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

MAR 16 2018

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 East Rockaway Inlet to Rockaway Inlet and Jamaica Bay, N.Y. General Reformulation Report Review Plan

1. Reference Memorandum, CENAN-DE, dated 23 Feb 2018, subject as above.

2. The Coastal Storm Risk Management Planning Center of Expertise of the North Atlantic Division (NAD) 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 the NAD Commander.

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

Encl

LEON F. PARROTT
Colonel, EN
Deputy Commander

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

FEB 23 2018

CENAN-DE

MEMORANDUM FOR: Commander, North Atlantic Division, ATTN: CENAD-PD-X (Larry Cocchieri), Fort Hamilton Military Community, Building 301, General Lee Avenue, Brooklyn, New York, 11252-6700

SUBJECT: Submission of the Updated Review Plan for the Atlantic Coast of New York East Rockaway Inlet to Rockaway Inlet Coastal Storm Risk Management General Reformulation Report (P2 No. 403429) for Review and Approval

1. References: EC 1165-2-214, Civil Works Review.

2. Background: The New York District initiated Agency Technical Review (ATR) on 27 October 2016. As part of the outcome for the Agency Decision Milestone (ADM), a key feature of the Tentatively Selected Plan (TSP) will now be studied and potentially recommended under a separate ongoing U.S. Army Corps of Engineers (USACE) Study—the New York and New Jersey Harbor and Tributaries Study. Due to this change in scope, as well as changes to the proposed plan to address high frequency flood risk in the communities surrounding Jamaica Bay, the District will re-release a Revised Draft General Reevaluation Report and Environmental Impact Statement. Due to the change in scope of the study, per the requirements laid out in EC 1165-2-214, the District has revised the Review Plan for the subject study. The revised Review Plan is based on the SMART Planning principles and milestones to reflect the current status of the study and review processes and costs.

3. The District requests review and approval of the subject Review Plan.

4. Enclosed please find the Review Plan for the Atlantic Coast of New York East Rockaway Inlet to Rockaway Inlet Coastal Storm Risk Management General Reformulation Report.

5. For additional information, please contact Ms. Daria Mazey, Project Planner, at (917) 790-8726 or daria.s.mazey@usace.army.mil.

Encl

THOMAS D. ASBERY
COL, EN
Commanding

# REVIEW PLAN
# East Rockaway Inlet to Rockaway Inlet and Jamaica Bay General Reformulation Report

New York District

**MSC Approval Date: 16 March 2018**
**Last Revision Date:** 23 Feb 2018

US Army Corps
of Engineers ®

# REVIEW PLAN

## Atlantic Coast of New York, East Rockaway Inlet to Rockaway Inlet and Jamaica Bay General Reformulation Report

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## 1. PURPOSE AND REQUIREMENTS

**a. Purpose.** This Review Plan defines the scope and level of peer review for the East Rockaway Inlet to Rockaway Inlet and Jamaica Bay General Reformulation Report.

**b. References.**

(1) Engineering Circular (EC) 1165-2-214, Civil Works Review, 15 Dec 12

(2) EC 1105-2-412, Assuring Quality of Planning Models, 31 Mar 11

(3) Engineering Regulation (ER) 1110-1-12, Quality Management, 30 Sep 06

(4) ER 1105-2-100, Planning Guidance Notebook, Appendix H, Policy Compliance Review and Approval of Decision Documents, Amendment #1, 20 Nov 07

(5) East Rockaway to Rockaway Inlet and Jamaica Bay Project Management Plan

(6) New York District Quality Management Plan

**c. Requirements.** This Review Plan was developed in accordance with EC 1165-2-214, which establishes an accountable, comprehensive, life-cycle review strategy for Civil Works products by providing a seamless process for review of all Civil Works projects from initial planning through design, construction, and operation, maintenance, repair, replacement and rehabilitation (OMRR&R). The EC outlines four general levels of review: District Quality Control/Quality Assurance (DQC), Agency Technical Review (ATR), Independent External Peer Review (IEPR), and Policy and Legal Compliance Review. In addition to these levels of review, decision documents are subject to cost engineering review and certification (per EC 1165-2-214) and planning model certification/approval (per EC 1105-2-412).

## 2. REVIEW MANAGEMENT ORGANIZATION (RMO) COORDINATION

a. The RMO is responsible for managing the overall peer review effort described in this Review Plan. The RMO for decision documents is typically either a Planning Center of Expertise (PCX) or the Risk Management Center (RMC), depending on the primary purpose of the decision document. The RMO for the peer review effort described in this Review Plan is the National Planning Center for Coastal Storm Risk Management (PCX-CSRM) or the "Coastal PCX".

b. The RMO will coordinate with the Civil Works Cost Engineering and Agency Technical Review Mandatory Center of Expertise (MCX) to ensure the appropriate expertise is included on the review teams to assess the adequacy of cost estimates, construction schedules and contingencies. The Cost-PCX will perform cost certification. There are no other PCX's noted at this time.

## 3. STUDY INFORMATION

**a. Decision Document.** The Decision Document for the East Rockaway to Rockaway Inlet and Jamaica Bay, New York Reformulation Study is a General Re-evaluation Report. The study

area is located along the Atlantic Coast of County of Queens, New York and in the communities surrounding Jamaica Bay.

This Beach Erosion Control and Hurricane Protection is authorized by the Flood Control Act of 1965, as prescribed by House Document No. 215, 89th Congress, First Session. The purpose of this study is to identify possible solutions to hurricane and storm damages in the area, and to determine whether federal participation is warranted in constructing shore protection measures.

The level of approval for the document is the Chief of Engineers and will require Congressional authorization. The National Environmental Policy Act (NEPA) documentation will be an Environmental Impact Statement (EIS) which will be integrated with the GRR into an Integrated GRR/EIS Report.

**b. Study/Project Description.** This study is to determine whether federal participation is feasible for the East Rockaway Inlet to Rockaway Inlet and Jamaica Bay Project while considering the changes that occurred in the project area since study was first authorized in 1965. Erosion, wave attack, and tidal inundation will be examined and the measures for coastal storm damage reduction in the area include the following features individually and in combination:

- Beach fill
- Reinforced dune
- Groin construction or modification
- Non-structural measures, such as road raising, buyouts, house raising, or flood-proofing
- Natural and nature based features (NNBFs), such as berm/wetland configurations on the shoreline
- Bulkhead construction or modification
- Floodwalls
- Revetments
- Storm surge barrier*

  **Note:* The storm surge barrier measure was considered, evaluated, and included in the Tentatively Selected Plan, or TSP. However, as part of the agency decision coming out of the ADM milestone, this feature will now be studied under an existing ongoing study called the New York and New Jersey Harbor and Tributaries (NYNJHAT) Study.* The NYNJHAT Study is currently evaluating a suite of storm surge barriers as part of a regional coastal storm risk management evaluation. One of the alignments being considered in the NYNJHAT Study would obviate the need for the proposed Jamaica Bay storm surge barrier; therefore an agency decision determined it would be more appropriate to study this feature in the NYNJHATS study.

The originally authorized project in 1965 included the areas from East Rockaway Inlet to Rockaway Inlet and all of Jamaica Bay. Figure 1 shows the location of the study area. Two distinct subdivisions of the study area are the Atlantic Coast of Rockaway Peninsula and the communities which surround Jamaica Bay, also called the Back-Bay communities.

***Rockaway Peninsula***

The communities located on the Rockaway peninsula from west to east include Breezy Point, Roxbury, Neponsit, Belle Harbor, Rockaway Park, Seaside, Hammels, Arverne, Edgemere and Far Rockaway. The former Fort Tilden Military Reservation and the Jacob Riis Park (part of the

Gateway National Recreation Area) are located in the western half of the peninsula between Breezy Point and Neponsit.

***Jamaica Bay***

The entire Jamaica Bay area, as shown in Figure 1 contains over 55,800 buildings, with 10,400 buildings in the FEMA regulated 100-year floodplain, 3,300 hundred of which are located along the mainland of Jamaica Bay in New York City.

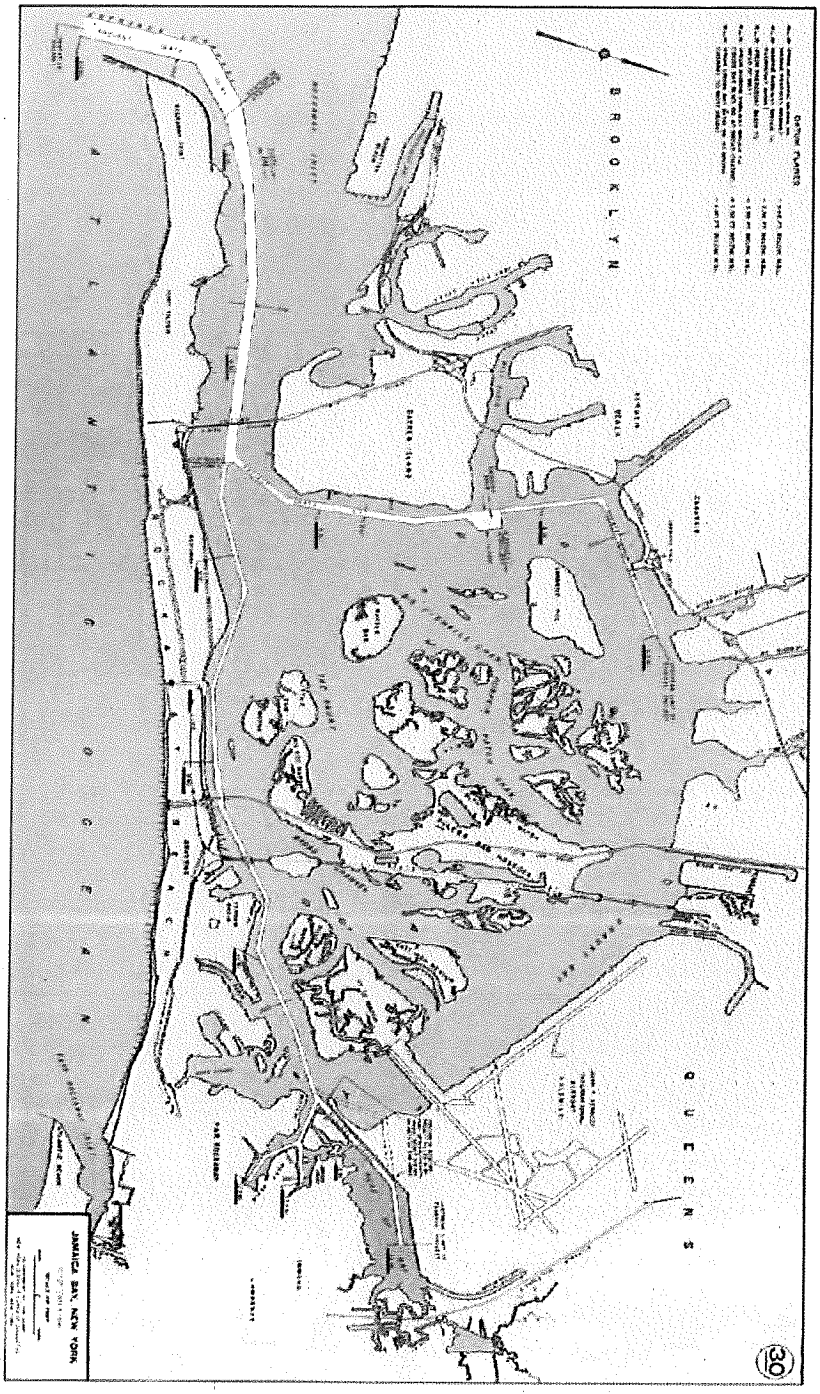


**Figure 1. East Rockaway Inlet to Rockaway Inlet Study Area**

**c. Factors Affecting the Scope and Level of Review.** Discussion of the factors affecting the risk-informed decisions on the appropriate scope and level of review follow. It is included support the PDT, PCX, and vertical team decisions on the appropriate level of review and types of expertise represented on the various review teams.

- If parts of the study will likely be challenging (with some discussion as to why or why not and, if so, in what ways – consider technical, institutional, and social challenges, etc.); and

The study includes two distinct coastal environments which will necessitated different technologies as solutions. Back-bay conditions are influenced by shoreline conditions, which added analytical complexity. Atlantic coast solutions will be politically and institutionally more acceptable as they are a refinement of an accepted practice of beachfill. Incorporation of NNBFs in the Jamaica Bay environment may generate scrutiny as it is a new practice to quantify CSRM benefits accruing to NNBF features. Furthermore, the high frequency flooding risk reduction features in the Back-Bay involve complex interior drainage issues and coordination with NYC Department of Environmental Protection (DEP), the agency responsible for the storm and sewer drainage system, which may need to be modified as part of the HFFRRF design in order to ensure that the Corps proposed project would not increase the water load to the existing system, worsening an already bad problem. The Project Delivery Team (PDT) is coordinating closely with NYC and DEP in order to manage this complexity.

- A preliminary risk assessment of where the project risks are likely to occur and what the magnitude of those risks might be (e.g. what are the uncertainties and how might they affect the success of the project):

There are three (2) anticipated risks: 1) the unpredictability of the number and severity of future storm events impacting, and 2) political/public support.

- If the project will be justified by life safety or if the project likely involves significant threat to human life/safety assurance, consider at minimum the safety assurance measures described in EC 1165-2-209 including, but not necessarily limited to, the consequences of non-performance of project economics, the environmental and social well-being (public safety and social justice); residual risk; uncertainty due to climate variability, etc.:

  Since dune and berm beachfill cross-sections, floodwalls, revetments, and bulkheads are included as possible structural solutions and are subject to design exceedence, a Safety Assurance Review (SAR) as part of a Type I IEPR is warranted due to the potential for risk to life safety involved in any CSRM study.

- If there is a request by the Governor of an affected state for a peer review by independent experts:

  There has not been such a request.

- If the project is likely to involve significant public dispute as to the size, nature, or effects of the project:

  Public dispute is likely.

- If the project is likely to involve significant public dispute as to the economic or environmental cost or benefit of the project:

  It is anticipated that public issues may be significant and would require the preparation of an Environmental Impact Statement. Back-Bay solutions might be costly and subject to scrutiny regarding cost and potential impacts to Jamaica Bay. The inclusion of NNBFs as part of the Back-Bay solution is an integrated mitigation approach, which is currently being coordinated with resource agencies. The goal is for the project to be self-mitigating, but also to provide CSRM benefits with the inclusion of NNBFs. This should also help greatly with public/political acceptability, as the desire for NNBF inclusion in the final recommendation has been repeatedly stated by various stakeholder groups, elected officials, our non-federal partners, our Cooperating Agency—the National Park Service, and members of the public.

- If information in the decision document or anticipated project design is 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:

  Standard methods of analysis will be employed including well-documented techniques for evaluating coastal and fluvial processes.

- If the project design is anticipated to require redundancy, resiliency, and/or robustness, unique construction sequencing, or reduced or overlapping design construction schedule:

  The project is likely to utilize standard equipment. The anticipated plan is expected to require redundancy, unusual resiliency and/or robustness, unique construction sequencing or reduced or overlapping design construction schedule.

**d. In-Kind Contributions.** Products and analyses provided by non-federal sponsors as in-kind services are subject to DQC, ATR, and IEPR. The in-kind products and analyses to be provided by the non-federal sponsor include:

No in-kind contribution is anticipated.

## 4. DISTRICT QUALITY CONTROL (DQC)

All decision documents (including supporting data, analyses, environmental compliance documents, etc.) shall undergo DQC. DQC is an internal review process of basic science and engineering work products focused on fulfilling the project quality requirements defined in the Project Management Plan (PMP). The home district shall manage DQC. Documentation of DQC activities is required and should be in accordance with the Quality Manual of the District and the home MSC.

**a. Documentation of DQC.** District Quality Control will be documented through the use of a Quality Control Report, which is managed in the New York District and signed by those

members performing the DQC as well as the Division Chiefs of the major technical offices responsible for producing this report.

b. **Products to Undergo DQC.** Interim and final products and ultimately the Feasibility report and appendices and the EIS will undergo DQC.

c. **Required DQC Expertise.** The DQC review team will include the expertise of Section Chiefs and subject matter experts or regional technical specialists in the fields of Plan Formulation, Economics, NEPA compliance, and Engineering Design and Analysis, and Real Estate.

## 5. AGENCY TECHNICAL REVIEW (ATR)

ATR is mandatory for all decision documents (including supporting data, analyses, environmental compliance documents, etc.). The objective of ATR is to ensure consistency with established criteria, guidance, procedures, and policy. The ATR will assess whether the analyses presented are technically correct and comply with published USACE guidance, and that the document explains the analyses and results in a reasonably clear manner for the public and decision makers. ATR is managed within USACE by the designated RMO and is conducted by a qualified team from outside the home district that is not involved in the day-to-day production of the project/product. ATR teams will be comprised of senior USACE personnel and may be supplemented by outside experts as appropriate. The ATR team lead will be from outside the home MSC.

a. **Products to Undergo ATR.** ATR will be conducted on the draft feasibility report (including NEPA and supporting documentation) and final report (including NEPA and supporting documentation). Additional ATR of key technical and interim products, MSC-specific milestone documentation, and In-Progress Review (IPR) documentation, if such documentation becomes necessary, should occur depending on the study needs and the requirements of MSC/District Quality Management Plans. Where practicable, technical products that support subsequent analyses will be reviewed prior to being used in the study and may include: surveys & mapping, hydrology & hydraulics, coastal engineering, geotechnical investigations, economic, environmental, cultural, and social inventories, annual damage and benefit estimates, cost estimates, real estate requirements etc.

b. **Required ATR Team Expertise.** An ATR Team Leader and four to six technical disciplines were determined to be appropriate for review of the products leading to the feasibility report and EA including: plan formulation, economics, environmental resources, and coastal engineering. All should be well versed in the conduct of coastal storms risk management studies. Reviewers should be from outside the project district and the review lead should be from outside the project MSC.

| ATR Team Members/Disciplines | Expertise Required |
|---|---|
| ATR Lead | The ATR lead should be a senior professional with extensive experience in preparing Civil Works decision documents and conducting ATR. The lead should also have the necessary skills and experience to lead a virtual team through the ATR process. Typically, the ATR lead will also serve as a reviewer |

| | |
|---|---|
| | for a specific discipline (such as planning, economics, environmental resources, etc.). |
| Plan Formulation | The Planning reviewer should be a senior water resources planner with experience in the plan formulation process. The reviewer should be familiar with evaluation of alternative plans for coastal storms risk management projects. |
| Economics | The economics reviewer should be a senior water resource economist with experience in coastal storms risk management project and ecosystem restoration. |
| Environmental Resources | The environmental resources reviewer should be a senior NEPA compliance specialist with experience in coastal storms risk management projects, particularly projects in urbanized coastal areas. Expertise with living shorelines and natural and nature based features for CSRM is also preferred. |
| Coastal Engineering | The coastal engineering reviewer should be a senior engineer with experience with coastal storms risk management projects, particularly projects in urbanized coastal areas. |
| Structural Engineering | Team member should have expertise in the field of structural engineering, especially in design and review of floodwalls, bulkheads, and revetments. A registered professional engineer is required. |
| Geotechnical Engineering | Team member should have expertise in geotechnical engineering, specifically floodwall, road raising, bulkheads and/or coastal structures, and berm construction. A registered professional engineer is required. |
| Risk Reviewer | Team member should have knowledge and experience in accordance with ER 1105-2-101. |
| Real Estate | The Real Estate reviewer will have experience in development of SMART Planning Real Estate Plans and will have experience in preparing real estate plans for other navigation improvement projects including the application of navigational servitude for federal navigations projects. |
| Cost Engineering | Team member should have expertise in cost estimating for similar projects in MII. Review includes construction schedules and contingencies. The team member will be a Certified Cost Technician, a Certified Cost Consultant, or a Certified Cost Engineer. As the Cost Engineering Center of Expertise, Walla Walla District will assign this team member as part of a separate effort coordinated by the ATR team lead. |

c. **Documentation of ATR.** DrChecks review software will be used to document all ATR comments, responses and associated resolutions accomplished throughout the review process. ***Comments should be limited to those that are required to ensure adequacy of the product.*** The four key parts of a quality review comment will normally include:

(1) The review concern – identify the product's information deficiency or incorrect application of policy, guidance, or procedures;
(2) The basis for the concern – cite the appropriate law, policy, guidance, or procedure that has not be properly followed;
(3) The significance of the concern – indicate the importance of the concern with regard to its potential impact on the plan selection, recommended plan components, efficiency (cost), effectiveness (function/outputs), implementation responsibilities, safety, federal interest, or public acceptability; and
(4) The probable specific action needed to resolve the concern – identify the action(s) that the reporting officers must take to resolve the concern.

**d.** In some situations, especially addressing incomplete or unclear information, comments may seek clarification in order to then assess whether further specific concerns may exist.

**e.** The ATR documentation in DrChecks will include the text of each ATR concern, the PDT response, a brief summary of the pertinent points in any discussion, including any vertical team coordination (the vertical team includes the district, RMO, MSC, and HQUSACE), and the agreed upon resolution. If an ATR concern cannot be satisfactorily resolved between the ATR team and the PDT, it will be elevated to the vertical team for further resolution in accordance with the policy issue resolution process described in either ER 1110-1-12 or ER 1105-2-100, Appendix H, as appropriate. Unresolved concerns can be closed in DrChecks with a notation that the concern has been elevated to the vertical team for resolution.

**f.** At the conclusion of each ATR effort, the ATR team will prepare a Review Report summarizing the review. Review Reports will be considered an integral part of the ATR documentation and shall:

- Identify the document(s) reviewed and the purpose of the review;
- Disclose the names of the reviewers, their organizational affiliations, and include a short paragraph on both the credentials and relevant experiences of each reviewer;
- Include the charge to the reviewers;
- Describe the nature of their review and their findings and conclusions;
- Identify and summarize each unresolved issue (if any); and
- Include a verbatim copy of each reviewer's comments (either with or without specific attributions), or represent the views of the group as a whole, including any disparate and dissenting views.

**g.** ATR may be certified when all ATR concerns are either resolved or referred to the vertical team for resolution and the ATR documentation is complete. The ATR Lead will prepare a Statement of Technical Review certifying that the issues raised by the ATR team have been resolved (or elevated to the vertical team). A Statement of Technical Review should be completed, based on work reviewed to date, for the AFB, draft report, and final report. A sample Statement of Technical Review is included in Attachment 2.

## 6. INDEPENDENT EXTERNAL PEER REVIEW (IEPR)

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 certain 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, as described in EC 1165-2-214, is

made as to whether IEPR is appropriate. IEPR panels will consist of independent, recognized experts from outside of the USACE in the appropriate disciplines, representing a balance of areas of expertise suitable for the review being conducted. There are two types of IEPR:

- Type I IEPR. Type I IEPR reviews are managed outside the USACE and are conducted on project 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. Type I IEPR will cover the entire decision document or action and will address all underlying engineering, economics, and environmental work, not just one aspect of the study. For decision documents where a Type II IEPR (Safety Assurance Review) is anticipated during project implementation, safety assurance shall also be addressed during the Type I IEPR per EC 1165-2-214.

- Type II IEPR. Type II IEPR, or Safety Assurance Review (SAR), are managed outside the USACE and are conducted on design and construction activities for hurricane, storm, and flood risk management projects or other projects where existing and potential hazards pose a significant threat to human life. Type II IEPR panels will conduct reviews of the design and construction activities prior to initiation of physical construction and, until construction activities are completed, periodically thereafter on a regular schedule. The reviews shall consider the adequacy, appropriateness, and acceptability of the design and construction activities in assuring public health safety and welfare.

**a. Decision on IEPR.** The Rockaway Reformulation requires IEPR because the estimated cost of the project will exceed $200 million and the potential for life safety impacts. IEPR was performed on the Draft Integrated GRR/EIS that was released in August 2016 and comment resolution was completed. A follow-up IEPR will be done on the new portions of the Revised Draft GRR/EIS that will be released for a second 45-day public review period in May 2018.

As this is a coastal storm risk management (CSRM) study, a Safety Assurance Review as part of a Type I IEPR is presumed to be warranted due to the potential for risk to life safety involved in any CSRM study.

**b. Products to Undergo Type I IEPR**. The product to undergo IEPR will be the draft re-evaluation report.

**c. Required Type I IEPR Panel Expertise.** All should be well versed in the conduct of coastal storm risk management studies, including formulation, economics, environmental resources and coastal engineering. Reviewers will be a panel from an Outside Eligible Organization (OEO).

| IEPR Disciplines | Expertise Required |
|---|---|
| Plan Formulation | The Planning reviewer should be a senior water resources planner with experience in the plan formulation process. The reviewer should be familiar with evaluation of alternative plans for coastal storms risk management projects. |
| Economics | The economics reviewer should be a senior water resource economist with experience in coastal storm risk management projects and ecosystem restoration. |
| Environmental Resources and Environmental Law Compliance | The environmental resources reviewer should be a senior NEPA compliance specialist with experience in coastal storms risk management projects, particularly projects in urbanized coastal areas and familiar with Nature Based Infrastructure. |
| Coastal Engineering | The coastal engineering reviewer should be a senior engineer with experience with coastal storms risk management projects, particularly projects in urbanized coastal areas. |
| Structural Engineering | Team member should have expertise in the field of structural engineering, especially in design and review of floodwalls and closure gates. A registered professional engineer is required. |
| Geotechnical Engineering | Team member should have expertise in geotechnical engineering and levee and bulkhead construction. A registered professional engineer is required. |
| Civil Engineer and Risk Reviewer | Team member should have knowledge and experience in accordance with ER 1105-2-101. |

d. **Documentation of Type I IEPR.** The IEPR panel will be selected and managed by an Outside Eligible Organization (OEO) per EC 1165-2-214. Panel comments will be compiled by the OEO and should address the adequacy and acceptability of the economic, engineering and environmental methods, models, and analyses used. IEPR comments should generally include the same four key parts as described for ATR comments in Section 4.d above. The OEO will prepare a final Review Report that will accompany the publication of the final decision document and shall:

- Disclose the names of the reviewers, their organizational affiliations, and include a short paragraph on both the credentials and relevant experiences of each reviewer;
- Include the charge to the reviewers;
- Describe the nature of their review and their findings and conclusions; and
- Include a verbatim copy of each reviewer's comments (either with or without specific attributions), or represent the views of the group as a whole, including any disparate and dissenting views.

The final Review Report will be submitted by the OEO no later than 60 days following the close of the public comment period for the draft decision document. USACE shall consider all recommendations contained in the Review Report and prepare a written response for all recommendations adopted or not adopted. The final decision document will summarize the Review Report and USACE response. The Review Report and USACE response will be made available to the public, including through electronic means on the internet.

## 7. POLICY AND LEGAL COMPLIANCE REVIEW

All decision documents will be reviewed throughout the study process for their compliance with law and policy. Guidance for policy and legal compliance reviews is addressed in Appendix H, ER 1105-2-100. These reviews culminate in determinations that the recommendations in the reports and the supporting analyses and coordination comply with law and policy, and warrant approval or further recommendation to higher authority by the home MSC Commander. DQC and ATR augment and complement the policy review processes by addressing compliance with pertinent published Army policies, particularly policies on analytical methods and the presentation of findings in decision documents.

## 8. COST ENGINEERING AND ATR MANDATORY CENTER OF EXPERTISE (MCX) REVIEW AND CERTIFICATION

All decision documents shall be coordinated with the Cost Engineering and ATR MCX, located in the Walla Walla District. The MCX will assist in determining the expertise needed on the ATR team and Type I IEPR team (if required) and in the development of the review charge(s). The MCX will also provide the Cost Engineering certification. The RMO is responsible for coordination with the Cost Engineering MCX.

## 9. MODEL CERTIFICATION AND 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, for the purposes of the EC, are defined as any models and analytical tools that planners use 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 the planning product. 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 (if required).

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 and the professional practice of documenting the application of the software and modeling results will be followed. As part of the USACE Scientific and Engineering Technology (SET) Initiative, many engineering models have been identified as preferred or acceptable for use on Corps studies and these models should be used whenever 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.

a. **Planning Models.** The following planning models are anticipated to be used in the development of the decision document:

| Model Name and Version | Brief Description of the Model and How It Will Be Applied in the Study | Certification / Approval Status |
|---|---|---|
| HEC-FDA, Flood Damage Analysis | Application that calculates inundation and damages to an inventory of structures along Jamaica Bay. | Certified |
| BeachFX | USACE program which employs an event-based Monte Carlo life cycle simulation to estimate storm damage in the with and without project condition along the coast. | Certified |
| IWR Plan | USACE model which combines user-defined solutions to planning problems and calculates the effects of each combination, and identifies the plans which are best financial investments and displaying the effects of each on a range of decision variables | Certified |
| Evaluation of Planned Wetlands (EPW) habitat model | The Evaluation of Planned Wetlands (EPW) habitat model (Regional Certification obtained July 2016) will be used to quantify benefits for the sites and addresses functional outcomes related to shoreline bank erosion, sediment stabilization, water quality, wildlife, and fish. | Certified |

b. **Engineering Models.** The following engineering models are anticipated to be used in the development of the decision document:

| Model Name and Version | Brief Description of the Model and How It Will Be Applied in the Study | Approval Status |
|---|---|---|
| STWave: model of wave climate | This is a widely-used model. This is a software model that takes historic wind, fetch, and wave data to simulate the wave climate along a shoreline and probabilistically predict wave action and surge elevations into the future. | Not certified; CoP-preferred |
| spreadsheet model for storm damages on bulkheads and structures behind them | This is widely used by New York District. This model uses wave equations and assumptions of wave scour from the USACE Shore Protection Model, and wave overtopping equations recommended in USACE EM-1110-2-1614 "Design of Coastal Revetments, Seawalls, and Bulkheads" to simulate failure conditions for bulkheads and wave undermining of roads. | Not certified and not CoP-listed, referenced in Shore Protection Manual |
| EDUNE | This is widely used by New York District. This model calculates erosion and wave climate prediction, and is based on the equilibrium profile theory, as is the Corps model, SBEACH. The erosion prediction is utilized in | Not certified and not CoP-listed; developed |

| | | |
|---|---|---|
| | simulating structure undermining. | after the Shore Protection Manual |
| CMS | CMS-Flow model will be used to obtain fine scale water level, flow and sediment transport characteristics | Approved |
| ADCIRC | The ADCIRC model will be configured for the study area specifics. | APPROVED |

## 10. REVIEW SCHEDULES AND COSTS

a. **ATR Schedule and Cost.** The estimated schedule has ATR at the submission of the Revised Draft Report, in the Spring of 2018. The ATR budget of approximately $50,000 includes participation of the ATR Lead in milestone conferences to address the ATR process and any significant and/or unresolved ATR concerns.

b. **Type I IEPR Schedule and Cost.** The estimated schedule for IEPR has IEPR taking place for the submission of the revised draft report, in the Spring of 2018. The IEPR cost at present, excluding NAN staff time for participation, is approximately $100,100. This includes participation of the IEPR Lead to address the IEPR process and any significant and/or unresolved IEPR concerns.

| *DATE* | *ACTION ITEM* | *METHOD* |
|---|---|---|
| *August 2018* | *Kickoff meeting with USACE IEPR panel/USACE/APMI* | *Teleconference* |
| **14 Sep 2018** | **Mid-point review with USACE** IEPR panel/USACE/APMI | Teleconference |
| **21 Sep 2018** | **IEPR Final Panel Report to USACE PCX** *Conformance and quality review* | APMI Submits to USACE PCX |
| **28 Sep 2018** | **IEPR Final Panel Report to NY District PDT** | APMI submits to |
| **5 Oct 2018** | **Draft USACE evaluator responses** and clarifying questions to IEPR Final Panel Report | **USACE submits to APMI** |
| **8 Oct 2018** | **Discuss USACE draft evaluator responses** and clarifying questions *IEPR panel/USACE/APMI* | Teleconference |
| **10 Oct 2018** | **Final USACE evaluator responses** to IEPR Final Panel Report | **USACE submits to APMI** |

| | | |
|---|---|---|
| **12 Oct 2018** | **Final IEPR Panel Back-check Responses** | **APMI submits to USACE** |

**c. Model Certification/Approval Schedule and Cost.** Not-Applicable

## 11. PUBLIC PARTICIPATION

There have been and will be opportunities for public comment. Public comments and questions will be made available in the final EIS.

A scoping process will include intensive and continued agency feedback, invitations to serve as cooperating agencies and public meetings in multiple locations to facilitate participation in the Atlantic Shoreline and Jamaica Bay communities.

## 12. REVIEW PLAN APPROVAL AND UPDATES

The CENAD Commander is responsible for approving this Review Plan. The Commander's approval reflects vertical team input (involving district, MSC, RMO, and HQUSACE members) as to the appropriate scope and level of review for the decision document. Like the PMP, the Review Plan is a living document and may change as the study progresses. The home district is responsible for keeping the Review Plan up to date. Minor changes to the review plan since the last MSC Commander approval are documented in Attachment 3, as applicable. Significant changes to the Review Plan (such as changes to the scope and/or level of review) should be re-approved by the MSC Commander following the process used for initially approving the plan. The latest version of the Review Plan, along with the Commanders' approval memorandum, should be posted on the Home District's webpage. The latest Review Plan should also be provided to the RMO and home MSC.

## 13. REVIEW PLAN POINTS OF CONTACT

Public questions and/or comments on this review plan can be directed to the following points of contact:

- Daria Mazey, Plan Formulator, 917-790-8726
- Christopher Ricciardi, MSC, 347-370-4534
- Lawrence Cocchieri, RMO, 347-370-4571

## ATTACHMENT 1: TEAM ROSTERS

| NY District Project Delivery Team | | | |
|---|---|---|---|
| *Title* | *Name* | *Email* | *Phone* |
| Project Manager | Dan Falt | Daniel.Falt@usace.army.mil | 917-790-8212 |
| Study Lead Project Planner/ Biologist | Daria Mazey | Daria.S.Mazey@usace.army.mil | 917-790-8316 |
| Coastal Engineer | Suzana Rice | Suzana.S.Rice@usace.army.mil | 917-790-8374 |
| Technical Manager | Jamal Sulayman | Jamal.A.Sulayman@usace.army.mil | 917-790-8299 |
| Economist | Mitch Laird | Mitchell.P.Laird@usace.army.mil | 270-495-1412 |
| Cultural Specialist | Nancy Brighton | Nancy.J.Brighton@usace.army.mil | 917-790-8703 |
| Real Estate Specialist | Warren LaRiviere | Warren.Q.Lariviere@usace.army.mil | 917-790-8450 |

| IEPR and ATR Review Leads and Points of Contact | | | |
|---|---|---|---|
| *Org/Position* | *Name* | *Email* | *Phone* |
| IEPR PCX | Martha P. Newman | martha.newman@usace.army.mil | 410-962-4590 |
| | Anastasiya Hernandez | Anastasiya.hernandez@usace.army.mil | 443-759-0796 |
| ATR Lead | Monica Simon-Dodd | Monica.S.Dodd@usace.army.mil | 912-652-5375 |
| ATR Supervisor | Pamela Castens | Pamela.G.Castens@usace.army.mil | 910-251-4671 |
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## ATTACHMENT 2: SAMPLE STATEMENT OF TECHNICAL REVIEW FOR DECSION DOCUMENTS

### COMPLETION OF AGENCY TECHNICAL REVIEW

The Agency Technical Review (ATR) has been completed for the *<type of product>* for *<project name and location>*. The ATR was conducted as defined in the project's Review Plan to comply with the requirements of EC 1165-2-209. During the ATR, compliance with established policy principles and procedures, utilizing justified and valid assumptions, was verified. This included review of: assumptions, methods, procedures, and material used in analyses, alternatives evaluated, the appropriateness of data used and level obtained, and reasonableness of the results, including whether the product meets the customer's needs consistent with law and existing US Army Corps of Engineers policy. The ATR also assessed the District Quality Control (DQC) documentation and made the determination that the DQC activities employed appear to be appropriate and effective. All comments resulting from the ATR have been resolved and the comments have been closed in DrChecks[sm].

*SIGNATURE* _____ Date _____

*Name*
ATR Team Leader
*Office Symbol/Company*

*SIGNATURE* _____ Date _____

*Name*
Project Manager
*Office Symbol*

*SIGNATURE* _____ Date _____

*Name*
Architect Engineer Project Manager[1]
*Company, location*

*SIGNATURE* _____ Date _____

*Name*
Review Management Office Representative
*Office Symbol*

### CERTIFICATION OF AGENCY TECHNICAL REVIEW

Significant concerns and the explanation of the resolution are as follows: *Describe the major technical concerns and their resolution.*

As noted above, all concerns resulting from the ATR of the project have been fully resolved.

*SIGNATURE* _____ Date _____

*Name*
Chief, Engineering Division
*Office Symbol*

*SIGNATURE* _____ Date _____

*Name*
Chief, Planning Division
*Office Symbol*

[1] Only needed if some portion of the ATR was contracted

## ATTACHMENT 3: REVIEW PLAN REVISIONS

| Revision Date | Description of Change | Page / Paragraph Number |
|---|---|---|
| 2 Nov 2016 | Update status of ATR and IEPR | |
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## ATTACHMENT 4: ACRONYMS AND ABBREVIATIONS

| Term | Definition | Term | Definition |
|---|---|---|---|
| AFB | Alternative Formulation Briefing | NED | National Economic Development |
| ASA(CW) | Assistant Secretary of the Army for Civil Works | NER | National Ecosystem Restoration |
| ATR | Agency Technical Review | NEPA | National Environmental Policy Act |
| CSRM | Coastal Storm Risk Management | O&M | Operation and maintenance |
| DPR | Detailed Project Report | OMB | Office and Management and Budget |
| DQC | District Quality Control/Quality Assurance | OMRR&R | Operation, Maintenance, Repair, Replacement and Rehabilitation |
| EA | Environmental Assessment | OEO | Outside Eligible Organization |
| EC | Engineer Circular | OSE | Other Social Effects |
| EIS | Environmental Impact Statement | PCX | Planning Center of Expertise |
| EO | Executive Order | PDT | Project Delivery Team |
| ER | Ecosystem Restoration | PAC | Post Authorization Change |
| FDR | Flood Damage Reduction | PMP | Project Management Plan |
| FEMA | Federal Emergency Management Agency | PL | Public Law |
| FRM | Flood Risk Management | QMP | Quality Management Plan |
| FSM | Feasibility Scoping Meeting | QA | Quality Assurance |
| GRR | General Reevaluation Report | QC | Quality Control |
| Home District/MSC | The District or MSC responsible for the preparation of the decision document | RED | Regional Economic Development |
| HQUSACE | Headquarters, U.S. Army Corps of Engineers | RMC | Risk Management Center |
| IEPR | Independent External Peer Review | RMO | Review Management Organization |
| ITR | Independent Technical Review | RTS | Regional Technical Specialist |
| LRR | Limited Reevaluation Report | SAR | Safety Assurance Review |
| MCX | Mandatory Center of Expertise | USACE | U.S. Army Corps of Engineers |
| MSC | Major Subordinate Command | WRDA | Water Resources Development Act |
| | | | |