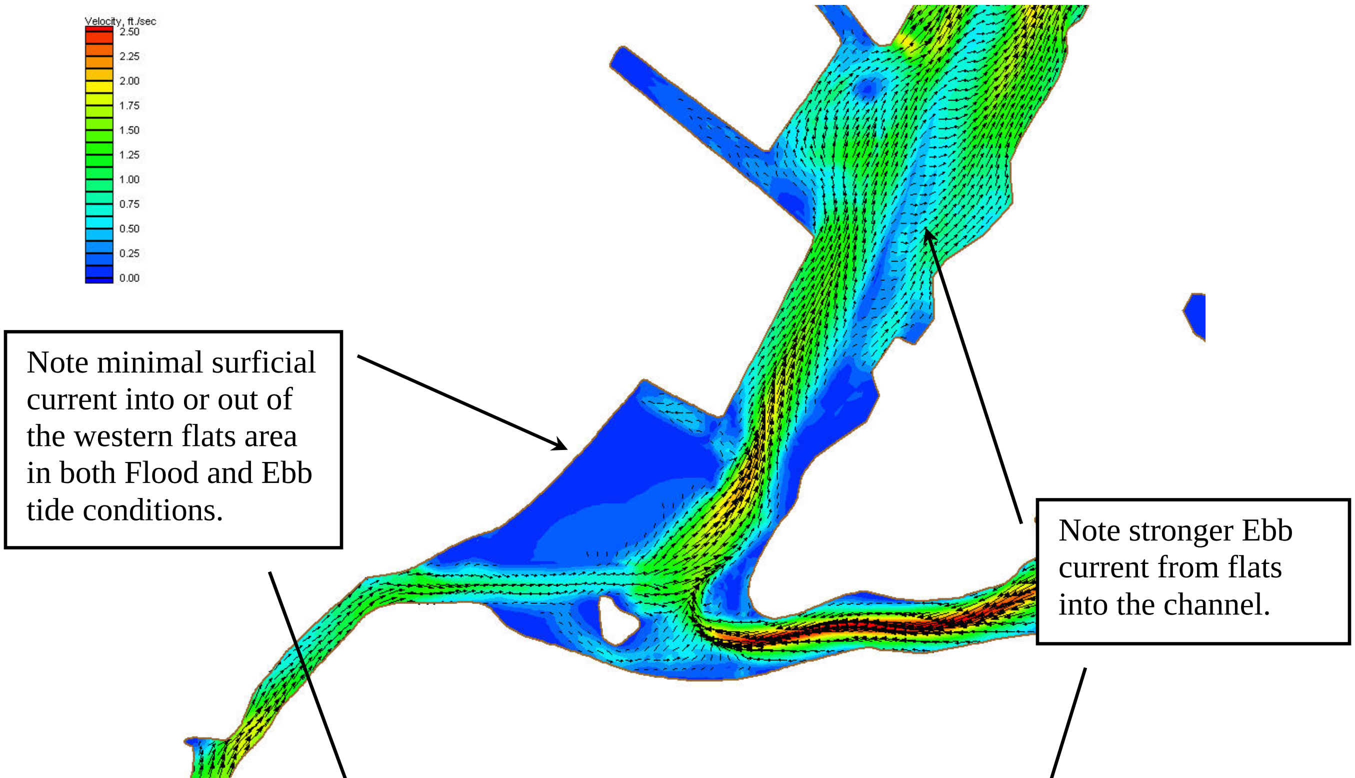


Figure 12. Maximum Typical Surficial Current During Flood Tide (ft/s)

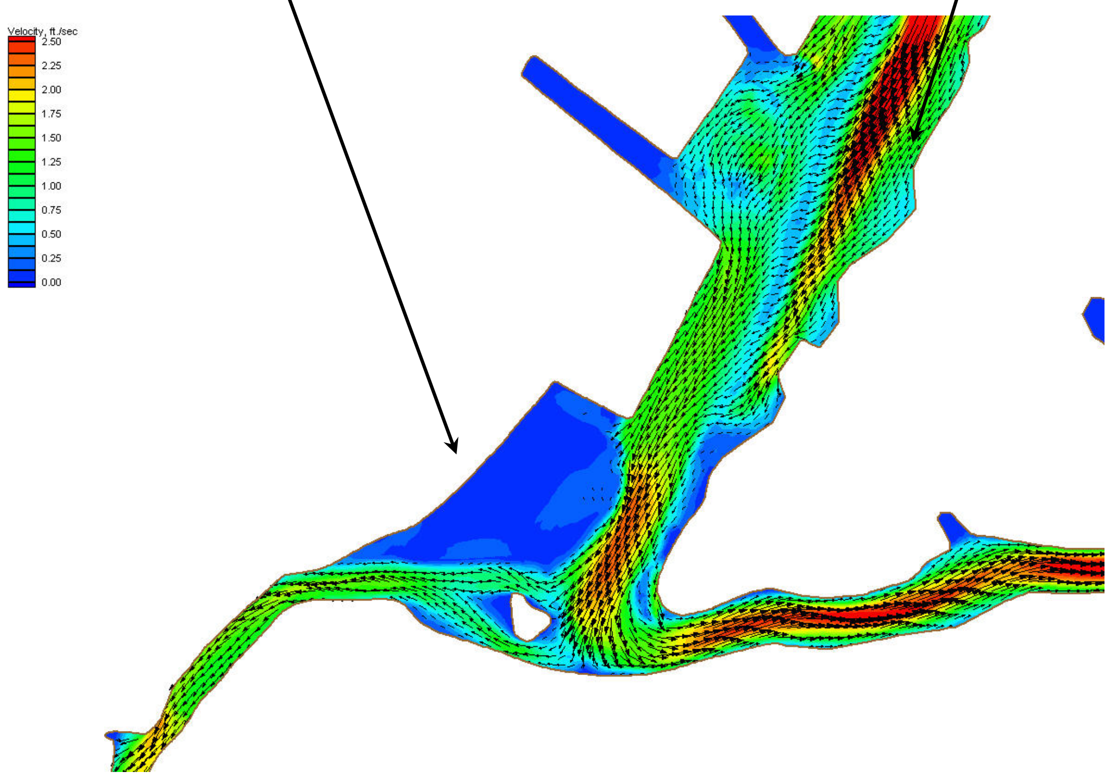


Figure 13. Maximum Typical Surficial Current During Ebb Tide (ft/s)

Note minimal bottom current into or out of the western flats area in both Flood and Ebb tide conditions.

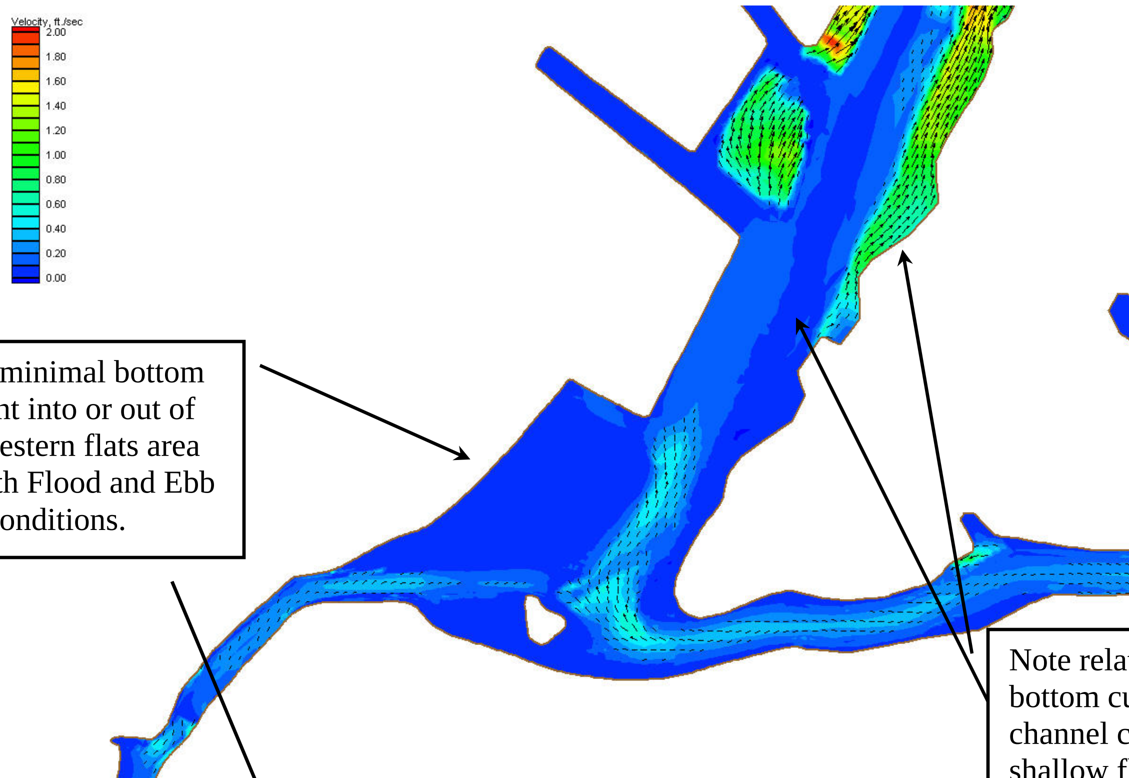


Figure 14. Maximum Typical Bottom Current During Flood Tide (ft/s)

Note relatively low bottom current in channel compared to shallow flats areas during both Flood and Ebb tides.

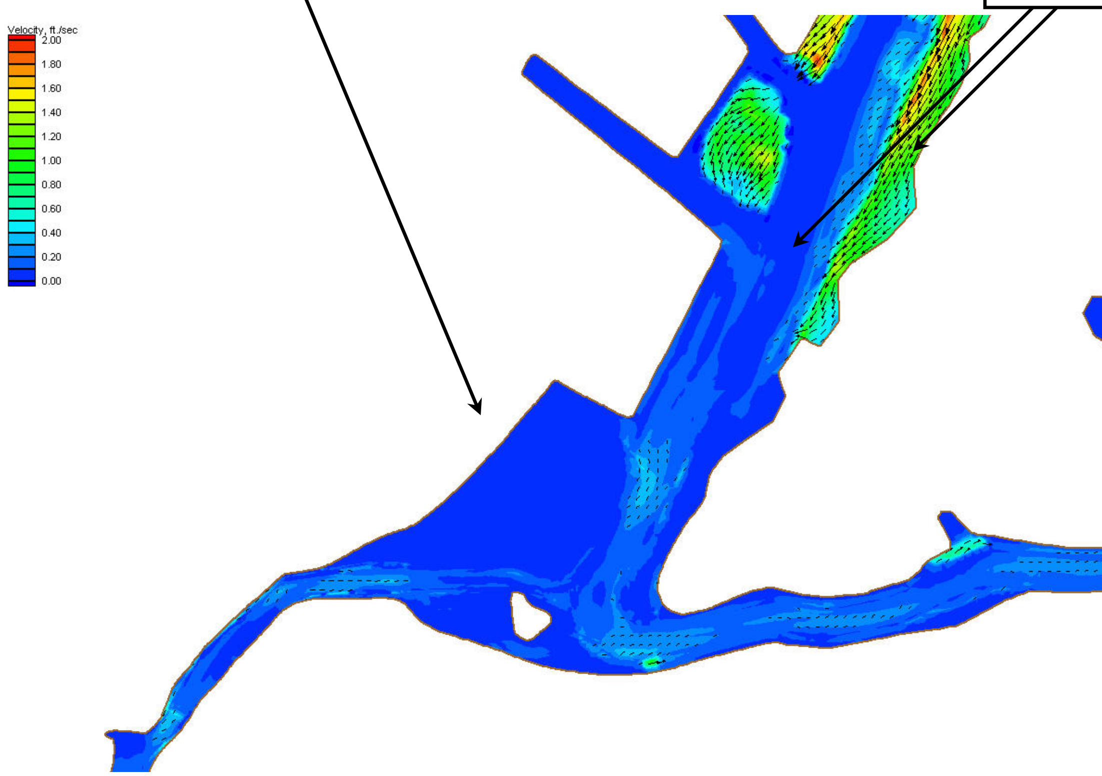
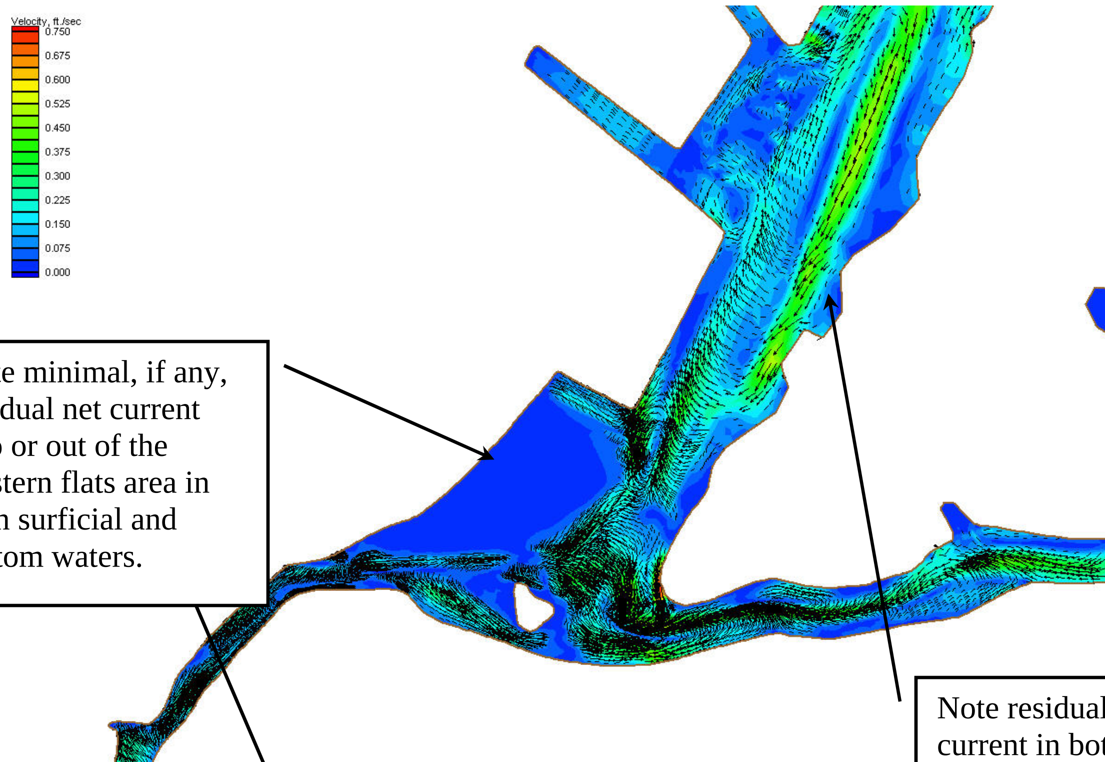


Figure 15. Maximum Typical Bottom Current During Ebb Tide (ft/s)



Note minimal, if any, residual net current into or out of the western flats area in both surficial and bottom waters.

Figure 16. Residual (net) Surficial Current (ft/s)

Note residual net current in both surficial and bottom waters from the flats into the channel.

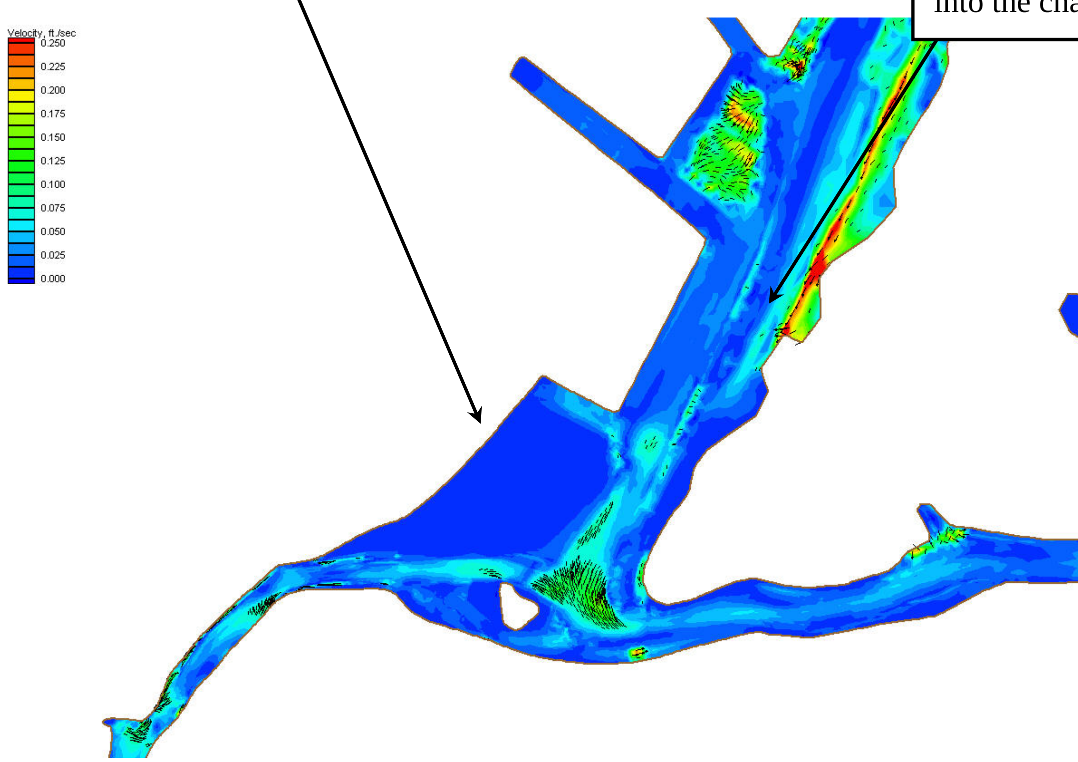


Figure 17. Residual (net) bottom current (ft/s)

Model Indications – A comparison of figures 12 and 13 to figures 14 and 15 indicates that the flow in the surficial waters are considerably greater during peak flow period (both Flood and Ebb tides) than the flow in the bottom waters, particularly the bottom waters of the channels. Further, the predominant flow within the channel follows the generally north-south flow, which corresponds with when the original channel in the bay was constructed at the beginning of the last century. While the water in the main channel leading north into the bay does interact with the surrounding flats, the flow is generally greater from the flats into the channel. This is further corroborated in the residual net flow shown on figures 16 and 17. Further, since the peak flows where the Kill Van Kull enters Newark Bay are similar, if not greater than, the flows in the channel next to the eastern central flats area of the bay, the distance that the dredging plume may be measured in the central area of the bay from the dredge site is expected to be predominantly within the confines of the channel and less than that which was measured in the 2005 TSS monitoring study of the Corps. This study indicated that the plume from the dredge returned to ambient conditions within 250 feet of the dredge site, although the more conservative 350 foot distance as measured in the Corps 2002 TSS/plume monitoring study has been used in the EA analyses.

As shown on figures 14 and 15 and as expected, the bottom currents in the northern flats of Newark Bay are predominantly greater than in the deeper channel areas. Given this, the shear bed stress from both ambient and atypical storm conditions is expected to have considerably greater influence in resuspending sediments from these flats areas, particularly in the eastern flats due to the prevailing westerly winds that can drive circulation patterns within the bay and the long fetch that winds from this direction have. Further, the effect of wind driven currents jibes with the residual clockwise residual Ekman transport circulation pattern shown in the bay.

Also, figures12. through 17. indicate that the flats south of Port Elizabeth west of the main Newark Bay channel and north of the Arthur Kill channel are relatively isolated hydrodynamically from the channels during ambient flow conditions. Consequently, this area is largely effected more so from atypical storm conditions, particularly conditions such as nor'easters where strong, sustained eastern wind occurs given the fetch across the bay.

Geophysical Characterization

Figure 18. below illustrates the overhead (plan) view of the middle of Newark Bay. It identifies the geographic boundary for the S-NB-1 contract along with various geotechnical corings that have been collected in the bay for engineering design purposes. Also, it marks two lines in which schematic cross-sections of the bay (figures 19. 20.) have been generated to illustrate the relative water depths and multiple sediment and bedrock layers, or strata that exist in Newark Bay. Underlying the S-NB-1 contract area on Figure 18 is also shown a side-scan sonar mosaic taken from the bay in developing the engineering plans and specifications for the contract. Side-scan sonar is a remote sensing method that generates false color images which reflect the relative hardness and softness of the surficial sediments on the bay bottom. Hard sediments (*e.g.*, consolidated

Pleistocene red-brown clay and glacial till) and bedrock are shown in lighter shading, while softer, silty sediments are shown in darker shading. In this side-scan sonar mosaic, the relatively hard underlying Pleistocene red-brown clay material that was exposed during previous 45 foot deepening actions in the channel (circa 2002 – 2003). The scouring caused by navigating container ships turning into Port Elizabeth is clearly visible towards the top of the mosaic.

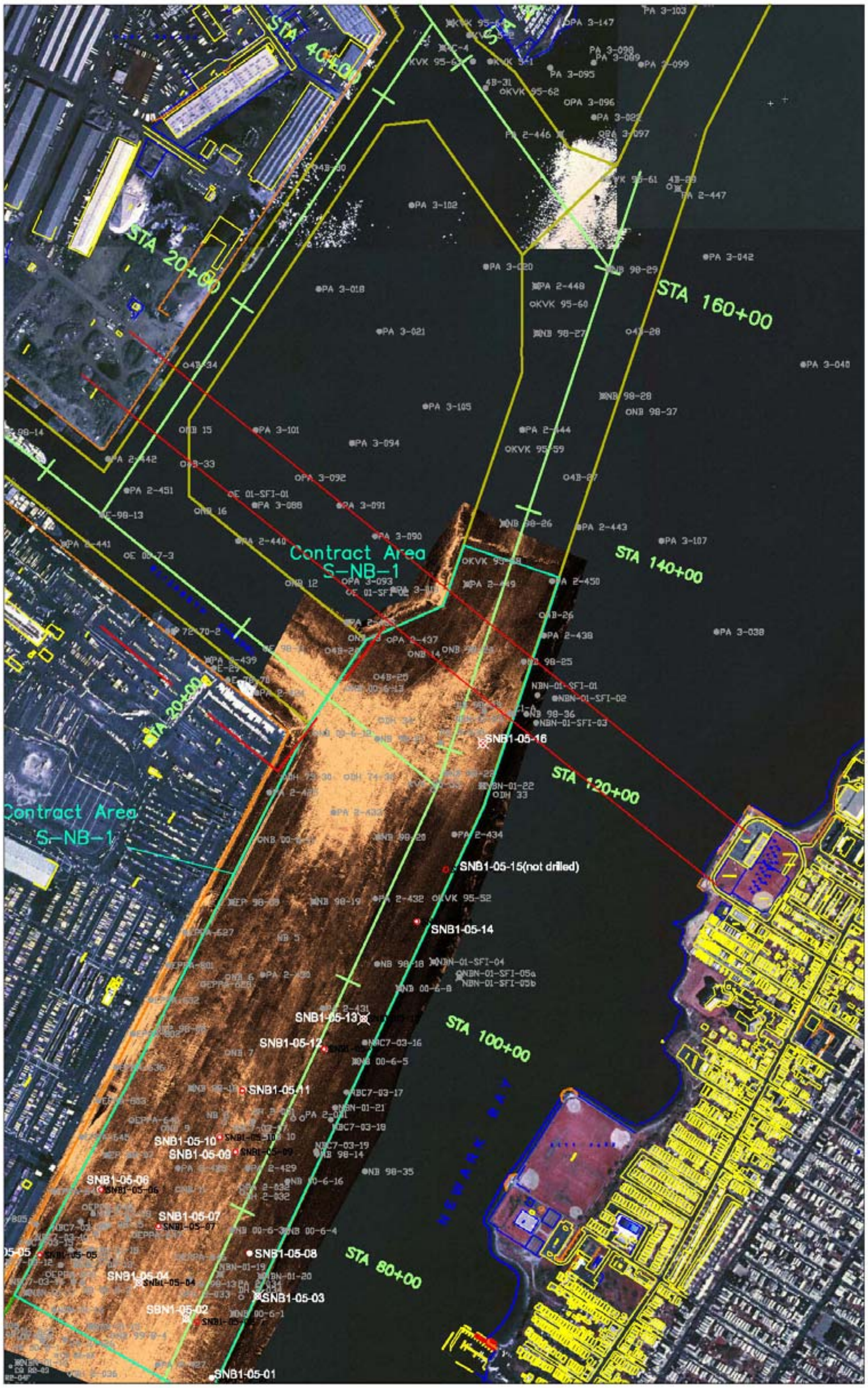


Figure 18. Plan View of middle Newark Bay showing S-NB-1 Contract, Cross-Section Locations and Side-Scan Sonar Mosaic

The east-west channel cross section shown on figures 19. and 20. (attached) well illustrate the three dimensional aspects of the project. The cross-sections shown on figures 19 and 20 are presented in both 1:1 horizontal to vertical scale as well as a 1:10 vertically exaggerated scale. These figures reflect well the relative “shelf” or “sill” that the flats areas are in comparison to the channel areas. This limited “window” of exchange between the channel and the flats further explains the entraining flow that that the channels have running north and south.

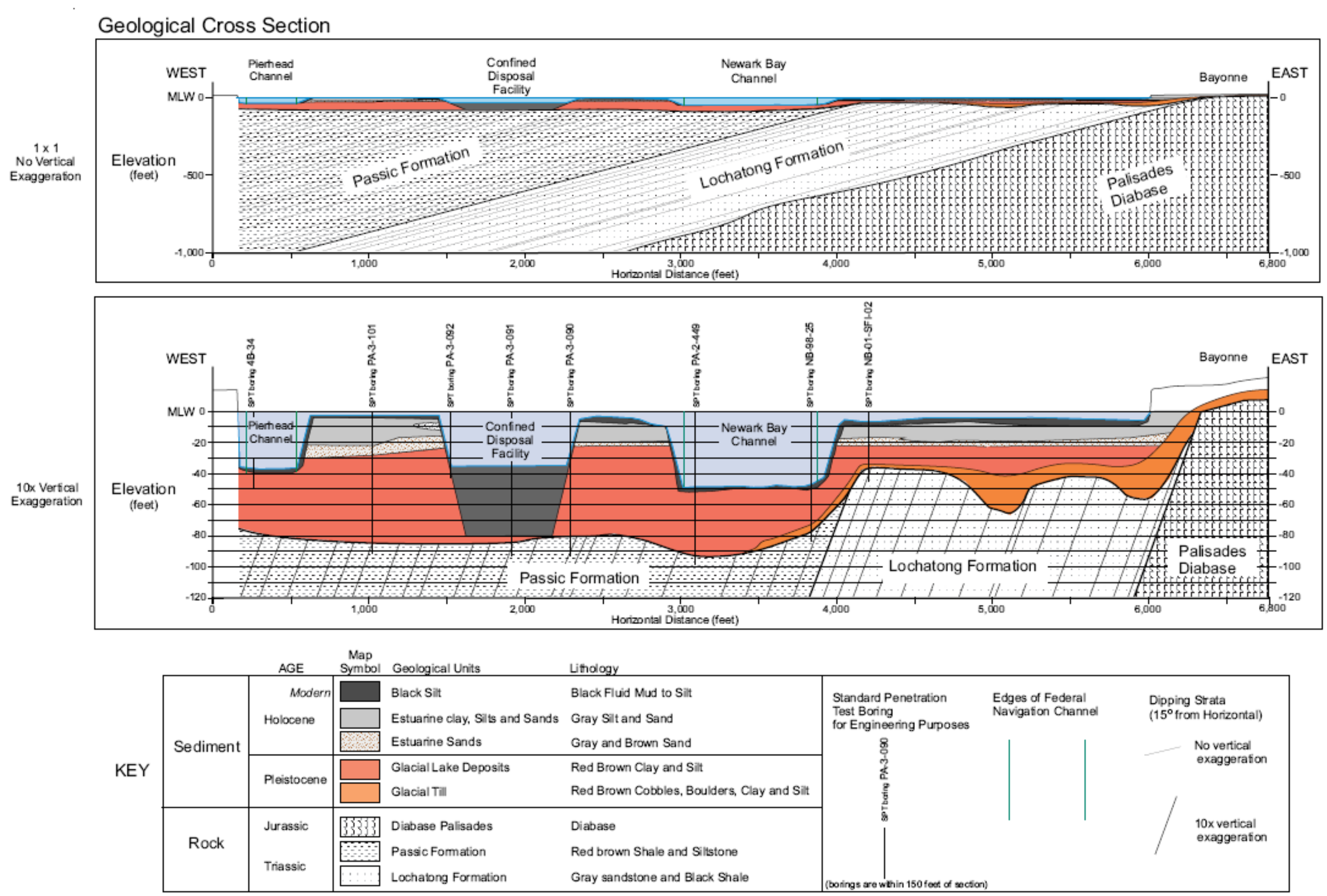


Figure 19. Geophysical Cross-Section of Middle Newark Bay (corresponds to top red line on figure 18.)

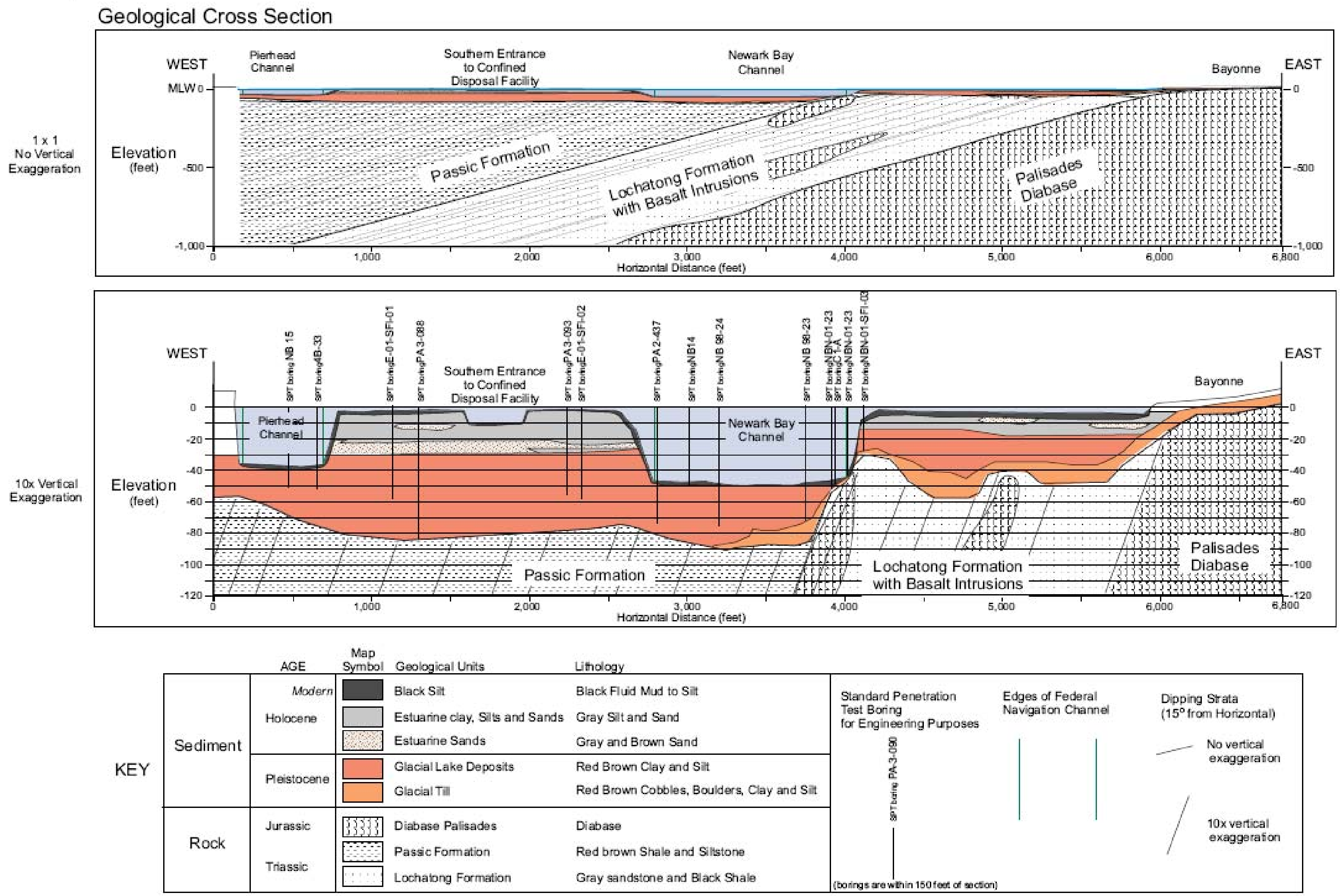


Figure 20. Geophysical Cross-Section of Middle Newark Bay (corresponds to bottom red line shown on Figure 18.)

Generic Evaluation of Potential Redeposition of Dredged Material Upon an Existing Sediment Bed

In addition to past average comparisons between the dredged material from the channel and the relatively low potential for adverse effect upon the RI/FS sampling (which was based on multiple, conservative assumptions), a general site specific comparison of the existing data in the flats east of the S-NB-1 contract area to the composites of dredged material closest to the flats correlate well in approximate concentration levels as well as spatial distribution within the bay. The three existing data points, which were taken in the last eight years in the flats area east of this contract range from 40 to 133 parts per trillion of TCDD in the areas that correspond from the northern end of the contract to the southern end. Similarly, the dredged material composites on the eastern half of the contract also drop in concentration from the north to the south where the highest composite TCDD concentration was measured at 157 parts per trillion. As shown in Figure 21. below, a relatively simple series of calculations with varying concentrations of dredged material over varying concentrations of existing flats material, using the average dredged material deposit thickness of 0.2 centimeters over a sediment bed where a 6 inch sample is then collected illustrates that dredged material deposits have very little potential to significantly alter the sediment samples taken, or to be taken in the future, in the flats under a wide range of possible conditions. Aside from the asymptotic limit that is encountered when the dredged material is relatively high in contamination when the existing sediment bed contamination approaches zero, the figure illustrates the relatively negligible effect that a wide range of interactions between varying dredged material contamination and varying sediment bed contamination could have.

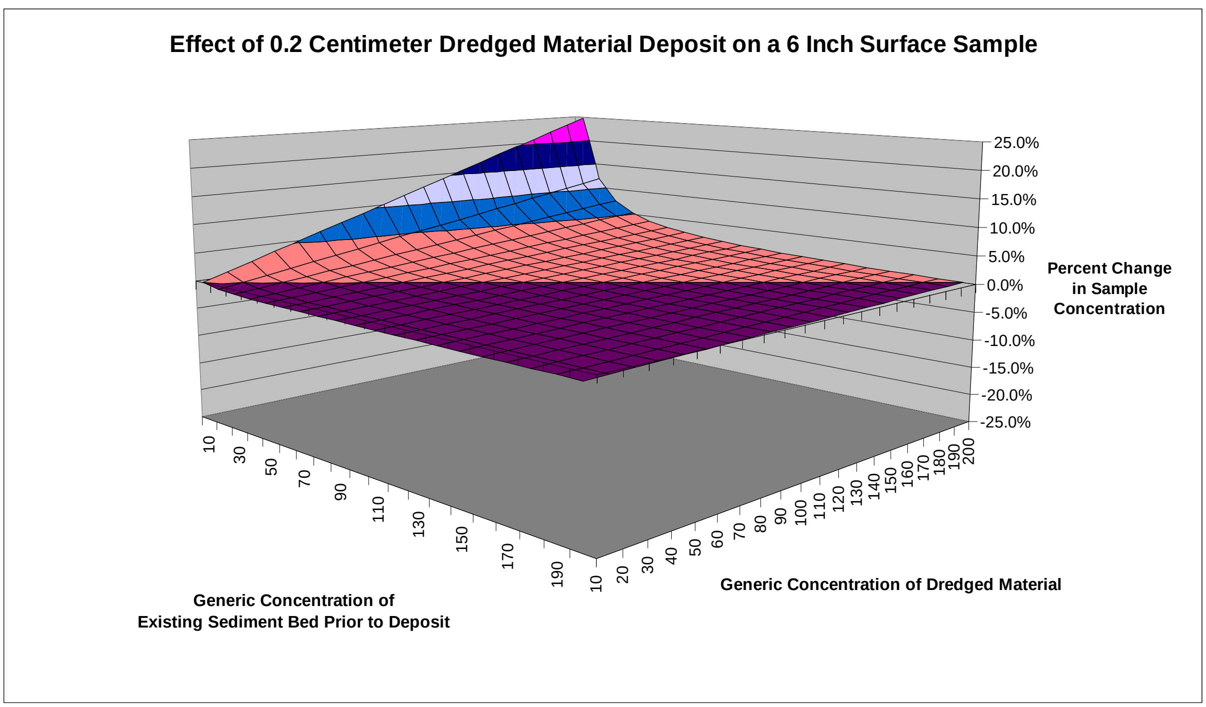


Figure 21. Effect of 0.2 cm Dredged Material Deposit upon Existing Sediment Bed

Argument's against the use of averaging and the need for additional data in the area east of the main channel leading into Newark Bay to support the evaluations made within the EA Amendment must be somewhat tempered by the fact that EPA in the Phase 1 data collection effort, which was planned as shown in Figure 22. below and was recently completed, had identified collecting only 6 additional sediment samples in the entire flats area east of the main channel in the southern portion of the bay where the dredging is occurring or planned. Given that the samples cover an area of, at most, one square foot each, and that this area is approximately 12 million square feet, the average nature of the conditions in this flats area must be an assumed condition within the RI/FS itself.

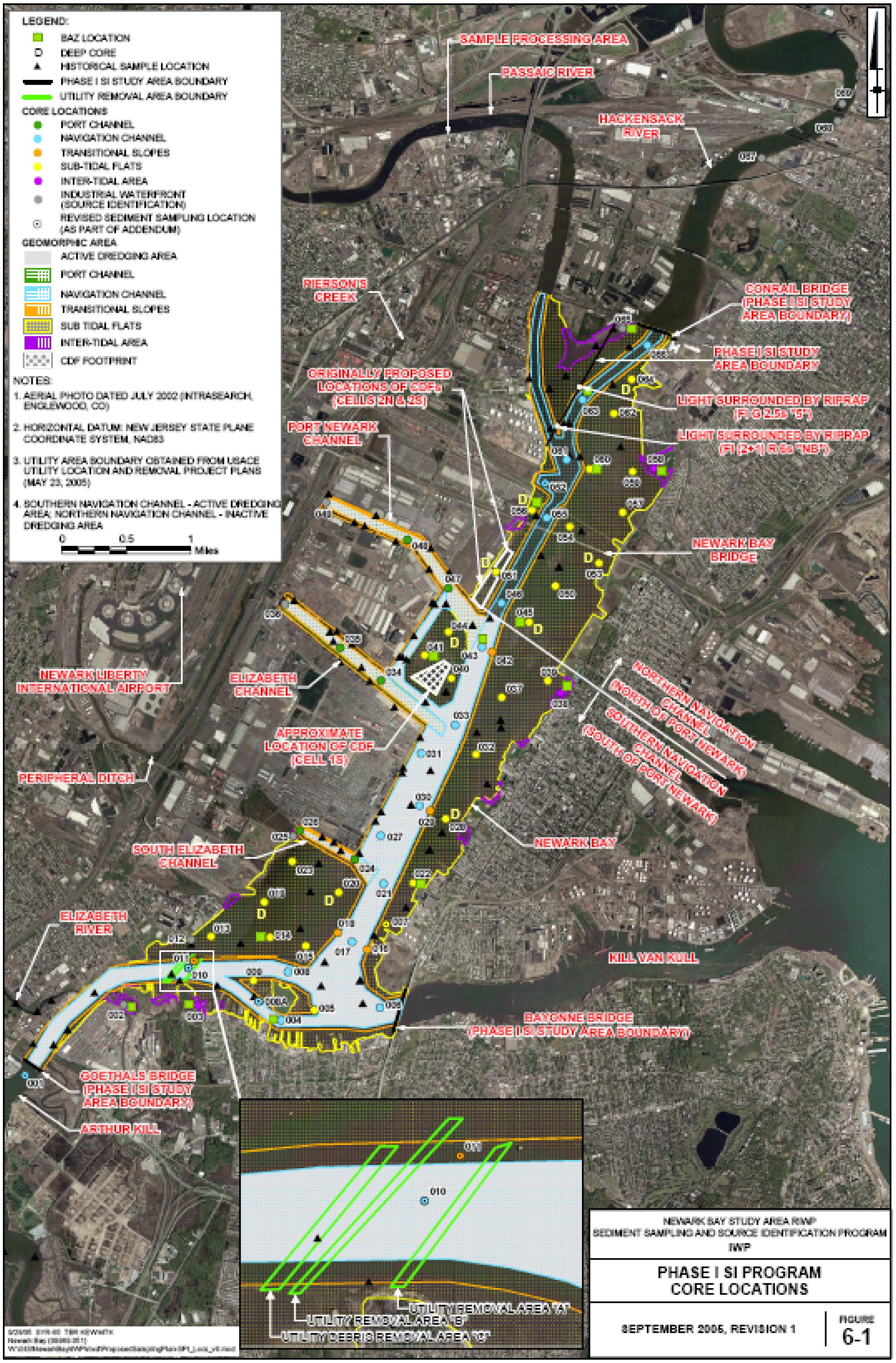


Figure 22. Planned Phase 1 sampling locations taken from the EPA/Tierra RIWP and entitled there as Figure 6-1, Sep 05