INDEPENDENT EXTERNAL PEER REVIEW PANEL

for the

NEW YORK AND NEW JERSEY HARBOR DEEPENING CHANNEL IMPROVEMENTS DRAFT INTEGRATED FEASIBILITY REPORT AND ENVIRONMENTAL ASSESSMENT

The U.S. Army Corps of Engineers submits the following information per requirements in the Water Resources Reform and Development Act of 2014, Section 1044(c)(4)(B).

Entity Conducting the Review	
Outside Eligible Organization:	Analysis Planning and Management Institute 101 E. Culpeper Street, Suite 150 Culpeper, VA 22701
Dates of Review	
Review Initiation:	2 November 2020
Type I IEPR Final Report Submittal:	15 January 2021
Reviewer Names and Qualifications	
Donald Ator	**Plan Formulation/Economics**

Mr. Ator has over 40 years of experience as a civil works planner and economist. He has worked for the U. S. Army Corps of Engineers (USACE) as an employee and as a contractor. He is currently an instructor of Agricultural Economics, Rural Real Estate Appraisal, Marketing of Agricultural Commodities, and Futures and Options Trading at Louisiana State University.

Mr. Ator holds an M.B.A., *Finance and Accounting*, from Louisiana State University, Baton Rouge, LA; and M.S., *Economics and Agriculture Economics*, from Louisiana State University, Baton Rouge, LA; and a B.S., *Agribusiness*, from Tarleton State University, Stephenville, TX.

Mr. Ator has extensive demonstrated experience applying USACE plan formulation processes, procedures, and standards to Deep Draft Navigation Channel Improvement projects and dredged material management evaluations and recommendations (beneficial use, upland placement, ocean placement). His experience includes the Initial Appraisal of Rock Removal at the San Francisco Bar Channel for the USACE San Francisco District to evaluate the feasibility of deepening the Bar Channel from its current depth to improve restrictions to inbound deep draft vessels calling at ports in the San Francisco, CA Bay region. The project included formulating and evaluating alternative plans for deepening the bar channel by incremental alternative depths to 50 feet. The analysis included identifying the physical and economic constraints to the deepening and developing the operational and environmental impacts.

Mr. Ator has extensive experience with evaluating and formulating Dredged Material Management Plans (DMMP) including beneficial use, upland placement, and ocean placement. A representative example is his preparation of 42 project assessments for USACE Galveston District in accordance with the guidance provided in EC 1165-2-200, *A National Harbors Program: DMMP*. Completing the project assessments required review of project authorization documents, compiling Channel Maintenance Dredging frequencies and quantities from the Corps' Dredging Database,

assessing the remaining capacity of existing disposal areas, comparing forecasted annual channel maintenance costs and traffic levels with current trends, and preparing 42 reports documenting the analysis. The project assessments established if a more detailed DMMP study was required and provided information necessary to prioritize the District's budget and work plan. Another representative example of his experience applying USACE plan formulation processes, procedures, and standards to deep draft navigation channel improvement projects is the Deep Draft Navigation Feasibility Study, Buffalo Harbor, New York for the USACE Buffalo District. This study assessed the federal interest in making navigation improvements to support increased commercial activity would involve channel modifications to the Buffalo River to accommodate safe navigation of newer and larger ships operating on the Great Lakes. The work included the formulation, assessment, and evaluation of the benefits and costs of 18 alternatives and identifying the recommended plan for further development.

His current research is in Financial Resiliency Planning for local governments in Louisiana, Texas, Alabama, Mississippi, FL, Georgia, Kentucky, and Nebraska.

In the area of economics, Mr. Ator also has extensive demonstrated experience performing economic evaluations of deep draft navigation projects by applying USACE procedures and standards to evaluate alternative plans for channel improvement projects. He has conducted economic evaluations of containerized trade to evaluate alternative plans for deep draft navigation improvements. An example is the three-phase Savannah Harbor Expansion Project Economic Analysis, Benefits Calculation Methodology and Model, Multiport Analysis and Regional Port Analysis for the USACE Savannah District. Phase I developed a comprehensive technical work plan describing the components of the navigation economic analysis and the requirements to complete them. The components included commodity forecasts, vessel fleet forecasts, National Economic Development (NED) benefits calculation, a multiport analysis, and a regional port analysis. Phase II developed the commodity and fleet forecasts in 10-year increments over the 50-year project life. The commodity forecast was a major input to the harbor improvement study that affected the NED benefits based on the growth and timing of future benefiting cargo volumes. The vessel fleet forecasts projected the number and size of vessels and related sailing drafts that were expected to call at Savannah Harbor under without and with project conditions. Phase III developed the benefits calculation methodology and model, the multiport analysis, and the regional port analysis. As another example, he provided the economic evaluation for the Port of Gulfport Expansion Project for the Mississippi State Port Authority conducted by the USACE Mobile District that included construction of wharfs, bulkheads, terminal facilities, container storage areas, intermodal container transfer facilities, dredging and dredged material disposal and infrastructure. He developed an analytical comparison of two independent forecasts of twenty-foot equivalent unit (TEU) container throughput at the port over the 50-year life of the project and made recommendations on the most likely future TEU container throughputs.

Mr. Ator has employed tools for economic analysis, applied risk analysis, and developed trade/fleet forecasts in accordance with USACE procedures and standards. For the USACE Charleston District, he conducted an analysis of the Feasibility Study for deep draft navigation improvements to Charleston Harbor that identified and described the key methods and data sources used, quantified the sources of risk and uncertainty, and made recommendations to reduce the risk and uncertainty. The analysis focused on evaluating vessel operating costs to quantify the impact of the economic feasibility of deep draft navigation projects resulting from Institute of Water Resources revisions of vessel costs formulas. Another analysis was a more general evaluation of other methods and data used in the FS and the risk and uncertainty inherent in each.

Over his decades of professional career, he has developed an intimate familiarity with the Principles and Guidelines as set forth in the Planning Guidance Notebook. He has conducted over

500 economic FS for the USACE. Mr. Ator is a sustaining member of the SAME, Vicksburg Post and a past Member of the Board of Directors. He is an Associate Member, ASCE.

Paul Bovitz **Environmental Compliance**

Mr. Bovitz has over 35 years of experience in ecological assessment, site remediation, ecological risk assessment, wetlands delineation, permitting and restoration, dredging studies/dredged material management and reuse, ports compliance, and NEPA analysis for a variety of projects.

Mr. Bovitz holds an M.S. in Ecology from Rutgers University and B.S. in Wildlife Biology from Colorado State University. He also holds an M.B.A., Finance from Rutgers University. Mr. Bovitz is a Certified Professional Wetland Scientist, Licensed Site Remediation Professional (NJ), LEED Accredited Professional.

Mr. Bovitz has extensive experience in the NYNJH area, nationwide, and internationally on a variety of projects for federal, state, local government and for private sector clients. These include major projects conducted for the USACE New York District (NYD), Port Authority (PA) of NY and NJ, City of NY, and industrial clients in the NYNJH area. He was project manager for Meadowlands Mills EIS on behalf of USACE NYD Regulatory Branch. He was a major contributor to the EIS and supporting Part 360 documents for the Fresh Kills landfill in NY, and as an Environmental Protection Agency contractor directed a study of Polychlorinated Biphenyls-contaminated flood plain soils in the Hudson River. He has headed environmental projects at several PA sites including Ports Newark and Elizabeth, Howland Hook, and former NorthEast Auto Terminal. As project manager for the Remedial Investigation/FS of the former Raritan Arsenal for the NYD he managed sediment contamination issues associated with tidal tributaries and the Raritan River and headed the ecological risk assessment of the 3300-acre site. He was senior author on USACE NJ Intracoastal Waterway Dredged Material Management EA/FS. He was senior contributor to the contaminated sediments and ecology sections of the USACE DMMPs for San Francisco Bay and Baltimore Harbor/Chesapeake Bay. He was the program manager for the PA of NY and NJ account for a nationwide consulting firm, where he managed contracts for environmental engineering, dredge material testing, and ecology. He was the project manager for 7 years with a major consulting firm for the contracts for Biological Environmental and Cultural Resources with USACE NYD.

He has authored or coauthored over 100 technical documents that have included dredging permits, ecological risk assessments, EAs, and EISs. He is currently a member of the NJ Science Advisory Board Ecological Services committee where he has coauthored technical reviews of dredging impacts on aquatic biota and seismic impacts on marine biota. He teaches a short course annually at Rutgers on ecological risk assessment and site remediation.

Mr. Bovitz has performed independent peer reviews of a few USACE water resources and navigation projects, including the Mobile Harbor, Supplemental Environmental Impact Statement, which was a large-scale dredged channel extension project and the Beneficial Use of Dredged Material for the Delaware River FS. These reviews focused on NEPA compliance, natural resources, and cultural resources issues.

He is an expert in compliance requirements of environmental laws, policies, and regulations, such as the Fish and Wildlife Coordination Act and the Endangered Species Act. He coauthored a summary of NY State environmental regulations and policies for a major public utility in NY City. He has worked to secure permits for industrial clients in NY and NJ that included wetlands and dredging permits, stormwater pollution prevention plans, National Pollutant Discharge Elimination System permits, sediment and erosion control, and regulatory compliance issues affecting ports.

Harley Winer, Ph.D.	**Hydraulic/Coastal Engineer**

Dr. Winer has over 30 years of experience with 25 years of direct experience in coastal engineering with USACE and the private sector involving navigation and channel improvement projects, coastal processes, and hydrodynamic modeling of estuarine and nearshore systems. During his carrier, he has been an adjunct professor at two major universities where he conducted research and taught classes in Port and Harbor Engineering as well as fundamental engineering topics of Mechanics of Materials and Fluid Mechanics.

Dr. Winer holds a Ph.D. in Engineering Mechanics (emphasis on numerical modeling of wave-induced currents), from University of Florida, an M.S. in Civil Engineering (emphasis in coastal engineering) and a B.S. in Civil Engineering from University of Delaware, and B.A. in Philosophy, Lincoln University, PA. He is registered PE in Civil Engineering.

Dr. Winer has extensive experience in government and the private sector. During a 16-year career with a USACE district, he was chief of the Coastal Engineering Section of the Hydraulics Branch. He was a member of the hydraulics team on the closure structure for the Mississippi River Gulf Outlet deep-draft navigation channel; the Burwood Canal closure to address the threat of capture of the Mississippi River Southwest Pass channel flow; and many dredging and beach nourishment projects and Coastal Wetlands Planning, Protection, and Restoration Act programs for beneficial use of dredge sediments. Other experience includes analysis of salinity intrusion, construction of a sill to stop the saltwater wedge, analysis of channel sedimentation related to sediment diversions. He has developed report on coastal and estuarine related projects, such as tidal inlet studies, marina development, and watershed analysis. He was involved with evaluations and feasibility studies requiring compliance with environmental requirements, including reduction of noise from operations.

As a USACE employee and from private sector projects, he has extensive experience with USACE risk and uncertainty analyses (e.g., Monte Carlo analysis, sensitivity) and coastal engineering requirements for feasibility studies. He was the hydraulics team member on numerous feasibility studies in estuarine, riverine and coastal environments. These included sand placement for beach enhancement and confined placement of fines for marsh creation. He was one of the first engineers at the district to include relative sea level rise as a factor to be considered in analysis of future benefits of projects. Projects with relevance to navigation channels include the proposed Mid-Barataria Sediment Diversion and the Mid-Breton Sediment Diversion.

Dr. Winer has used and is familiar with standard USACE hydraulic/coastal computer models, such as the suite of HEC models, and the ADCIRC model used to quantify risk of storm surge inundation. He has conducted numerical modeling studies, physical modeling studies, and field investigations of coastal processes and engineering structures. He was one of the principal numerical modelers at his USACE district, where he was the first to use the UNET model, which subsequently become part of the HEC-RAS modeling suite. After Hurricane Georges in 1998, he initiated a program to measure hurricane waves on Lake Pontchartrain, which was crucial for designing levees for wave run-up, and successfully measured the waves of Hurricane Katrina.

Dr. Winer is a member of ASCE and served for several years on the Navigation Engineering Committee of the professional society. He has “diplomats” in Port Engineering and Navigation Engineering from the Academy of Coastal, Ocean, Port and Navigation Engineering. He has an extensive list of publications both in peer reviewed journals and conference presentations.

Christopher Brown, Ph.D.	**Geotechnical Engineer**

Dr. Brown has about 30 years of experience in civil engineering, geotechnical engineering, and water resources studies working for the USACE and private sector companies. He is currently a full professor at the University of North Florida.

Dr. Brown holds a PhD in Civil Engineering from the University of Florida, and MA in Civil Engineering from Villanova University, and a BS in Civil Engineering from Temple University. He is a registered PE in Pennsylvania and FL.

Dr. Brown has worked extensively on deep-draft navigation, flood mitigation, inland locks/dams, and hydrologic modeling projects throughout the United States. While on the staff of the USACE Districts, he worked on the following large, deep-draft navigation projects: Delaware River Main Channel Deepening; Chesapeake & Delaware Canal Deepening Study; Canaveral Harbor entrance modifications; Tampa Bay Harbor Deepening; and Jacksonville, FL Harbor Deepening. These projects included planning and overseeing subsurface investigations and data collection; extensive soil modeling; slope stability modeling (University of Texas at Austin and GEOSLOPE International Ltd.); and channel design of anchorages, bend widenings, and harbor entrance modifications (e.g. jetties, armoring). He also has experience in hydrology and hydraulics modeling that would benefit this review.

As part of the Delaware River Main Channel Deepening, Dr. Brown worked on bedrock and blasting evaluations for the Marcus Hook anchorage improvements and channel improvements. Geophysical investigations were used to determine the rock depth and hardness. Seismic study data were used to evaluate if rock could be conventionally excavated or required blasting. For the proposed Chesapeake & Delaware Deepening Study, he devised the complete dredged material management plan, which included groundwater modeling of a few confined disposal facilities that were a potential risk to groundwater. In addition, he was one of the first engineers in Philadelphia District to use three-dimensional Computer Aided Design and Drafting design for the layout of the modified confined disposal facilities as well as for channel design. For the Tampa Bay Harbor DP, he worked on subsurface explorations for an island confined disposal area. These included test pits, core borings, and cone penetrometer tests. These data were utilized to perform seepage modeling and slope stability evaluations. For the Jacksonville Harbor DP, which is currently under construction, he developed initial plans for the dredged material disposal including construction of a few beneficial use sites as well as an expansion/raising of an older confined disposal facility located on an island in the river. He has also been a leader in risk-based design. He first used Monte-Carlo simulations for the design and modification of the Canaveral Harbor South Jetty in 2003, before any USACE regulations existed on how to do such evaluations. Since that time, he has included risk-based design in all his projects using custom Visual Basic programs, @Risk, and Crystal Ball to model risk and uncertainty. He now includes the teaching of risk-based design in his senior elective courses and graduate courses. Dr. Brown also has experience with USACE hydraulics and hydrology models.

Dr. Brown has published more than 50 papers in well-known journals and in peer-reviewed conference, Procedia. Dr. Brown has notable papers published in Environmental Earth Sciences, Journal of Hydrology, Water Resources Management, and many others. He currently has several papers in review regarding geotechnical and water resources simulations of dam/lock spillways. He actively participates in SAME, American Water Resources Association (AWRA), and ASCE - GeoCon (presented at the 2018 Annual Conference) and a past member of ASCE and the Florida Academy of Sciences (FAS). For 7 years, he was the “Geosciences” representative for the FAS.