DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, NORTH ATLANTIC DIVISION
FORT HAMILTON MILITARY COMMUNITY
302 GENERAL LEE AVENUE
BROOKLYN NY 11252-6700

CENAD-PD-P

10 Feb 2020

MEMORANDUM FOR Commander, U.S. Army Corps of Engineers, New York District, 26 Federal Plaza, New York, NY 10278-0090

SUBJECT: Request for Approval of the New York and New Jersey Harbor Deepening Channel Improvements, New York and New Jersey, Navigation Feasibility Study Review Plan

1. Reference Memorandum, CENAN-DE, dated 13 Jan 2020, subject as above.

2. The Deep Draft Navigation Planning Center of Expertise of the South Atlantic Division (SAD) is the lead office to execute the referenced Review Plan. The Review Plan includes Independent External Peer Review.

3. The enclosed Review Plan is approved for execution and is subject to change as study circumstances require, consistent with study development under the Project Management Business Process. Subsequent revisions to this Review Plan or its execution require new written approval from NAD.

4. The point of contact is Mr. Larry Cocchieri, NAD Planning Program Manager at 347-370-4571 or Lawrence.J.Cocchieri@usace.army.mil.

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Encl

KAREN J. BAKER
Programs Director

DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, NEW YORK DISTRICT
JACOB K. JAVITS FEDERAL BUILDING
26 FEDERAL PLAZA
NEW YORK NEW YORK 10278-0090

JAN 13 2020

CENAN-DE

MEMORANDUM FOR Commander, U.S. Army Corps of Engineers, North Atlantic Division, (CENAD-PD-X/ Mr. Lawrence Cocchieri), 301 General Lee Avenue, Fort Hamilton Military Community, Brooklyn, NY 11252

SUBJECT: Request for Approval of the New York and New Jersey Harbor Deepening Channel Improvements, New York and New Jersey, Navigation Feasibility Study Review Plan

1. References:

a. Engineer Circular (EC) 1165-2-217, Review Policy for Civil Works, 20 FEB 18

b. EC 1105-2-412, Planning, Assuring Quality of Planning Models, 31 MAR 11

c. Engineer Regulation (ER) 1110-2-12, Quality Management, 30 SEP 06

2. The subject draft Review Plan is enclosed for your approval in accordance with Reference 1 (Enclosure 1). The Review Plan complies with all applicable policies and provides an adequate approach to District Quality Control and Agency Technical Review of the plan formulation, engineering and environmental analyses, and other required planning considerations.

3. The Review Plan was prepared in coordination with CENAD Planning Division Programs Directorate and the Deep Draft Navigation Planning Center of Expertise (DDNPCX). Ms. Kimberly Otto, DDNPCX, Review Manager, reviewed the Review Plan and recommends the plan for approval (Enclosure 2).

4. If you should require more information, my point of contact is Ms. Karen Baumert, Project Planner, at karen.a.baumert@usace.army.mil or 917-790-8608.

THOMAS D. ASBERY
COL, EN
Commanding

2 Encls
1. Review Plan
2. DDNPCX Endorsement

DEPARTMENT OF THE ARMY
US ARMY CORPS OF ENGINEERS
SOUTH ATLANTIC DIVISION
60 FORSYTH STREET SW, ROOM 10M15
ATLANTA, GA 30303-8801

REPLY TO
ATTENTION OF

CESAM-PD-D

4 December 2019

MEMORANDUM FOR Ms. Karen Baumert, CENAN-PL-FC, U.S. Army Corps of Engineers, New York District, 26 Federal Plaza, New York, New York 10278-0090

SUBJECT: Endorsement of Review Plan (RP), New York and New Jersey Harbor Deepening Channel Improvements, Integrated Feasibility Report and Environmental Impact Statement (EIS)

1. References.

a. Director of Civil Works Memorandum, 5 April 2019, Interim Guidance on Streamlining Independent External Peer Review (IEPR) for Improved Civil Works Product Delivery

b. Engineer Circular 1165-2-217, 20 February 2018, Review Policy for Civil Works

2. The subject document (Enclosure 1) has been presented to the Deep Draft Navigation Planning Center of Expertise (DDNPCX) for its review and endorsement in accordance with References 1.a. and 1.b.

3. The New York and New Jersey Deepening Channel Improvements study will evaluate harbor deepening and widening improvements. It is anticipated that initial construction and maintenance dredged sediments will either be placed in upland or open water sites, or used beneficially when possible. An EIS will be prepared.

4. The DDNPCX concurs with the level and scope of review identified and supported in the RP, including the determination that Type I IEPR is warranted. As documented, the estimated total project cost is greater than $200 million and an EIS is being prepared. It is noted, however, that the Governor of an affected state has not requested peer review by independent experts and the project is not considered controversial due to significant public dispute over the size, nature, effects, or environmental costs or benefits of the project. The RP provides a risk-informed rationale supporting the decision to perform Type I IEPR.

5. The RP was reviewed for technical sufficiency and policy compliance by the undersigned. The RP checklist that documents that review is provided as Enclosure 2.

6. The DDNPCX recommends the RP for approval by the Major Subordinate Command (MSC) Commander. Following approval, please provide the DDNPCX with a copy of the MSC Commander's Approval Memorandum and a link to where the RP is posted on the District website. Prior to posting, the names of individuals identified in the RP should be removed (RP Attachment).

7. Thank you for the opportunity to assist in the preparation of the RP. Please coordinate any review related efforts outlined in the RP with the undersigned at (251) 694-3842.

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Encls

KIMBERLY P. OTTO
Review Manager, DDNPCX

CF:
CENAN-PL-S (Couch)
CENAN-PP-C (Tumminello)
CENAN-PP-H (Gentile)
CESAD-PDP (Bush, Small)

REVIEW PLAN

3 December 2019

1. OVERVIEW

This review plan (RP) defines the scope and level of peer review for the following study:

- **Study Name:** New York and New Jersey Harbor Deepening Channel Improvements
- **Project Name:** New York and New Jersey Harbor (NYNJ)
- **P2 Number:** 472473
- **Decision Document Type:** Integrated Feasibility Report and Environmental Impact Statement (EIS)
- **Congressional Approval Required:** Yes
- **Project Type:** Single-Purpose Deep Draft Navigation
- **District:** New York
- **Major Subordinate Command (MSC):** North Atlantic Division
- **Review Management Organization (RMO):** Deep Draft Navigation Planning Center of Expertise (DDNPCX)
- **Review Plan Contacts:**
  - **District Contact:** Planner, 917-790-8608
  - **MSC Contact:** Policy and Legal Compliance Review Manager, 347-370-4653
  - **RMO Contact:** Review Manager, 251-694-3842

2. KEY REVIEW PLAN DATES

Action	Date - Actual[1]
RMO Endorsement of RP	Pending
MSC Approval of RP	Pending
IEPR Exclusion Approval	N/A
Has RP changed since PCX endorsement?	N/A
Last RP revision[2]	N/A
RP posted on District Website	Pending
Congressional notification[3]	Pending

[1]Date action occurred or 'pending' if not yet approved
[2]Enter 'none' if no updates have been made since approval
[3]Date RIT notified Congress of IEPR decisions

3. MILESTONE SCHEDULE

Action	Date - Scheduled	Date – Actual	Status – Complete?
Feasibility Cost Sharing Agreement Signed			Yes
Alternatives Milestone Meeting (AMM)	22 Oct 2019	22 Oct 2019	Yes
Tentatively Selected Plan (TSP)	25 Aug 2020		No
Release Draft Report to Public	26 Oct 2020		No
Agency Decision Milestone (ADM)	14 Apr 2021		No
Final Report Transmittal	31 Jan 2022		No
Chief's Report	20 Jun 2022		No

4. BACKGROUND

- **Date of Background Information:** November 2019

- **RP References:**
  - Engineer Circular (EC) 1165-2-217, Review Policy for Civil Works (CW), 20 February 2018
  - EC 1105-2-412, Assuring Quality of Planning Models, 31 March 2011
  - Engineer Regulation (ER) 1105-2-100, Planning Guidance Notebook, Appendix H, Policy Compliance Review and Approval of Decision Documents, Amendment #1, 20 November 2007
  - Chief's Memorandum, Delegation of Authority in Section 2034(a)(5)(A) of the Water Resources Development Act of 2007 (WRDA 2007), as amended (33 U.S.C. 2343), 8 January 2018
  - Director's Policy Memorandum (DPM) CW Programs 2018-05, Improving Efficiency and Effectiveness in U.S. Army Corps of Engineers (USACE) CW Project Delivery (Planning Phase and Planning Activities), 3 May 2018
  - Director of Civil Works (DCW) Memorandum, Delegation of Model Certification, 11 May 2018
  - DCW Memorandum, Revised Delegation of Authority in Section 2034(a)(5)(A) of WRDA 2007, as amended (33 U.S.C. 2343), 7 June 2018
  - Planning Bulletin (PB) 2018-01, Feasibility Study Guidelines, 26 September 2018
  - DPM 2019-01, Policy and Legal Compliance Review, 9 January 2019
  - DCW Memorandum, Revised Implementation Guidance for Section 1001 of the Water Resources Reform and Development Act of 2014, Vertical Integration and Acceleration of Studies as Amended by Section 1330(b) of WRDA 2018, 25 March 2019
  - DCW Memorandum, Interim Guidance on Streamlining IEPR for Improved CW Product Delivery, 5 April 2019
  - New York and New Jersey Harbor Deepening Channel Improvements Project Management Plan, Pending
  - District/MSC Quality Management Plan, Pending

- **Study Authority:** The original study was authorized by WRDA 1996 §435. Further, WRDA 1970 §216 states: "The Secretary of the Army, acting through the Chief of Engineers, is authorized to review the operation of projects the construction of which has been completed and which were constructed by the Corps of Engineers in the interest of navigation, flood control (flood damage reduction), water supply, and related purposes, when found advisable due to significantly changed physical or economic conditions, and to report, thereon to Congress with recommendations on the advisability of modifying the structures or their operations, and for improving the environment in the overall public interest."

- **Sponsor:** Port Authority of New York and New Jersey (PANYNJ)

- **SMART Planning Status:** This is a 3x3x3 compliant study currently in the post-AMM alternatives evaluation and analysis phase.

- **Project Area:** The study area is the existing 50 feet mean lower low water (MLLW) federal navigation channel and immediately surrounding areas in the NYNJ Harbor (Figure 1). The Port is situated along the northern portion of Atlantic Seaboard, approximately 270 miles north of Norfolk, Virginia, and 200 miles south of Boston, Massachusetts.

- **Problem Statement:** The purpose of channel improvements within NYNJ Harbor is to achieve transportation cost savings for vessels transiting study area channel segments. The existing channel depth requires containerships to light-load and face tide delays. As containerships with greater capacity and deeper sailing drafts replace the fleet currently calling NYNJ Harbor, depth-related transportation costs will increase. Without improvements, ships at NYNJ Harbor will not realize economies of scale afforded by the larger container ships projected to call in the future. Tide restrictions, light loading, or other operational inefficiencies will be compounded by the future fleet.

- **Study/Project Goals and Objectives:** The planning objective for the study is to achieve transportation cost savings thru increased economic efficiencies of vessels transiting study area channel segments at NYNJ Harbor over the 50-year period of analysis. The study goal is to determine if there is a technically feasible, economically justifiable, and environmentally acceptable recommendation for federal participation in a navigation improvement project for the NYNJ Harbor.

- **Description of Action:** NAN and NAD outlined the scope of the current study, focusing the analysis around the existing federal navigation channel in the NYNJ Harbor. Widening, deepening (up to 56 feet MLLW), and efficiency components, both structural and nonstructural, will be considered and/or evaluated. NAN's Dredged Material Management Plan was updated in 2008 and has a planning horizon out to 2065 to manage dredged material that will result from the project the study recommends; the beneficial reuse of dredged material will be used where possible and, as appropriate, upland and open water placement of dredged material will be used. An EIS will be prepared to document environmental impacts, specifically those to sturgeon, whales, air, and flats.

- **Federal Interest:** Deep draft navigation (DDN) is one of the U.S. Army Corps of Engineer's primary mission areas. 33 U.S.C. 540 states, "Federal investigations and improvements of rivers, harbors, and other waterways shall be under the jurisdiction of and shall be prosecuted by the Department of the Army..." Making channel improvements would yield National Economic Development benefits. Construction of the NYNJ Harbor Deepening Navigation Project was completed in 2016. In March 2018, an Initial Appraisal Report, in compliance with Section 216 of WRDA 1970 was completed to determine if there was potential Federal interest to undertake modifications to the completed project. The Initial Appraisal Report found "the accelerating expansion of the volume of trade that has taken place over the recent past has led to the design vessel [the Regina Maersk] in the New York and New Jersey Harbor Navigation Study being superseded in use in the PONYNJ much sooner than anticipated in the 1999 Study..."

- **Risk Identification:** This project has relatively low risk, considering that it is only the enhancement of existing elements of a federal navigation project to meet changing conditions. However, there are uncertainties as in any study, whether improvements are economically justified, environmentally acceptable, and technically feasible. Potential risks are similar to those found in other USACE DDN studies or projects, and are not expected to inhibit successful implementation of this project. The project will not be justified by life safety considerations and does not involve significant threat to human life.

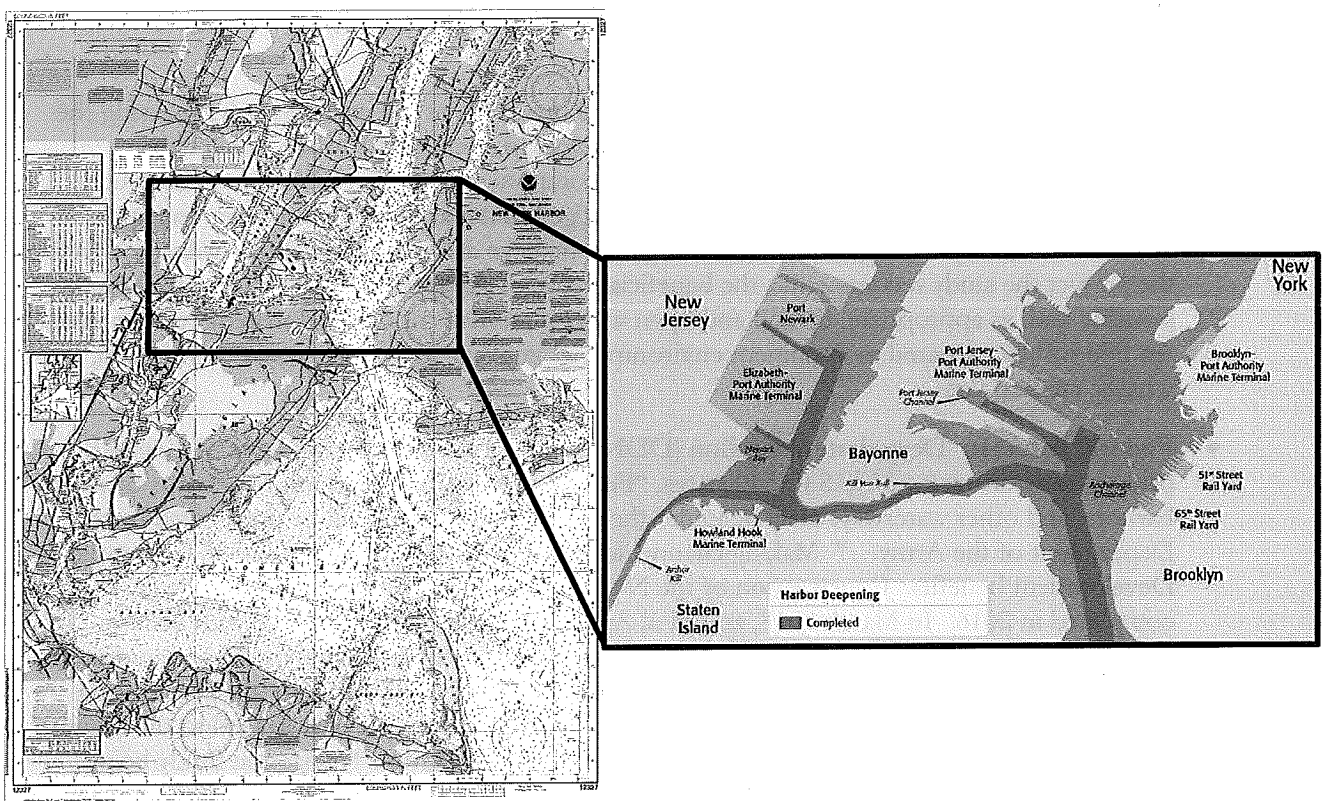

Figure 1: Study Area

5. FACTORS AFFECTING THE LEVELS OF REVIEW

A. Is it likely that part(s) of the study will be challenging (EC 1165-2-217, paragraph 7.a.(1))? No. It is not likely that the study will be challenging, as it is looking at improvements to a previously authorized and constructed project. There is an abundance of existing information and prior reports available for use in this study effort. The improvement measures are not expected to be technically challenging. The non-Federal sponsor, the PANYNJ, has requested and fully supports the study.

B. Provide a preliminary assessment of where the project risks are likely to occur and assess the magnitude of those risks (EC 1165-2-217, paragraph 7.a.(1)).
The study will take a risk-informed planning approach. This project is relatively low risk, considering that it is only the enhancement of existing elements of a Federal navigation project to meet changing conditions. All project and design risks not fully evaluated in the study will be further managed in Preconstruction Engineering and Design. Life safety is not a concern in this navigation study.

- Environmental and cultural resource impacts and constraints may be significant, depending on the recommended measures; mitigation measures may be costly. The resources most likely to be impacted by the components of each alternative being considered and require mitigation planning are shallow water habitat (Essential Fish Habitat) and Clean Air Act (CAA) General Conformity. It is being assumed that there are acceptable mitigation opportunities for impacts to regulated aquatic habitat in littoral habitat (in-kind and in-place OR out of kind and out of place). HDCI Marine Vessel Emission Reduction Program will provide enough offsets for the project. Resource agencies may allow some mitigation for impacts to flats via creation of shallow habitat in existing open water. If the assumption is incorrect, plans may not be environmentally acceptable and/or the cost of mitigation may exceed benefits of the project. This risk is moderate and appropriate contingencies will be included in the cost estimate.
- Existing bathymetric and geotechnical data are being used; use of existing data may impact the accuracy of design and cost estimates, specifically estimates beyond the footprint of the existing channel. This risk is moderate and appropriate contingencies will be included in the cost estimate.
- Material characterization and appropriate placement and maintaining structural and slope stability may be costly for a recommended plan. This risk is moderate and appropriate contingencies will be included in the cost estimate.

C. Is there a significant threat to human life associated with aspects of the study or with failure of the project or proposed project (Type I IEPR - EC 1165-2-217, paragraph 11.d(1)(a) and SAR - paragraph 12.h.)?
No. Channel improvements will be justified through a savings in transportation costs and will not be justified by life safety. There are no significant threats to human life associated with either construction of the proposed improvements, operation and maintenance of the proposed project, or with the project failure. Should the project not perform as expected, the impact would be a lower than expected benefit to NED, which does not impact human life and/or safety. Non-performance of the project would not affect the well-being of the general public and/or environmental, but may negatively affect transportation costs for commodities coming in through area facilities. There is no residual risk to account for in this project due the fact that the

project purposed does not address or directly affect human health and safety. This life safety assessment has been reviewed by the NAN Chief of Engineering and has his concurrence.

D. Is the estimated total cost of the project greater than $200 million (EC 1165-2-217, paragraph 11.d(1)(b))?
Specific costs are unknown at this time, however it is estimated that the tentatively selected/recommended plan will have a total project cost greater than $200 million.

E. Will the study/project require an environmental impact statement (EC 1165-2-217, paragraph 11.d(1)(b))? Yes; an Environmental Impact Statement will be prepared and integrated into the draft and final feasibility reports. An EIS will be prepared because there are environmental resources in the study area that may be impacted. The EIS will document environmental impacts, specifically those to sturgeon, whales, air, and flats.

F. Has the Governor of an affected state requested a peer review by independent experts (EC 1165-2-217, paragraph 11.d(1)(c))? There has not been a request for independent peer review by the Governors of either New York or New Jersey.

G. Has the Chief of Engineers determined that the project study is controversial due to significant public dispute over the size, nature, or effects of the project or the economic or environmental costs or benefits of the project (EC 1165-2-217, paragraph 11.d(1)(d))?
No, the study/project is not likely to involve significant public dispute as to its size, nature, or effects of the project or its economic or environmental costs or benefits as improvements are proposed to an existing port/channel.

H. Is the study/project likely to involve significant public dispute as to the project's size, nature, or effects (EC 1165-2-217, paragraph 11.d(1)(e))?
The study/project is not likely to involve significant public dispute as to its size, nature, or effects of the project due to the fact that it is only an evaluation of modifications to an existing feature of the authorized and constructed project. The improvements being considered would only be recommended if economically justified, environmentally acceptable, and technically feasible. The identification and evaluation of measures and components, further described below, were informed by discussions with the Sandy Hook pilots, Maritime Association, U.S. Coast Guard, and National Oceanic and Atmospheric Administration at a Steering Committee meeting on August 7, 2019. An interagency meeting with the environmental cooperating agencies was held on November 21, 2019 to present the study to the participants and receive initial feedback and input.

I. Is the study/project likely to involve significant public dispute as to the economic or environmental cost or benefit of the project (EC 1165-2-217, paragraph 11.d(1)(f))?
The study/project is not likely to involve significant public dispute as to the economic cost or benefit of the project. The non-federal sponsor and the maritime community supports the project as improvements would increase the economic efficiency of vessel/port operations thus providing benefits to the nation through reduced transportation costs. USACE expects interest from agencies and the public regarding environmental considerations; through early and often communication, USACE expects concerns will be minimized. The improvements being considered would only be recommended if economically justified, environmentally acceptable, and technically feasible.

J. Is the information in the decision document or anticipated project design likely to contain influential scientific information or be a highly influential scientific assessment – i.e., be based on novel methods, involve innovative materials or techniques, present complex challenges for interpretation, contain precedent-setting methods or models, or present conclusions that are likely to change prevailing practices (Type I IEPR - EC 1165-2-217, paragraph 11.d(1)(g); SAR paragraph 12.i.(1); and paragraph 15.d)?
No; the evaluation of navigation improvements is not likely to be based on novel methods, involve the use of innovative materials or techniques, present complex challenges for interpretation, contain precedent-setting methods or models, or present conclusions that are likely to change prevailing practices. The project will involve traditional methods of dredging and placement of dredged material. Standard engineering, economic, and environmental information and analyses will be used.

K. Does/will the study/project have significant interagency interest (EC 1165-2-217, paragraph 7.f(1))?
The project is expected to have significant interagency interest. During development of the EIS and in accordance with the requirements of all applicable Federal environmental laws, NAN will coordinate with relevant state and Federal resource agencies to address such interest. A scoping meeting will be held in Spring 2020 to solicit public comment and this section will be updated after that meeting.

L. Are there any other circumstances that would lead the Chief of Engineers to determine Type I IEPR is warranted (EC 1165-2-217, paragraph 11.d(1)(h))?
The estimated total cost of the project, including mitigation costs, is greater than $200 million.

M. Is the project expected to have more than negligible adverse impacts on scarce or unique tribal, cultural, or historic resources (EC 1165-2-217, paragraph 11.d(4)(a))?
Stating the significance of impacts would be predecisional for NEPA at this early phase in the study. Based on the previous New York New Jersey Harbor Deepening Project, National Register Eligible shipwrecks are likely to be located within the potential widening areas. Adverse effects to National Register eligible properties will need to be mitigated in accordance with the National Historic Preservation Act. The majority of improvement measures being considered are within the existing Federal navigation channel and underwater areas. The improvements being considered would only be recommended if economically justified, environmentally acceptable, and technically feasible. The recommended plan would be coordinated and in compliance with appropriate agencies. This will be updated as more information becomes available.

N. Is the project expected to have substantial adverse impacts on fish and wildlife species and their habitat prior to the implementation of mitigation measures (EC 1165-2-217, paragraph 11.d(4)(a))? Stating the significance of impacts would be predecisional for NEPA at this early phase in the study. The majority of improvement measures being considered are within the existing federal navigation channel. Any recommendation made will be environmentally acceptable and ensure compliance with environmental laws and regulations. The recommended plan would be coordinated and in compliance with appropriate agencies. This will be updated as more information becomes available.

O. Is the project expected to have, before mitigation measures, more than a negligible adverse impact on an endangered or threatened species or their designated critical habitat (EC 1165-2-217, paragraph 11.d(4)(a))?
Stating the significance of impacts would be predecisional for NEPA at this early phase in the study. The majority of improvement measures being considered are within the existing federal navigation channel. Any recommendation made will be environmentally acceptable and ensure compliance with environmental laws and regulations. ESA coordination with the National Oceanic and Atmospheric Administration will be required for Atlantic sturgeon, sea turtles, marine mammals, and their habitats, as designated. The cooperating agency request letter was sent October 7, 2019. An interagency meeting with the environmental cooperating agencies was held on November 19, 2019 to present the study to the participants and receive initial feedback and input. This will be updated as more information becomes available.

P. Does the project study pertain to an activity for which there is ample experience within the USACE and industry to treat the activity as being routine (EC 1165-2-217, paragraph 11.d(4)(b))?
Yes, the final integrated feasibility report and supporting documentation will contain standard engineering, economic, and environmental analyses and information. The project is for dredging and upland and open water placement of dredged material, for which there is ample experience within the USACE and industry to be considered routine. Novel methods will not be utilized, and methods, models, or conclusions will not be precedent setting or likely to change policy decisions.

Q. Does the project study have minimal life safety risk (EC 1165-2-217, paragraph 11.d(4)(b))?
The project will not be justified by life safety considerations and does not involve a significant threat to human life. The project involves negligible life safety risk; standard dredging techniques are proposed consistent with those used in the authorized project for channel maintenance. No unique or special equipment that would introduce uncertainties or additional risk to life safety is needed to complete proposed project construction.

R. Does the project design require redundancy, resiliency, and/or robustness (EC 1165-2-217, paragraph 12.i.(2))?
The project design is not anticipated to require redundancy, resiliency and/or robustness, unique construction sequencing, or a reduced or overlapping design construction schedule as project design will follow standard dredging and placement techniques used throughout USACE and industry.

S. Will the project have unique construction sequencing or a reduced or overlapping design construction schedule (e.g., significant project features will be accomplished using the Design-Build or Early Contractor Involvement delivery systems) (EC 1165-2-217, paragraph 12.i.(3))?
No. The project design will follow standard dredging and placement methodologies typically conducted by the District for navigation projects. As such the project design is not anticipated to require redundancy, resiliency, and/or robustness, unique construction sequencing, or a reduced or overlapping design construction schedule.

6. REVIEW EXECUTION PLAN

This RP section provides a general description of each level of review and identifies the reviews anticipated for this study.

A. Types of Review

1) **District Quality Control (DQC).** DQC is an internal review process of basic science and engineering work products focused on fulfilling the project quality requirements of the project management plan. All decision documents (including data, analyses, environmental compliance documents, etc.) undergo DQC review. Additionally, DQC of milestone submittals is required (PB 2018-01, Feasibility Study Milestones).

2) **Agency Technical Review (ATR).** ATR is performed to assess whether study/project analyses are technically correct and comply with USACE guidance and whether documentation explains the analyses and results in a clear manner. Further, the ATR team will ensure that proper and effective DQC has been performed (as assessment of which will be documented in the ATR report) and will ensure that the product is consistent with established criteria, guidance, procedures, and policy. If significant life safety issues are involved in a study or project, a safety assurance review should be conducted during ATR. At a minimum, ATR of the draft and final decision documents and supporting analyses is required (EC 1165-2-217, paragraph 9.i.(3)); however, targeted reviews may be scheduled as needed.

3) **Independent External Peer Review.** Type I IEPR may be required for decision documents under certain circumstances. IEPR is the most independent level of review and is applied in cases that meet criteria where the risk and magnitude of the proposed project are such that a critical examination by a qualified team outside of USACE is warranted. A risk-informed decision is made as to whether Type I IEPR is appropriate. If the District anticipates requesting an exclusion from Type I IEPR, that effort should be coordinated with the RMO for assessment prior to submitting to the MSC for approval. Should IEPR be required, the RMO should be contacted at least three months in advance of the anticipated start of the concurrent review period to allow sufficient time to obtain contract services. If required, Type I IEPR will be managed by an Outside Eligible Organization, external to USACE. Neither the public nor scientific or professional societies would be asked to nominate potential external peer reviewers.

4) **Cost Engineering Review**. All decision documents will be coordinated with the Cost Engineering Mandatory Center of Expertise (MCX). The MCX will provide the cost engineering expertise needed on the ATR team and will provide certification of cost estimates. The RMO is responsible for coordinating with the MCX for cost reviews. Cost reviews may occur as part of the draft/final report ATRs but the schedule for specific reviews may also vary. Accordingly, the PDT should coordinate closely review related needs with both the MCX and RMO.

5) **Model Review and Approval/Certification.** EC 1105-2-412 established the process and requirements for ensuring the quality of planning models. The EC mandates use of certified or approved planning models for all planning activities to ensure that planning products are technically and theoretically sound, compliant with USACE policy, computationally accurate, and based on reasonable assumptions regarding the availability of data, transparent, and described in sufficient detail to address any limitations of the model or its use.

6) **Policy and Legal Compliance Reviews (P&LCRs).** All decision documents will be reviewed throughout the study process for compliance with law and policy. ER 1105-2-100, Appendix H, and DPM CW/DCW memos, provide guidance on policy and legal compliance reviews. These reviews culminate in determination whether report recommendations, supporting analyses, and coordination comply with law and policy and whether the decision document warrants approval or further recommendation to higher authority by the home MSC Commander.

7) **Public Review.** The home District will post the RMO endorsed and MSC approved RP on the District's public website. Internet posting of the RP provides opportunity for the public to comment on that document. It is not considered a formal comment period, and there is no set timeframe for public comment. The PDT should consider any comments received and determine if RP revisions are necessary. During the public comment period, the public will also be provided with the opportunity to review and comment on the draft and final reports. Should IEPR be required, public comments will be provided to the IEPR panel for consideration.

B. Anticipated Project Reviews and Estimated Costs

Table 1 provides the estimated schedules and costs for reviews anticipated for this study.

Table 1: New York and New Jersey Harbor Channel Deepening – Anticipated Reviews

Products to undergo Review	Review Level	Start Date	End Date	Cost	Complete
Pre-TSP Milestone Submittals	DQC	3 August 2020	14 August 2020	$5,000	No
Draft Feasibility Report and EIS[1]	DQC	8 September 2020	5 October 2020	$35,000	No
	ATR	26 October 2020	28 December 2020	$55,000	No
	Type I IEPR	26 October 2020	28 December 2020	$80-$120,000/ $33,000[2]	No
	P&LCR	26 October 2020	28 December 2020	N/A	No
Final Feasibility Report and EIS[3]	DQC	15 October 2021	18 November 2021	$20,000	No
	ATR	19 November 2021	23 December 2021	$40,000	No
	P&LCR	31 January 2022	11 April 2022	N/A	No
In-kind Products[4]	N/A	-	-	-	-

[1] Estimated cost for Draft and Final Report ATRs does not include the cost of ATR Team Lead participation in milestone meetings or other engagement/coordination beyond that directly related with those ATRs. The estimated cost for ATR of the Draft Report is based upon the following assumptions:

- ATR Team Lead – 32 hours, $125/hour
- ATR Team – 11 Technical Disciplines, 40 hours/discipline, average $125/hour
- RMO - 40 hours, $143/hour

[2] $80-$120,000 estimated contract cost (100% Federal); $33,000 USACE RMO/contracting cost (cost shared)

[3] The estimated cost for ATR of the Final Report is based upon the following assumptions:

- ATR Team Lead – 32 hours, $125/hour
- ATR Team – 10 Technical Disciplines, 32 hours/discipline- average, average $125/hour
- RMO – 32 hours, $143/hour

[4] Products and analyses provided by non-Federal sponsors as in-kind services are subject to DQC, ATR, and IEPR. However, no in-kind products or analyses will be developed by the non-Federal sponsor.

C. District Quality Control

The home district shall manage DQC and will appoint a DQC Lead to manage the local review (see EC 1165-2-217, section 8.a.1). The DQC Lead should prepare a DQC Plan and provide it to the RMO and MSC prior to starting DQC reviews.

1) Review Team Expertise. Table 2 identifies the required expertise for the DQC team.

Table 2: Required DQC Expertise

DQC Team Disciplines	Expertise Required
DQC Lead	A senior professional with extensive experience preparing Civil Works decision documents and conducting DQC. The lead may also serve as a reviewer for a specific discipline (such as planning, economics, environmental resources, etc).
Planning	The Planning reviewer should be a senior water resources planner with experience in formulation of DDN studies.
Economics[5]	The economics reviewer should be a senior economist/water resources planner with experience in DDN studies and be familiar with economic models identified in Table 5, general study requirements, and the plan formulation process.
Environmental Resources and Cultural Resources	The environmental reviewer should have expertise in the environmental and cultural impacts associated with navigation projects and dredging as well as extensive knowledge of estuarine and coastal ecology. The reviewer should also be familiar with the environmental coordination and NEPA requirements for DDN projects.
Hydrology and Hydraulic Engineering	The hydrologic and hydraulic engineering reviewer should be an expert in the field of hydrology and have a thorough understanding of open channel dynamics and have experience in design of DDN studies/projects and dredged material placement requirements. The reviewer should also be familiar with computer modeling techniques that will be used in the study (Table 6).
Civil/Design Engineering	The civil/design engineering reviewer should be an expert in the field of channel design, have a thorough understanding of open channel dynamics, and have experience in DDN studies/projects and dredged material placement requirements.
Geotechnical Engineering	The geotechnical engineering reviewer should be an expert in the field and have an understanding of the behavior of soils, site characterization, material management, slope stability, open channel dynamics, have experience in DDN studies/projects and with the models identified in Table 6.
Cost Engineering	The cost engineering reviewer should be an expert in the field, be certified by the Cost Engineering MCX, and have experience in DDN studies/projects.
Construction/Operations	The operations reviewer should have expertise in the design, construction, operation, and maintenance of DDN studies/projects.
Real Estate	The real estate reviewer should have expertise in the real estate requirements of DDN projects.

[5] The economics DQC team member will be identified by the DDNPCX (OPORD 2012-15).

2) **Documentation of DQC**. Quality Control should be performed continuously throughout the study. A specific certification of DQC completion is required at the draft and final report stages. Documentation of DQC should follow the District Quality Manual and the MSC Quality Management Plan. DrChecks software will be used to document DQC review comments, responses, and issue resolution. An example DQC Certification statement is provided in EC 1165-2-217.

   Documentation of completed DQC will be provided to the MSC, RMO and ATR Team leader prior to initiating an ATR. The ATR team will examine DQC records and comment in the ATR report on the adequacy of the DQC effort. Missing or inadequate DQC documentation can result in delays to the start of other reviews (see EC 1165-2-217, Section 9).

D. Agency Technical Review

ATR will be performed on the draft and final decision documents and supporting analyses (EC 1165-2-217, paragraph 9.i.(3)). The RMO will manage the ATR. ATR will be performed by a qualified team from outside the home district that is not involved in the day-to-day production of the project/product. ATR will be performed by a team whose members are certified or approved by their respective Communities of Practice (CoPs) to perform reviews. The RMO will identify an ATR lead and ATR team members. Neither the home District nor the MSC will nominate review team members. The ATR team lead will be from outside the home MSC. The ATR team lead is expected to participate in the study's milestone meetings (PB 2018-01), the cost of which is not included in the estimates provided in Table 1.

1) **Review Team Expertise.** Table 3 identifies the disciplines and ATR team expertise required for study efforts. Multiple disciplines may be covered by one reviewer.

Table 3: Required ATR Team Expertise

ATR Team Disciplines	Expertise Required
ATR Lead	A senior professional with extensive experience preparing Civil Works decision documents and conducting ATR. The lead should have the skills to manage a virtual team through an ATR. The lead may also serve as a reviewer for a specific discipline (such as planning, economics, environmental resources, etc.).
Planning	The planning reviewer should be a senior water resources planner with experience in leading a team through a DDN channel improvement study and analysis of dredged material placement requirements.
Economics	The economics reviewer should be a senior DDN economist with experience in performing economic evaluations for channel deepening /widening projects. Experience with evaluating containerized trade is required. Two economics reviewers will be required, one to review the economics appendix and the other to review inputs/outputs of economic models identified in Table 5.
Environmental Resources	The environmental reviewer should have expertise in assessing the environmental impacts associated with navigation improvement projects and dredging as well as extensive knowledge of estuarine and coastal ecology. The reviewer should also be familiar with the environmental coordination and NEPA requirements for DDN channel improvement projects and dredged material placement requirements.

Cultural Resources	The cultural resources reviewer should have expertise in evaluating the impacts associated with DDN channel improvement and dredging projects as well as extensive knowledge of underwater archaeology. The reviewer should also be familiar with the environmental coordination and NEPA/ NHPA requirements for DDN projects.
Hydrology, Hydraulics & Coastal (HH&C) Engineering	The HH&C engineering reviewer should be an expert in the field and have a thorough understanding of open channel dynamics, channel design, and dredged material placement requirements. The reviewer must be familiar with the application of USACE risk and uncertainty analyses and sea level rise, sedimentation, and water quality evaluations. The reviewer should also be familiar with computer modeling techniques that will be used in the study (Table 6).
Geologist /Geotechnical Engineer	The reviewer should be an expert in the field and DDN channel improvement projects, including the behavior of soils, site characterization, material management, slope stability, channel design, dredged material placement requirements, and the geotechnical models identified in Table 6.
Cost Engineering	The cost engineering reviewer identified by the MCX should be an expert in the field, be certified by the Cost Engineering MCX, have experience in DDN studies/projects and dredged material placement requirements, and have expertise with the cost engineering models identified in Table 6.
Operations	The operations reviewer should have expertise in the design, construction, operation, and maintenance of DDN studies/projects.
Real Estate	The real estate reviewer should have expertise in the real estate requirements of DDN projects.
Climate Preparedness and Resilience CoP/HH&C Climate Reviewer	A member of the Climate Preparedness and Resiliency Community of Practice (CoP) or an HH&C Climate certified reviewer will participate in the ATR review.

2) **Documentation of ATR.** DrChecks will be used to document all ATR comments, responses and resolutions. Comments should be limited to those needed to ensure product adequacy. If a concern cannot be resolved by the ATR team and PDT, it will be elevated to the vertical team for resolution using the EC 1165-2-217 issue resolution process. Concerns can be closed in DrChecks by noting the concern has been elevated for resolution. The ATR Lead will prepare a Statement of Technical Review (see EC 1165-2-217, Section 9), for the draft and final reports, certifying that review issues have been resolved or elevated. ATR may be certified when all concerns are resolved or referred to the vertical team and the ATR documentation is complete.

E. Independent External Peer Review

1) **Decision on Type I IEPR.** Type I IEPR is managed outside of the USACE and conducted on studies. Type I IEPR panels assess the adequacy and acceptability of the economic and environmental assumptions and projections, project evaluation data, economic analysis, environmental analyses, engineering analyses, formulation of alternative plans, methods for integrating risk and uncertainty, models used in the evaluation of environmental impacts of proposed projects, and biological opinions of the project study.

Based upon the criteria identified in the 05 April 2019 DCW memorandum and the scope of the study, the PDT's risk informed assessment is that Type I IEPR will be required as the estimated total cost of the project will likely be greater than $200 million, which exceeds the mandatory cost trigger, and an EIS will be prepared.

- **Products to Undergo Type I IEPR.** The full draft report will undergo IEPR.

- **Required Type I IEPR Panel Expertise.** IEPR Panels will consist of independent, recognized experts from outside of the USACE in disciplines representing a balance of areas of expertise suitable for the review being conducted. Table 4 lists the required panel expertise.

Table 4: Required Type I IEPR Panel Expertise

IEPR Panel Member Disciplines	Expertise Required
Economics	The Review Panel member must be from academia, a public agency, a non-governmental entity, or an Architect-Engineer (A-E) or consulting firm with a minimum of 15 years demonstrated experience in performing economic evaluations for DDN projects. The panel member must have at least a bachelor's degree in economics. The economics Panel member must have demonstrated experience in applying USACE procedures and standards for DDN economic analyses and in formulating and evaluating alternative plans for those projects. Experience with tools employed for economic analysis, risk analysis, and trade/fleet forecasts is required. Active participation in related professional societies is encouraged.
Environmental	The Review Panel member must be a scientist from academia, a public agency, a non-governmental entity, or an A-E or consulting firm with 15 years of demonstrated experience directly related to water resources environmental evaluations and NEPA compliance for DDN channel improvement, dredged material management projects, and cultural resources assessments. The panel member should have a master of science (M.S.) degree or higher in a related field. The panel member should be an expert in compliance requirements of environmental laws, policies, and regulations, including the Fish and Wildlife Coordination Act and the Endangered Species Act.
HH&C Engineer	The panel member should be a Registered Professional Engineer from academia, a public agency, or an A-E or consulting firm with a MS degree in coastal or hydraulic engineering. The hydraulic/coastal engineering review panel member should have 15 years of demonstrated experience in DDN channel design and have expertise in the field of coastal hydraulics and dredged material placement. The hydraulic/coastal engineering reviewer must be familiar with the application of USACE risk and uncertainty analyses and coastal engineering requirements for feasibility studies (including channel design and effects of navigation channels on currents, sea level rise, sedimentation, and water quality). The Reviewer should be familiar with standard USACE HH&C models and have 5-10 years of

	experience working with numerical modeling applications for navigation projects.
Plan Formulation	The planner selected as a Review Panel member should be from academia, a public agency, a non-governmental entity, or an A-E or consulting firm with a minimum of 10 years demonstrated experience as a water resources planner for DDN channel improvement projects and with a M.S. degree in a related field. The Review Panel member must have demonstrated experience applying USACE plan formulation processes, procedures, and standards to DDN channel improvement projects and dredged material management evaluations and recommendations.
Geologist / Geotechnical Engineer	The Civil Engineer/Design panel member should be a registered professional engineer with a minimum 10 years' experience in design/evaluation of DDN channel improvement projects including assessment of the behavior of soils, site characterization, material management, slope stability, channel design, and dredged material placement requirements. The reviewer should have a M.S. or higher in engineering or a related field and actively participate in professional engineering societies/organizations.

- **Documentation of Type I IEPR.** The OEO will submit a final Review Report no later than 60 days after the end of the draft report public comment period. Upon RMO acceptance, the RIT will post the Final IEPR Report on the USACE public website. USACE shall consider all recommendations in the Final IEPR Report and prepare evaluator responses for all findings adopted or not adopted. Evaluator responses will become the basis of the Agency Response. The final decision document will include an appendix which contains the Final IEPR Report and Agency Response. Please consult EC 1165-2-217 for a detailed explanation of the Type I IEPR process, including public notification requirements.

2) **Decision on Type II IEPR.** Type II IEPR, Safety Assurance Review, is managed outside of the USACE and is performed on design and construction activities for any project where potential hazards pose a significant threat to human life. For Type II IEPRs, a panel is convened to review the design and construction activities before construction begins and periodically thereafter until construction activities are completed.

   As documented in Section 5 of this RP, the PDT has assessed this single purpose DDN project and determined that it DOES NOT meet the criteria for conducting Type II IEPR:

   - The Federal action is not justified by life safety and failure of the project will not pose a significant threat to human life.

   - The project does not involve the use of innovative materials or techniques where the engineering is based on novel methods; it does not present complex challenges for interpretations; it does not contain precedent-setting methods or models; and it does not present conclusions that are likely to change prevailing practices. Proposed improvements are to an existing Federal navigation project. Construction and maintenance techniques have

been standardized and no new techniques are expected to be utilized for design and construction activities.

- The project design does not require redundancy, resiliency, or robustness as the design of navigation improvements at the harbor will be based upon previously developed and utilized construction techniques which do not require redundancy, resiliency, and/or robustness.

- The project does not have unique construction sequencing or a reduced or overlapping design construction schedule.

F. Model Certification Or Approval

EC 1105-2-412 mandates the use of certified or approved models for all planning activities to ensure the models are technically and theoretically sound, compliant with USACE policy, computationally accurate, and based on reasonable assumptions. Planning models are any models and analytical tools used to define water resources management problems and opportunities, to formulate potential alternatives to address the problems and take advantage of the opportunities, to evaluate potential effects of alternatives and to support decision making. The use of a certified/approved planning model does not constitute technical review of a planning product. The selection and application of the model and the input and output data is the responsibility of the users and is subject to DQC, ATR, and IEPR.

The following planning models may be used to develop the decision document.

Table 5: Planning Models

Model Name and Version	Brief Model Description and How It Will Be Used in the Study	Certification / Approval
HarborSym 1.5.8.3 (Economics)	HarborSym is a discrete event Monte-Carlo simulation model designed to facilitate economic analyses of proposed navigation improvement projects in coastal harbors. Incorporating risk and uncertainty, the model will be used to estimate transportation cost savings (benefits) attributable to fleet and loading changes under future with project conditions.	Certified
Regional Economic System (RECONS) (Economics)	RECONS is a regional economic impact modeling tool that estimates jobs, income, and sales associated with Corps Civil Works spending and additional economic activities. The model will be used to estimate the regional economic impacts of project implementation.	Certified

EC 1105-2-412 does not cover engineering models used in planning. The responsible use of well-known and proven USACE developed and commercial engineering software will continue. The professional practice of documenting the application of the software and modeling results will be followed. The USACE Scientific and Engineering Technology Initiative has identified many engineering models as preferred or acceptable for use in studies. These models should be used when appropriate. The selection and application of the model and the input and output data is still the responsibility of the users and is subject to DQC, ATR, and IEPR. The following models may be used to develop the decision document.

Table 6: Engineering Models

Model Name and Version	Brief Model Description and How It Will Be Used in the Study	Approval Status
ERDC Ship/Tow (HH&C)	The Ship/Tow Simulator features two bridges set up for real-time ship maneuvering, and were specifically developed for evaluating navigation channel designs, modifications, and safety issues. Located at ERDC, Coastal and Hydraulics Laboratory, the model portrays currents, wind and wave conditions, shallow water effects, bank forces, ship handling, ship to ship interaction, fender forces, anchor forces, and tug assistance.	Allowed
SLOPE/W (Geotech)	SLOPE/W is a two-dimensional FEM (Finite Element Method) software used to analyze slope stability based on user's input of soil parameters	Allowed
Geotechnical Factors in Dredgeability (DREDGABL) (Geotech)	Program used for scoping or conceptual level applications where the purpose is to determine if a certain type of dredge has the general potential to become a viable equipment alternative. It will be used to evaluate the suitability of mechanical dredging methods to sediments based on user's input of soil parameters.	TBD – in contact with ERDC
Microcomputer Aided Cost Engineering System (MCACES), MII (Cost Engineering)	MCACES is the cost estimating software program tools used by cost engineering to develop and prepare Class 3 CW cost estimates.	CW Cost Engineering MCX mandatory
Cost Schedule Risk Analysis (CSRA) (Cost Engineering)	Cost risk analyses identify the amount of contingency that must be added to a project cost estimate and define the high risk drivers. The analyses will include a narrative identifying the risks or uncertainties. During the alternatives evaluation, the PDT will assist the cost engineer in defining confidence/risk levels associated with the project features within the abbreviated risk analysis. For the Class 3 estimate, an evaluation of risk will be performed using Crystal Ball CSRA.	CW Cost Engineering MCX mandatory
Total Project Cost Summary (TPCS) (Cost Engineering)	The TPCS is the required cost estimated document that will be submitted for either division or Headquarters, USACE (HQUSACE) approval. The total project cost for each CW project includes all Federal and authorized non-Federal costs represented by the CW Work Breakdown Structure features and respective estimates and schedules, including the lands and damages, relocations, project construction cost, construction schedules, construction contingencies, planning and engineering costs, design contingencies, construction management costs, and management contingencies.	CW Cost Engineering MCX mandatory
Corps of Engineers Dredge Estimating Program (CEDEP) (Cost Engineering)	CEDEP is the required software program that will be used for dredging estimates using floating plants. CEDEP contains a narrative documenting reasons for decisions and sections made by the cost engineer. Software distribution is restricted as it is considered proprietary to the Government.	CW Cost Engineering MCX mandatory

G. Policy And Legal Compliance Reviews

In accordance with DPM CW 2018-05, P&LCRs for draft and final planning decision documents are delegated to the MSC responsible for the execution of the study.

With input from MSC and HQUSACE functional leaders and through collaboration with the Chief of Office of Water Project Review (OWPR), the MSC Chief of Planning and Policy is responsible for establishing a competent interdisciplinary P&LCR team (DPM 2019-01). The composition of the policy review team will be drawn from HQUSACE, the MSC, the Planning Center of Expertise (PCX), and other review resources as needed. The identification of Counsel Members will follow the procedures set forth by the HQUSACE Chief Counsel, as coordinated by HQUSACE and MSC Counsel functional leaders. The MSC Chief of Planning and Policy and the Chief of OWPR will collaborate to identify and endorse a P&LCR Manager from among the P&LCR team identified for the study. The manager may be a MSC, PCX, or HQUSACE employee. The team is identified in Attachment 1 of this RP.

The P&LCR team will:

- Provide advice and support to the PDT and decision makers at the District, MSC, HQUSACE, and Assistant Secretary of the Army for CW levels.
- Engage at both the MSC and HQUSACE levels, ensuring that the vertical teaming aspect of SMART planning is maintained.
- Help guide PDTs through project development and the completion of policy and legally compliant documents, identifying policy and legal issues as early as possible such that issues can be addressed while minimizing impacts to study and project costs and schedules.
- Provide impartial and unbiased recommendations, advice, and support to decision makers.

ATTACHMENT 1: TEAM ROSTERS

PROJECT DELIVERY TEAM			
Name	Office	Position	Phone Number
Karen Baumert	CENAN-PL-FC	Plan Formulator	917-790-8608
Matthew Cosby	CENAN-EX	Project Manager	917-790-8080
Steven Weinberg	CENAN-EN-MC	Supervisory Technical Manager	917-790- 8391
Jamal Sulayman	CENAN-EN-M	Technical Manager	917-790-8216
Gail Woolley	CENAN-EN-H	Engineer	917-790-8246
Julie McGuire	DDNPCX	Economist	251-690-2607
Caitlin Bryant	DDNPCX	Economist	251-694-3884
Jesse Miller	CENAN-PL-EC	Biologist	917-790-8604
Catherine Alcoba	CENAN-PL-EC	Supervisory Biologist	917-790-8216
Jenine Gallo	CENAN-PL-E	Regional Technical Specialist- Wildlife Biologist	917-790-8617
Richard Nugent	CENAN-PL-F	Plan Formulator / District Economist	917-790-8615
Jong Hee Kim	CENAN-EN-D	Geotechnical Engineer	917-790-8337
Christopher Dols	CENAN-EN-C	Cost Engineer	917-790-8347
Anna Jansson	CENAN-PL-EW	Cultural Resources	917-790-8623
Cheryl Alkemeyer	CENAN-PL-EW	Hazardous, Toxic, and Radioactive Waste	917-790-8723
Ellen Simon	CENAN-OC	Ass. Dist. Council	917-790-8158
Warren LaRiviere	CENAN-PM-C	Real Estate	917-790-8450

DISTRICT QUALITY CONTROL TEAM (subject to change based on team availability)			
Name	Office	Position	Phone Number
Maya Dehner	CENAN-PL-F	DQC Lead	917-790-8630
Maya Dehner	CENAN-PL-F	Planning	917-790-8630
Johnny Chan	CENAN-PL-F	Economics	917-790-8706
Robert Smith	CENAN-PL-E	Environmental Resources and Cultural Resources	917-790-8729
Juan Carlos Escajadillo	CENAN-EN	Hydrology and Hydraulic Engineering	917-790-8356
Kevin Whorton	CENAN-EN-D	Civil/Design Engineering	917-790-8065
Stanley Sedwick	CENAN-EN-D	Geotechnical Engineer	917-790-8370
Cynthia Zhang	CENAN-EN-C	Cost Engineering	917-790-8006
Randy Hintz	CENAN-OP	Construction/Operations	917-790-8550
Mary Rixey	CENAN-RE	Real Estate	917-790-8433

AGENCY TECHNICAL REVIEW TEAM			
Name	Office	Position	Phone Number
Samantha Borer	CESAJ-PD-PN	ATR Lead	904-232-1066
TBD		Planning	
TBD		Economics (report)	
TBD		Economics (models)	
TBD		Environmental Resources	
TBD		Cultural Resources	
TBD		HH&C Engineer	
TBD		Geologist/Geotechnical Engineering	
TBD		Cost Engineering	
TBD		Construction/Operations	
TBD		Real Estate	
TBD		Climate Preparedness and Resilience CoP/HH&C Climate Reviewer	

VERTICAL TEAM			
Name	Office	Position	Phone Number
Christopher Ricciardi	CENAD-PD-C	Program Manager	347-370-4534
Joseph Vietri	CENAD-PD-P MSC	Chief of Planning and Policy	347-370-4570
Cathy Shuman	CECW-NAD-RIT	Deputy Chief NAD RIT	202-761-1379

POLICY AND LEGAL COMPLIANCE REVIEW TEAM			
Name	Office	Position	Phone Number
Megan Jadrosich	CENAD-PD-PP	Review Manager	347-370-4653
Naomi Fraenkel	CENAD-PD-PP	Economics	917-359-2819
Valerie Cappola	CENAD-PD-P	Environmental	347-370-4557
Raymond Wimbrough	CECW-NAD	Plan Formulation	202-761-4056
Ralph LaMoglia	CENAD-RB-T	Engineering and Construction	347- 370-4599
Hans (Rod) Moritz	CENWP-ENC-HD	Climate Change	503-808-4864
Karen Kennedy	CENAD-PD-RE	Real Estate	347-370-4516
Patsy Falcigno	CECC-NAD	Office of Counsel	646-510-1856