APPENDIX N

CLEAN AIR ACT COMPLIANCE DOCUMENTS

United States Army Corps of Engineers, New York District
DRAFT General Conformity Determination Notice

On October 30, 2012, New York State (DR-4085) and New Jersey State (DR-4086) declared Super Storm Sandy a Major Disaster. In response to the unprecedented breadth and scope of the damages sustained along the New York and New Jersey coastlines, the U.S. Congress passed Public Law (PL) 113-2 "Disaster Relief Appropriations Act 2013", also known as House Resolution (H.R.) 152-2 Title II which was signed into law on January 29, 2013. PL 113-2, which states "That the amounts... are designated by the Congress as being for an emergency requirement pursuant to section 251(b)(2)(A)(i) of the Balanced Budget and Emergency Deficit Control Act of 1985", provides funding for numerous projects to repair, restore and fortify the coastline in both states as a result of the continuing emergency as people and property along the coast remain in a vulnerable condition until the coastline is restored and fortified. To protect the investments by the Federal, State, local governments and individuals to rebuild damaged sites, it is imperative that these emergency disaster relief projects proceed as expeditiously as possible.

There are two coastal projects that are concurrently going through the Reformulation Study process at the New York District. The Fire Island Inlet to Montauk Point, New York Combined Beach Erosion Control and Hurricane Protection Project (FIMP) study is called a Reformulation, because it seeks to reexamine the Project that was originally formulated in the 1950's. This Reformulation came about in part due to a referral to the Council on Environmental Quality (CEQ) in response to a 1978 Environmental Impact Statement (EIS) that was prepared for the project subsequent to passage of NEPA in 1969. FIMP-related activities are located in Suffolk County, New York and was originally authorized under the River and Harbor Act of 14 July 1960, and subsequently modified in accordance with Section 103 of the River and Harbor Act of 12 October 1962. The project authorization was modified again by Section 31 of the Water Resources Development Act (WRDA) of 1974. The authorization was further modified by section 502 of the WRDA of 1986 (P.L. 99-662). For portions of Fire Island to Montauk Point, other than the portion from Moriches Inlet to Shinnecock Inlet, Section 103 of the WRDA of 1986 (P.L. 99-662) defined the cost sharing of the first cost to be 65 percent Federal. In addition, Section 156 of the WRDA of 1976, as modified by Section 934 of the WRDA 1986, modifies the existing authorization to provide for continued renourishment not to exceed 50 years from initiation of construction of each of these reaches. The WRDA of 1992 further modified the project to extend the period of periodic nourishment to 30 years from the date of project completion for Moriches to Shinnecock Inlet, with the non-Federal share not to exceed 35 percent of the total project cost. The WRDA of 1999 further modified the project authorization, requiring the Corps to submit to Congress a mutually acceptable plan for the Fire Island Inlet to Moriches Inlet Reach.

FIMP is a Reformulation Study project that is anticipated to start construction during or after October 2018 and this document represents the General Conformity Determination required under 40CFR§93.154 by the United States Army Corps of Engineers (USACE). USACE is the lead Federal agency that will contract, oversee, approve, and fund the project's work, and thus is responsible for making the General Conformity determination for this project.

USACE has coordinated this determination with the New York State Department of Environmental Conservation (NYSDEC) and United States Environmental Protection Agency (EPA) Region 2. Based on the National Ambient Air Quality Standards (NAAQS), Suffolk County is currently classified as 'marginal' nonattainment for the 2008 8-hour ozone standard and 'maintenance' of the 2006 particulate matter less than 2.5 microns ($PM_{2.5}$) standard (40CFR§81.333). The county is part of the Ozone Transport Region. Ozone is controlled through the regulation of its precursor emissions, which include oxides of nitrogen (NO_x) and volatile organic compounds (VOC). Sulfur dioxide (SO_2) is a precursor for $PM_{2.5}$.

The equipment associated with this project that is evaluated under General Conformity (40CFR§93.153) includes direct and indirect nonroad diesel sources, such as dredging equipment and land based earth-moving equipment. The primary pollutant of concern with this type of equipment is NO_x, as VOCs, $PM_{2.5}$, and SO_2 are generated at significantly lower rates. The NO_x emissions associated with the project are estimated to range from nearly 15 to 242 tons per calendar year for 2018 through 2025, (see emissions estimates provided as Attachment A). The project exceeds the NO_x trigger level of 100 tons in any calendar year and as a result, the USACE is required to fully offset the NO_x emissions of this project. The project does not exceed the ozone related VOC trigger level of 50 tons (for areas in an ozone transport region) in any calendar year, nor the $PM_{2.5}$ and SO_2 maintenance areas' related triggers level of 100 tons in any calendar year, per pollutant.

The USACE is committed to fully offsetting the emissions generated as a result of the disaster relief and coastal protection work associated with this project. USACE recognizes that the feasibility and cost-effectiveness of each offset option is influenced by whether the emission reductions can be achieved without introducing delay to the construction schedule that would prevent timely implementation of the project to protect the coastline from future storm events.

USACE will demonstrate conformity with the New York State Implementation Plan by utilizing the emission offset options listed below. The demonstration can consist of any combination of options, and is not required to include all or any single options to meet conformity. The options for meeting general conformity requirements include the following:

a. Emission reductions from project and/or non-project related sources in an appropriately close vicinity to the project location. In assessing the potential impact of this offset option on the construction schedule, USACE recognizes the possibility of lengthening the time period in which offsets can be generated as appropriate and allowable under the general conformity rule (40CFR§93.163 and §93.165).
b. Use of Surplus NOx Emission Offsets (SNEOs) generated under the Harbor Deepening Project (HDP). As part of the mitigation of the HDP, USACE and the Port Authority of New York & New Jersey developed emission reduction programs coordinated through the Regional Air Team (RAT). The RAT is comprised of the USACE, New York State Department of Environmental Conservation, NJDEP, United States Environmental Protection Agency (EPA), and other stakeholders. SNEOs will be applied in concurrence with the agreed upon SNEO Protocols to ensure the offsets are real, surplus, and not double counted.

c. Use of Cross-State Air Pollution Rule (CSAPR) ozone season NO_x Allowances with a distance ratio applied to allowances, similar to the one used by stationary sources.

Due to unpredictable nature of dredge-related construction and the preliminary estimates of sand required to restore the integrity of the coastlines, the project emissions will be monitored as appropriate and regularly reported to the RAT to assist the USACE in ensuring that the project is fully offset.

In summary, USACE will achieve conformity for NO_x using the options outlined above, as coordinated with the NYSDEC and coordinated through the RAT.

Attachment A

Bob Martin, Commissioner, NJDEP Letter to Colonel Paul E. Owen, P.E., Commander New York District, USACE and Lieutenant Colonel John C. Becking, PE., Commander Philadelphia District, USACE

November 4, 2013

Attachment B

General Conformity Related Emission Estimates

DRAFT

MARINE VESSEL ENGINE REPLACEMENT PLAN

July 2016

NEW YORK DISTRICT
UNITED STATES ARMY CORPS OF ENGINEERS

Table of Contents

Section 1 – Introduction

The Marine Vessel Emissions Reduction Plan (MVERP) was one of the primary emission reduction strategies implemented by the United States Army Corps of Engineers (USACE) New York District (NAN) and the Port Authority of New York & New Jersey (PANYNJ) as part of the Harbor Deepening Project[1] (HDP) in order to meet the requirements of General Conformity.[2] The HDP MVERP was led by the non-federal sponsor, PANYNJ, and paid for engine replacements for domestic commercial vessels operating in the New York-Northern New Jersey-Long Island-Connecticut ozone nonattainment area (NYNJLICTNA). The MVERPs undertaken for the HDP were conducted under the larger Harbor Air Management Plan (HAMP) and coordinated with the Regional Air Team (RAT).

The basic concept of the strategy is to replace older, "dirtier" engines with newer, "cleaner" engines meeting higher regulatory standards established by the U.S. Environmental Protection Agency (EPA). The PANYNJ developed, awarded, and managed the MVERPs for the HDP. The evaluation and award of the vessels to be repowered was conducted through a request for proposal (RFP) process and utilized the same basic methods used by the California Air Resources Board (CARB) Carl Moyer Program[3]. The difference between the MVERP and Carl Moyer Program is the funding levels, as the Carl Moyer Program provides financial assistance while MVERP is specifically designed to undertake action to generate emissions offsets by funding 100% of the new engine costs, with the vessel owner typically paying for the destruction of the existing engine, dry dock costs (both removal and installation), and any gearing or equipment changes needed with the new engines. In return the vessel owner provides operational data and confirmation that the vessel has remained in operation in the applicable or adjacent nonattainment area on a quarter-annual basis. MVERP has been demonstrated to be one of the most cost effective strategies to reduce emissions and generate long-term emissions offsets.

The purpose of this document is to move beyond the HDP and provide the approach for evaluating the feasibility of integrating similar mitigation requirements to reduce NOx for NAN projects that trigger General Conformity, and for implementing, tracking, and coordinating with the RAT to ensure that the mitigation requirements are met for the specific project. Specifically, this report has been prepared for the Fire Island to Montauk Point (FIMP) project, which is currently conducting analyses within the General Re-evaluation Report (GRR) authorized study process.

This section provides background on the project and overviews relating to General Conformity and the Regional Air Team.

[1] See: *www.nan.usace.army.mil/Media/FactSheets/FactSheetArticleView/tabid/11241/Article/487407/fact-sheet-new-york-new-jersey-harbor-50-ft-deepening.aspx*
[2] 40 CFR §93 Subpart B
[3] See: *www.arb.ca.gov/msprog/moyer/source_categories/moyer_sc_marine.htm*

1.2 – Background

This section needs to recount how we got here: the NAN-EPA agreement that permitted SANDY projects to proceed to construction using reallocation of HDP offsets, with the commitment by USACE to seek authorization for two new MVERPs, etc.

1.3 – General Conformity

The General Conformity rule of the CAA applies to Federal actions, such as beach-related construction projects that occur within an EPA designated nonattainment area. A nonattainment area is a region that fails to meet one or more national standards for designated air pollutants. A State Implementation Plan (SIP) is a state-prepared, EPA-approved plan whereby the state (in this case, New York) presents their specific plans and schedules for bringing the nonattainment area into compliance with the national standards. The General Conformity rule requires that a Federal action not interfere with or hinder progress of a SIP in reaching attainment with the national standards. This is ensured by requiring mitigation of the Federal action's emissions if the action's emissions are anticipated to exceed General Conformity trigger levels,[4] unless at least one of the following conditions is met:

- The action is exempt (meets an exemption listed in 40 CFR §93.153(c)),
- The action is incorporated as a "line item" in the applicable SIP,
- The emissions from the action can be accommodated in the applicable SIP without jeopardizing the attainment of the standard.

The mitigation requirements are to fully and contemporaneously reduce emissions from the project or to offset the emissions using other strategies, such that there will be no net increase in emissions on a calendar year basis. General Conformity provides provisions for reductions in calendar years other than the year of the action provided appropriate ratios are used based on the nonattainment area's severity level and approval by the applicable State.[5]

The FIMP project, which is in the GRR study phase, will be undertaken in the NYNJLICTNA. The NYNJLICTNA is adjacent to the Philadelphia-Wilmington-Atlantic City ozone nonattainment area (PANJMDDENA). Due to the potential scale of the project, NAN anticipates that the project will trigger General Conformity requirements and that the applicable project emissions are not included in, nor can be accommodated by, the applicable SIP, and the project is not otherwise exempt. Therefore, the project's applicable emissions will need to be fully offset. During the implementation of the HDP, the RAT developed a number of applicable and precedent-setting policies and protocols that have been successfully utilized to ensure that a Federal action's emissions are fully offset, which is further discussed in Section 1.4. FIMP will utilize these policies and protocols to ensure compliance with General Conformity.

[4] 40 CFR §93.153(b)
[5] 40 CFR §93.163

1.4 – Regional Air Team

The RAT was formed in October 2001 to provide a forum for open communication and coordination between NAN, PANYNJ, and the resource agencies regarding air quality issues. Initially the RAT focused directly on General Conformity relating to the HDP, but the RAT has continued to meet regularly and has developed detailed policy protocols associated with emissions offsets and mitigation strategies. The members of the RAT include the following entities:

- EPA Region 2
- NAN (Chair)
- New Jersey Department of Environmental Protection (NJDEP), New Jersey Department Office of Marine Resources
- New York City Department of Transportation (NYCDOT)
- New York State Department of Environmental Conservation (NYSDEC)
- PANYNJ
- Philadelphia District Corps of Engineers (NAP)

The RAT is hosted and administered by NAN and other agencies, such as the New Jersey Department Office of Marine Resources, have joined and left the group as their projects have ended over time. The RAT has been the focal point for the development, review, and implementation of unique policy approaches related to General Conformity relating to the and beyond the HDP including: the Harbor Air Management Plan (HAMP), development, implementation, and reporting of various emissions reduction strategies, the development and implementation of the Surplus Nitrogen Oxides (NOx) Offset (SNEO) Protocol (see Attachment 1), and the quantification, tracking, and reporting of emissions and offsets for applicable projects in New York and New Jersey. RAT meetings are scheduled on an as-needed basis and historically occurred from monthly to quarterly. The RAT's primary responsibilities are:

- Provide technical and policy support to clarify and agree upon General Conformity requirements specific to projects by member agencies
- Provide review and comment on emission mitigation strategies and implementation
- Provide oversight to the SNEO Protocol
- Provide oversight and review to project emissions and offsets
- Support the development of implementable mitigation strategies to ensure each project meet General Conformity requirements
- Provide a forum for member agencies and other related agencies to discuss air quality issues, mitigation strategies, and related topics with the resource agencies

With the advent of the large Hurricane Sandy authorized but unconstructed (ABU) projects along the New Jersey and New York coasts, covering both NAN and NAP Districts, the sponsors of these projects jointly developed mitigation strategies and coordinated these strategies with the RAT. The projects are currently being implemented and mitigation is being reported and tracked through the RAT. One of the major policy efforts that the RAT produced was the Surplus NOx Emission Offsets (SNEO) Protocol, which was completed in May 2014 and which details a continuing emissions reduction offset program for activities that fall under General Conformity requirements and that are overseen/managed by the USACE, as allowed under 40 CFR §93.160-165. The offsets created under the SNEO protocols and their use will be coordinated through the RAT and be consistent with the applicable General Conformity requirements. The SNEO Protocol details the generation of NOx offsets, their use and limitations, their geographical extent, and the life of offset strategies.

The development and implementation of FIMP mitigation strategies will be coordinated with the RAT and be developed under the SNEO Protocol.

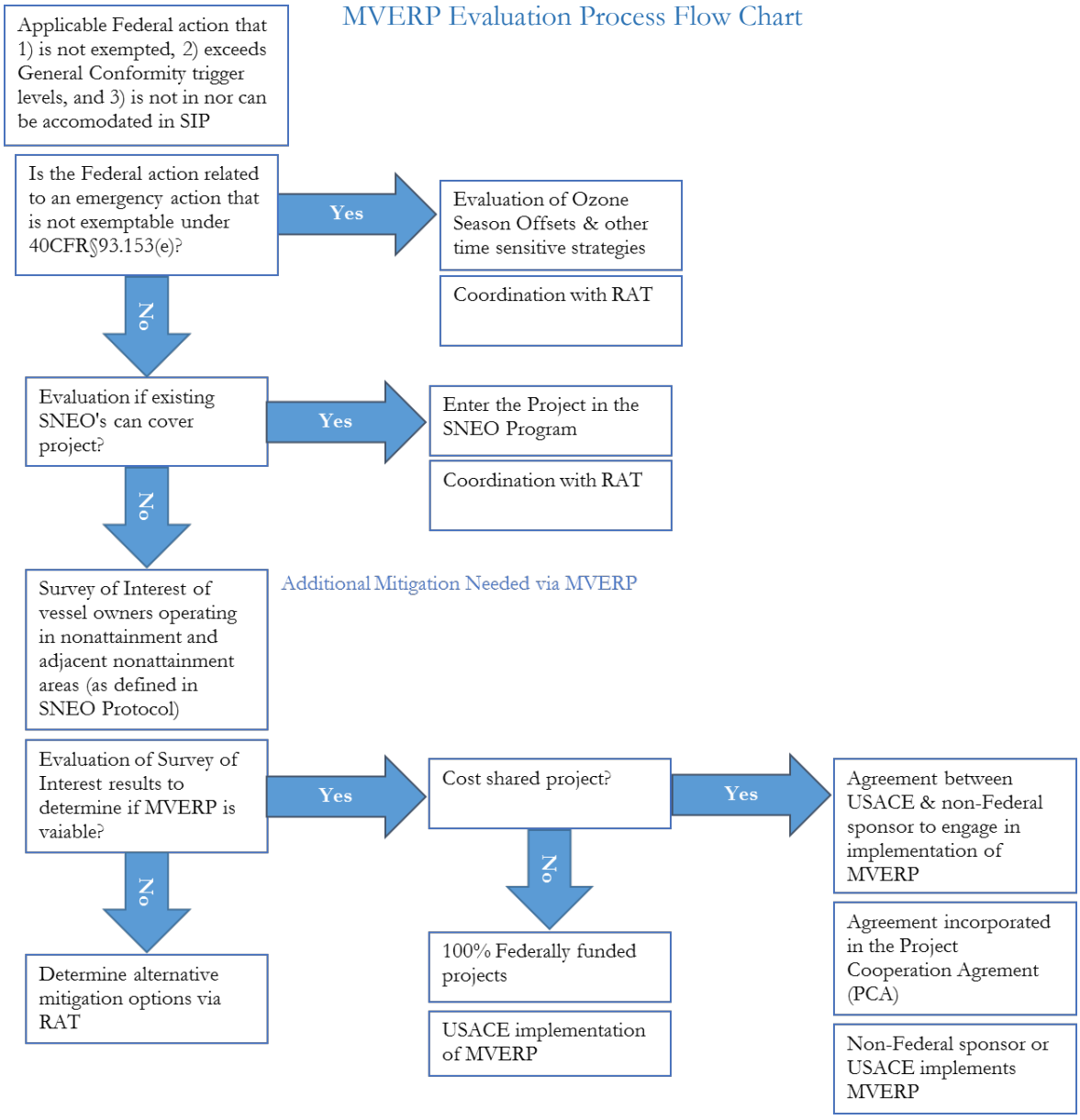
Section 2 – MVERP Methods and Protocols

This section provides an overview of the greater evaluation process to determine the viability of MVERP for a specific project, details the implementation process, identifies costing elements, and identifies overall timeline ranges for key elements.

2.1 – Evaluation of MVERP as a Viable Mitigation Strategy

The overall MVERP process builds on the experience, methods, protocols, and tools developed to track and report on the various projects that have been coordinated through the RAT. The first steps are to evaluate whether the project needs mitigation, evaluate the options, determine whether an MVERP is viable (in that a significant amount of offsets can be generated), and then implement the MVERP (Figure 1).

Figure 1 –
MVERP Evaluation Process Flow Chart



In general, applicable Federal actions[6] undertaken by the USACE that exceed the General Conformity trigger levels, and are not included in nor can be accommodated in the applicable SIP, will require mitigation. If the applicable Federal action is taken in response to a continuing emergency but does not meet the definition of "Emergency Action[7]," similar to the extended Hurricane Sandy ABUs, then the project's sponsors can evaluate the utilization of ozone season offsets and other time sensitive emissions offset strategies through coordination and agreement with the RAT. For non-emergency/longer term projects, the applicable Federal action is evaluated to determine what, if any, of its anticipated emissions can be covered under the SNEO Protocols or other emissions offset strategies. This determination would be coordinated with the RAT.

For any excess of applicable emissions beyond what can be covered by SNEOs, the USACE would need to first determine the feasibility of an MVERP by conducting a "Survey of Interest" of vessel owners in the applicable nonattainment area(s). The next step would be to evaluate the responses to determine the potential magnitude of offsets that could be generated. If the magnitude of potential offsets is significant, then an MVERP is viable. For projects that are cost shared, the USACE and the non-Federal sponsor would develop Terms and Conditions that would be entered into the Project Partnership Agreement (PPA) and either the non-Federal sponsor or USACE would implement the MVERP, as agreed in the PPA. For 100% Federally funded projects, the USACE would implement the MVERP. For projects for which an MVERP is not viable, other mitigation options would need to be discussed and evaluated through the RAT.

2.1.1 – Survey of Interest

The objective of a Survey of Interest is to determine whether an MVERP is a viable emission offset strategy for a specific project. Viable in this sense is that there are a sufficient number of applicable vessels and owners interested in repowering, such that implementing an MVERP would produce enough emission reductions to make sense as a mitigation strategy.

The steps in conducting the survey include:

1. Identify vessel owners in the applicable nonattainment area(s)
2. Develop a fact sheet outlining key points of the potential MVERP
3. Conduct the survey
4. Aggregate the responses and determine the potential number of applicable vessels

The primary data elements that need to be collected for the survey include:

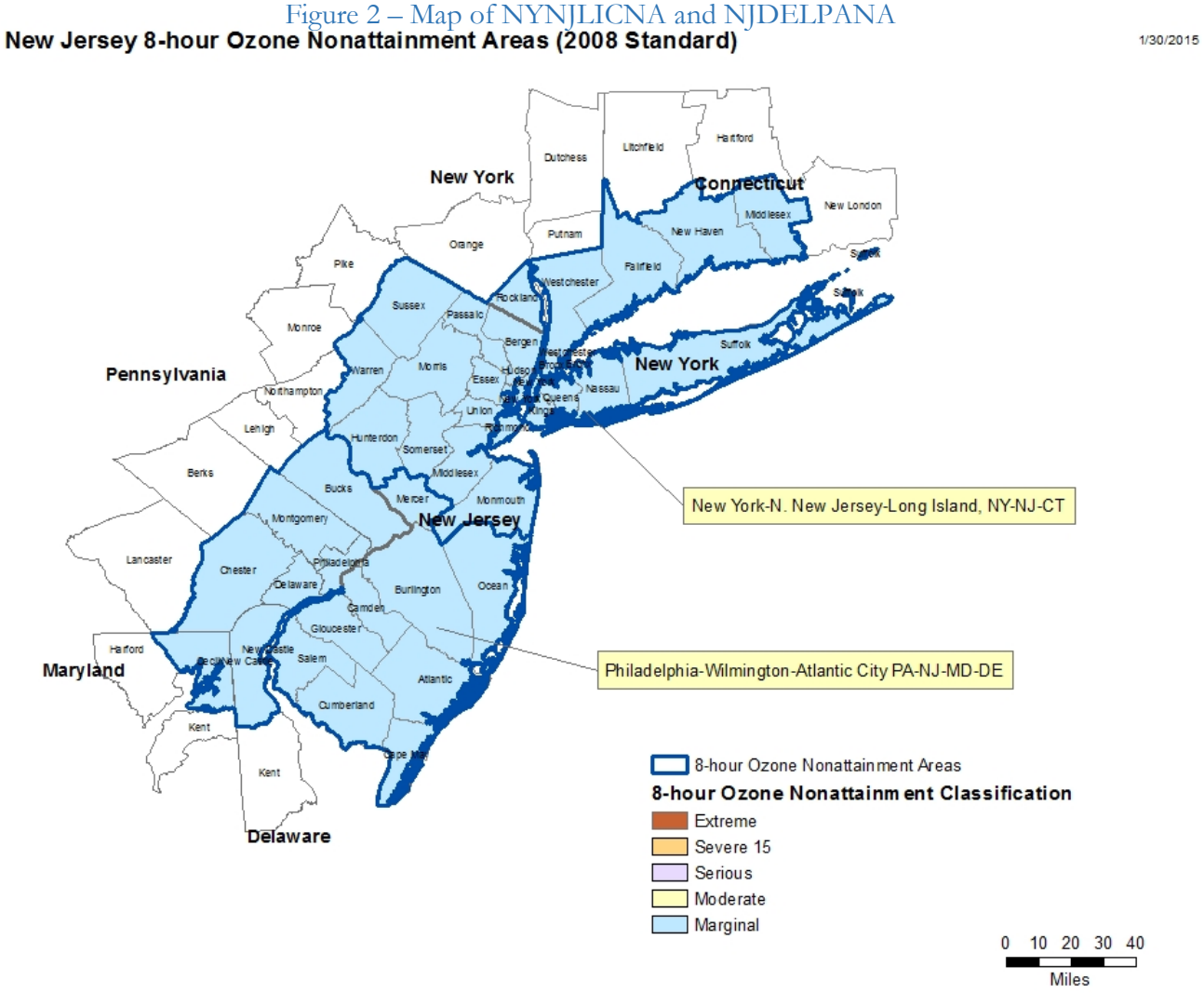
1. Company name and contact information (contact name, address, phone number, email address, etc.)
2. Company vessel type(s) (tugboat, excursion, dredge, pilot boat, etc.)
3. Number of total company vessels
4. Interest in the program (yes/no/maybe)
5. Percent time operated in applicable nonattainment area(s)
6. Specific vessel information for vessels the owner is interested in repowering (name, vessel type, number of propulsion engines, number of auxiliary engines, model years,

[6] As defined in 40 CFR §93.152-153
[7] As defined in 40 CFR §93.153(e)

power ratings, makes and models, and average operating hours in nonattainment area(s))

For FIMP, a Survey of Interest was conducted in July and August 2015. The first step to the survey was to list the names and contact phone number for vessel owners and operators in the geographic area. The Waterborne Transportation Lines of the United States, Volume 2 (Vessel Company Summary)[8] was used to identify potential vessel owners. Approximately 105 vessel owners and operators in the NYNJLICTNA and PANJMDDENA areas[9] (Figure 2) were contacted to determine interest in future repower projects.

Figure 2 – Map of NYNJLICNA and NJDELPANA



Once the contact list was completed, a fact sheet was developed (provided as Attachment 2) to introduce the program and help answer initial questions the vessel owners/operators may have. A template for collecting data was also developed to enable engine information to be collected in a uniform manner for proposed vessels and engines. The completed data template is included as Attachment 3.

[8] See: *www.navigationdatacenter.us/veslchar/veslchar.htm*
[9] See: *www.epa.gov/airquality/greenbook/nj8_2008.html*

The vessel owners/operators were contacted initially by phone and in most cases, followed up by an email and second phone call. The names of the 104 vessel owners/operators that were identified and contacted for the survey are listed below:

A&S Transportation
All Pro Marine Contracting
American RoRo Carrier
Arthur H Sulzer Associates
Atlantic Gulf Towing
Atlantic Subsea
Atlas Holding One
Bay Tours
Block Island Ferry
BMS Riverside
Boston Marine Transport
Bouchard Transportation
Breakwater Marine Construction
Bren Transp Corp
Bridgeport-Port Jeff. Steamboat
Brooklyn Marlyn Boats
Brown Thomas J & Sons
Buchanan Marine
Buck's County Riverboat
Caddel Dry Dock and Repair
Circle Line
Coastline Marine Towing
Construction & Marine
Costello Marine Contracting
Cross Sound Ferry Service
D'Onofrio General Contractors
Delaware Bay Launch Service
Delaware River & Bay Authority
Delaware River Port Authority
Disch Construction
Donjon Marine
Eastern Barge Services
Eshendfelder, Peter
Fire Island Ferries
Fischer, Frederic
Fishers Island Ferry District
Fox Marine
Gateway Towing
Gellatly & Criscione Services
Gladsky Marine
Governors Island Corp
Greater Marine Transportation
Greenwich CT, Dept Park & Rect
Harley Marine
Hays Tug & Launch Service
Henry Marine Service
Hudson Cruises
Hudson Highlands Cruises
Hueber Launch Services
Hughes Bros
Hunt Marine
Island Princess
JJC Boats
Kearny Barge Co
Ken's Booming and Boat
Kirby Offshore Marine
Lafarge Building Materials
Lehigh Maritime Corp
Liberty Fleet
Lomma Construction
Marine Environmental
Marine Oils Service of NY
Marine Steel Transport
Maritime Transport
McAllister Towing & Transportation
Metropolitan Marine Transp
Miller's Launch
Mohawk Northeast
Moran Towing
Morning Cheer
Mothers Towing
New York City
Northstar Marine
NYWT Shark and NWT Zephyr
Oceanside Marine
Pappy's Lady
Pleasure Boat Cruises
Poling & Cutler Marine
Port Imperial Ferry (NY Waterway)
Premier Yachts (Spirit Cruises)
R.B. Conway & Sons
Reinauer Transportation Co.
Reynolds Shipyard Co.
Riverboat Tours
Sea Streak
Sea Wolf Marine Transp
Seaboard Barge Corp
Skyline Cruise Lines
Specialist
Statue of Liberty
T&C Towing
Tappan Zee Constructors
Tioga Construction
Tony's Barge Service
Tucker - Roy Marine Towing
Tyler's Cruises
USS Chartering
Vane Line Bunkering
Viking Fleet
Vinik Marine
Weeks Marine
White Near Coastal Towing Co
Willis, C.G.
Willoughby Spit
Wilmington Tug
World Yacht Cruises

The response rate of the survey was 61% and the following table summarizes the general survey responses.

Table 1 - Responses

Reponses	Count	Percent
Yes, interested in repowering	49	47%
No, not interested in the program	11	11%
Not eligible	3	3%
Did not provide a response	41	39%
Owners/operators contacted	104	100%

Out of the interested vessel owners/operators that provided specific engine data, a total of 170 engines were identified. Table 2 provides summary data regarding type, count, average model year, engine rating, and operating hours in the nonattainment areas of interest. It should be noted that this is not a complete total engine count because not all of those interested provided engine data.

Table 2 – Summary of Identified Engines

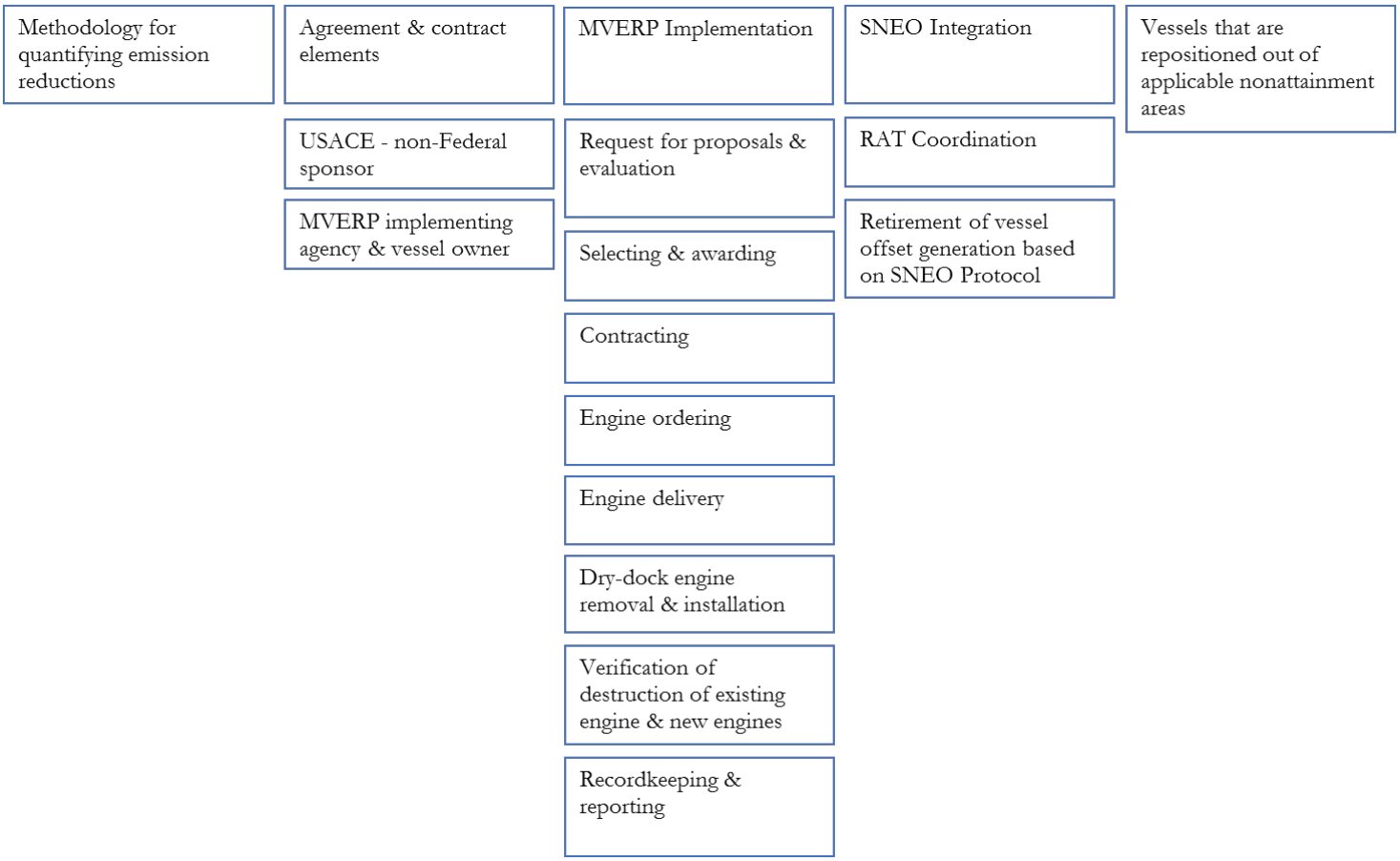
Engine Type	Count	Average Model Year	Average Engine Rating hp	Average Operating Hours
Auxiliary	71	1990	547	4,004
Propulsion	99	1985	1,447	2,989

The results from the FIMP-related Survey of Interest indicate that there is a substantial number of potential engine replacements that could be effectively utilized to create emissions offsets, making MVERP a viable strategy from the opportunity perspective. . An uncertainty is that the project timeline is not fully known; however, it is favorable that the project is still undergoing the GRR and the draft environmental impact statement (DEIS) processes, as the implementation of an MVERP takes time to fully implement (see Section 4).

2.2 – Elements of MVERP Implementation Process

Several major elements need to be considered and undertaken to successfully implement an MVERP. These elements are identified in Figure 3 and detailed further in the following subsections.

Figure 3 – Major Elements of MVERP



2.2.1 – Methodology for Quantifying Emission Offsets

Emission offsets are the difference between what the new engine emits while in service within the overwater boundary and what the old (replaced) engine would have emitted if it were still in service. It will be necessary to have detailed information on the old (existing) engine and on the proposed replacement engine in order to characterize their emissions on an hourly and annual basis. This information will be needed to assist in ranking the MVERP participation proposals. Details are provided in later sections.

The steps in determining potential and actual emission offset production are as follows:

1. Establish baseline emissions of the existing engine – based on tier level (or build year), horsepower, duty cycle (i.e., propulsion or auxiliary, etc.). Characterize emissions on an hourly basis (pounds per hour) and on an annual basis (tons per year) according to the average number of hours worked per year over the past five

years. This will be done during MVERP proposal evaluation based on submitted information.

2. Determine potential offset production by estimating emissions from the replacement engine operating the same number of hours per year as the existing engine, and subtracting these emissions from the baseline emissions. The difference is the potential annual offset production and will be calculated during MVERP proposal evaluation as part of the ranking process.

3. Once the replacement engine is in service, the operator will track usage (hours) within the overwater boundary each month, and report quarterly on the previous three months of activity. Actual offset production will be determined by:

    a. calculating emissions from the replacement engine over the reporting period,
    b. calculating emissions that would have occurred from the original (replaced) engine, and
    c. subtracting the replacement engine's emissions from the emissions the original engine would have produced over the same period.

The calculated offsets will be available on an annual basis, with the mid-year review used as a monitoring tool to assess whether the offsets actually produced are on track to correspond with the potential offsets calculated during the proposal evaluation phase.

2.2.2 – Agreement and Contracting Elements

Several agreement and contract elements need to be completed in conjunction with implementing an MVERP. These elements include the USACE and non-Federal sponsor agreements, the contracts between the Implementing Agency and the vessel owner, the project bid package, and the project contract. This section provides details while examples, where available, are provided as attachments.

2.2.2.1 – USACE and Non-Federal Sponsor

The agreements between the USACE and the non-federal sponsor that need to reflect the implementation of an MVERP is the Project Cooperation Agreement (PCA).

2.2.2.2 –Implementing Agency & Vessel Owner

The Implementing Agency, either the non-Federal sponsor or USACE, will need to have a contract with the selected and awarded vessel owners. The contract should reference the Terms and Conditions that are required by the MVERP (Section 2.2.3.1) and provide all necessary language needed by the Implementing Agency in order to execute the transfer of funds for the purchase of new engines. An example contract from the PANYNJ MVERP is provided as Attachment 4.

2.2.2.3 –Project Bid Package Elements

The bid package for a Federal action-related project, typically a construction project, for which an MVERP is planned as a mitigation strategy to meet General Conformity requirements should contain conditions to require bidders to provide information such that emissions from performance of the project can be estimated. The information is typically provided using project-specific calculators such as have been used on HDP and Hurricane Sandy ABUs. The bidder is required, as part of a complete bid package, to submit a completed bid calculator that estimates the project emissions by calendar year. The data required includes:

1. Anticipated equipment type (e.g., backhoe, excavator, etc.) or vessel name and type (dredge, crew boat, survey boat, etc.)
2. Anticipated engine specific information (for each associated engine) such as
    a. Horsepower rating
    b. Model year
    c. EPA Tier (anticipated for the project)
    d. Number of hours, by calendar year

Language in the bid packages should require the bidder to provide a completed emissions calculator and the language should make clear that proposals that do not include a completed emissions calculator will be deemed incomplete and rejected.

Example emissions calculator bid package requirements are provided in Attachment 5.

2.2.2.4 –Project Contracting Elements

The contract for the awarded project should require the prime contractor to submit the USACE provided monthly contract emissions calculator by the 10th of each month once the project has started until the project is completed. The contract emissions calculator submittal should be certified by the contractor as accurate and auditable. The prime contractor is responsible for including all vessel and equipment engines used on the project, including equipment used by subcontractors, and submitting the calculator to the USACE Construction Division Contracting Officer Representative COR). The submitted calculator should include a list of all construction related equipment and associated vessels that worked on the project site for the preceding month, as well as the following parameters for each piece of equipment and engine:

1. Equipment identification number or vessel name
2. Equipment/vessel type (excavator, backhoe, dredge, crew boat, etc.)
3. Power rating of engine (horsepower)
4. Engine model year
5. EPA Tier, if known
6. Hours of operation for the preceding month
7. Hours of operation for the year, up to the preceding moth
8. Estimate for remaining calendar year

This data is used to track the project-related emissions and determines the actual amount of emissions offsets needed each year. The contract language should clearly require the prime contractor to submit the completed and certified calculator in a timely manner each month.

Example project emissions calculator contract requirements are provided in Attachment 5.

2.2.3 – MVERP Implementation

Implementation of a successful MVERP requires several elements to be prepared and coordinated. These elements include the Terms and Conditions; a request for proposal process; an evaluation and selection process; contracting, engine ordering, delivery, and dry dock; verification of existing engine destruction; various record keeping and reporting requirements; and coordination with the RAT. These elements are further detailed below.

2.2.3.1 – Terms and Conditions

Prior to issuing a public RFP, the USACE and non-Federal sponsor (as applicable) should agree on the Terms and Conditions of the MVERP, which should include the following, at a minimum:

1. Delineate the operational requirements. Two key elements to the effectiveness of an MVERP are the number of hours the awarded vessel operates in the nonattainment area (overwater boundary), as a percentage of the vessel's total annual operational time, and the size of the engines. Therefore, the goal is to find vessels with the largest engines that have a high percentage of their operational hours within the applicable overwater boundary.

   The operational requirements typically establish the targeted percentage of operational time within the overwater boundary. The higher the percentage of operational time in the applicable overwater boundary the higher the potential offset generation. The original PANYNJ MVERP program, set this criteria at 90% of operational time within the applicable overwater boundary and in later rounds this was reduced ultimately to 70%. Analysis can be conducted with the data provided in the Survey of Interest to develop ranges that are likely to produce the most effective candidate vessels during the RFP process. It should be noted that setting the operational limitation too high will filter out viable vessels with lower operational times in the applicable overwater boundary. Therefore, it is suggested not setting the requirement significantly higher than 70% as this allows for a broader set of vessels to apply and be evaluated, from which the ultimate selection and awards can be made.

The other key element relating to operational requirements is the term during which the vessel is required to operate within the overwater boundary, which is typically 10 years. To maximize mitigation funding, the MVERP targets vessels that work within the overwater boundary continuously, because when the vessels are outside the overwater boundary, no offsets are being generated for the funding project. Therefore, the Terms and Conditions should set a requirement of 10 years within the overwater boundary and the contract should have the same term.

2. Delineate the applicable nonattainment area(s) in which the operational requirements apply, including the overwater boundary and the seaward distance from shore. This distance is typically three nautical miles (nm), but this should be discussed and confirmed with the RAT. National Oceanic and Atmospheric Agency (NOAA) navigational charts[10] should be used and incorporated into the Terms and Conditions.

3. Specify the disposition of the existing engines once removed from the awarded vessel. Typically, certified engine destruction is required, where the engine block is cut and rendered nonfunctional/not repairable. The vessel owner should be required to provide the certificate and photographs to confirm the engines are no longer operational; this condition should be tied to the payment schedule.

   In some cases, EPA Tier 2 or Tier 3 engines may be replaced, which may provide benefits in other applications within or outside of the applicable nonattainment area(s). In anticipation of these cases, the Terms and Conditions should leave open the possibility of discussing with the RAT whether these engines can provide emissions benefits by replacing lower-tiered engines within the nonattainment area or in another area (and not be allowed to return), or whether they should be destroyed as discussed above. This case would not be known prior to issuing an RFP so the Terms and Conditions should not be written so restrictively that engine destruction is the only option.

4. Require winning bidders to provide sales invoices for the engines specified in the proposal for the vessel. This will document for the Implementing Agency that the engines in the proposal, which were the basis of the award, are actually ordered and delivered. For the latter, the vessel owner should provide proof that the invoiced engines were delivered to the shipyard performing the engine replacement. Photographs of the engines and the nameplates should be provided.

5. Require winning bidders to identify the shipyard that the vessel owner has contracted with to complete the engine replacements and provide the anticipated dates of the replacement. The vessel owner should also grant the

[10] See: *www.charts.noaa.gov/InteractiveCatalog/nrnc.shtml*

Implementing Agency the right to visit the shipyard during the engine replacement to observe and verify that the engine replacements are consistent with the proposal.

6. Delineate recordkeeping and reporting requirements for the pre-engine replacement process, the engine replacement process, and during the operational phase to the end of the contract term. The pre-engine replacement process includes ordering the proposed engines, providing the final invoice and proof of payment, providing engine details, notification of the anticipated delivery date, dry dock schedule, and other associated elements prior to the actual engine replacement phase at the dry dock. During the engine replacement phase, information such as the dry dock schedules, start of work, date of removal of existing engines, date and certification of engine destruction, dry dock completion date, sea trial dates, results of sea trials, and when the vessel is cleared by the United States Coast Guard for full operation. The owner should be compelled to inform the Implementing Agency of any changes to these dates.

   The vessel owner must document the hours of engine operation and percent of operating time in the overwater boundary in order to quantify the generation of emission offsets. This data needs to be submitted every quarter of each year of the contracted term. The owner also must agree that the data underlying the operating hours and percent time in the overwater boundary is auditable. To confirm the time in the overwater boundary, the vessel must have an Automated Identification System (AIS) and the data from that system must be made available, as needed, to confirm the vessels time in the overwater boundary. AIS equipment is required on all commercial vessels.

7. Delineate a repayment schedule to apply if the awarded vessel is moved out of the overwater boundary prior to the completion of the term of the operational requirements. This condition is to avoid the situation of paying for new engines and then having the awarded vessel's operating area moved outside the overwater boundary. The Implementing Agency can develop this schedule keeping in mind that the goal is to keep the vessel operating within the overwater boundary for a significant portion of the term of the agreement.

8. Delineate conditions/limitations regarding the sale of the repowered vessels to ensure that the vessel either continues to provide offsets or that the company makes repayment based on item 7 above.

9. Delineate insurance requirements or other provisions for the contract term for the vessel and the repowered engines to ensure that the MVERP funding is protected if the vessel and/or repowered engines are destroyed or lost.

The Terms and Conditions, once agreed upon by the Implementing Agency and the USACE, need to be reviewed and agreed upon by the RAT.

2.2.3.2 – Request for Proposals and Evaluation

A public Request for Proposal (RFP) is used to solicit proposals for consideration for the MVERP. The RFP should be drafted by the Implementing Agency, coordinated with the USACE, and provided to the RAT for review. The RFP should include the follow informative elements, at a minimum:

1. Background on the need for and the goals of the MVERP
2. Contact information for the Implementing Agency and websites, as applicable
3. Description of what types of vessels the MVERP is targeting
4. Description of the overwater boundary
5. Provide a copy of the Terms and Conditions
6. Provide RFP related dates (when proposals are due, when awards are anticipated, etc.)
7. Provide how proposals will be ranked, selected, and how notification will be accomplished
8. Provide notification requirements to keep the Implementing Agency aware of the progress of the repowering

In addition to the informative elements above, the RFP should require the following company information to qualitatively evaluate risk, at a minimum:

Company related information:

1. Company name, contact, and contact information
2. When the company was formed and whether it has been in continual operation since its inception
3. Length of time the company has been working in the applicable overwater boundaries
4. Percentage of the company's total operations that take place within the applicable overwater boundary
5. Whether the company has filed for bankruptcy in the last 10 years
6. Certification that the company is financially stable and is not anticipating to declare bankruptcy
7. Number of employees
8. Total number of company owned vessels
9. Number of vessels proposed for MVERP
10. Anticipated dry dock facility

Repowers can be proposed for auxiliary engines, propulsion engines, or both. Typically most vessels will have two auxiliary engines and two propulsion engines. The RFP should state that if the vessel has more than one auxiliary or propulsion engine, then the proposal must be for all the engines in each service (auxiliary or propulsion). This is to avoid a partially repowered vessel being able to operate an existing engine while the repowered engine is on standby or down. For each vessel

proposed to be repowered, the following information should be provided, at a minimum:

1. Vessel name and registration number
2. Date of build
3. How long the owner has had the vessel in their possession
4. Certify that the submitter has authority from the vessel owner to replace the engines, if the proposal submitter is not the vessel owner.
5. Length, width, and deadweight tonnage of the vessel
6. Vessel's U.S. state of registration
7. Type of vessel (tugboat, excursion, ferry, etc.)
8. Type of work engaged in (assist, hauling, security, passenger, etc.)
9. Vessel operating hours per year for each of the last five years (in operation whether engines are on or off)
10. Percent of vessel operational time within the overwater boundary for each of the last five years
11. List of existing engine(s) proposed for replacement and the proposed replacement engine(s)
12. For each existing engine being proposed to be replaced:
    a. Engine service type (propulsion, auxiliary, pump, etc.)
    b. Engine manufacturer
    c. Model
    d. Model year
    e. EPA Tier, if known
    f. Model number
    g. Stroke type (two/four)
    h. Indicate if the engine is turbocharged or not
    i. Engine rating (in horsepower)
    j. Emissions controls (as applicable)
    k. Indicate if the engine has been replaced or original. If replaced, when.
    l. Number of operating hours over the last five years
    m. Percent of engine operational time in the overwater boundary for the past five years
    n. Last time the engine was overhauled
    o. Anticipated next engine overhaul (without MVERP)
    p. Anticipated engine replacement (without MVERP)
13. For each replacement engine being proposed:
    a. Engine service type (propulsion, auxiliary, pump, etc.)
    b. Engine manufacturer
    c. Model
    d. Model year
    e. EPA Tier
    f. Model number
    g. Stroke type (two/four)
    h. Indicate if the engine is turbocharged or not
    i. Engine rating (in horsepower)

j. Emissions controls (as applicable)
k. Engine costs including delivery to the dry dock

14. Estimated costs for repower elements not covered in item 13 j above
15. Timeline for repowering including:
    a. When the engine orders will be placed
    b. Anticipated date of delivery of replacement engines to dry dock
    c. Anticipated dry dock dates
    d. Anticipated completion of dry dock services dates
    e. Anticipated sea trials dates
    f. Anticipated full operations of the repowered vessel

The RFP should be sent to the vessels owners contacted through the Survey of Interest, posted in applicable regional maritime periodicals/newsletters as identified, and notice should be provided to related maritime associations and work groups.

Evaluation of the submitted proposals should confirm that each submittal has provided the requested data, confirm the engines proposed, and then estimate the potential annual offsets by estimating the vessel's existing annual emissions and the vessel's annual emissions with the proposed replacement engines. The potential annual offsets are the annual emissions from the existing engines minus the annual emissions from the proposed engines. The cost effectiveness in cost per ton of emissions offset should be calculated for the proposed vessel over the 10-year term.

In addition, each proposed vessel should have a risk qualification that takes into account the financial health of the proposing company and other information as provided in the proposal. Finally, vessel operations can change year to year based on market conditions, so the selection process should consider a contingency, agreed upon between the Implementing Agency and the USACE, based on the risk that offsets will not be sufficient to cover General Conformity requirements.

2.2.3.3 – Selecting and Awarding

The potential annual emissions offsets and the cost effectiveness developed in 2.2.3.2 should be used to rank the proposals and selection should be based on the most cost effective solution, and the amount of offsets needed (including contingency). The mitigation budget should be allocated to maximize emissions offsets and should consider risk factors such as reposition or company bankruptcy. The selection process will be coordinated with the USACE, as applicable.

The selected owners should be notified of their award, which could be all or a portion of their proposal (in the case of multiple vessels). The vessel owner should be given up to 30 days to confirm agreement to enter into contract. If any vessel owner backs out and does not sign a confirmation letter, then another vessel should be selected from the ranked list. After all the confirmation signatures are collected, then notification should be provided to the non-awarded proposers.

A summary of the RFP process and the final results of selected of vessels to be repowered under the MVERP should be documented and provided as an information item to the RAT.

2.2.3.4 – Contracting

The contracting process should start as the awarded companies provide their signed confirmations. The Terms and Conditions need to be incorporated or appended into the contract. There should be provisions to ensure that the proposed engines are the ones actually purchased, but there should also be consideration given that if the proposed engine has a significant lead time and another engine offers the same or better emissions offset, a change in replacement engine should be allowed as long as the alternative engine is approved by the Implementing Agency before the change is made.

It is important to note that for the duration of the term of the contract, various information submittals will be required and provisions should be made in the contract to ensure that the submittals are provided in a timely and consistent fashion. This is a critical component to the contract because the data is directly linked to the quantification and verification of the generation of emissions offsets. Without the data, there are no emissions offsets. Therefore, the contract and the Terms and Conditions must be aligned and reinforce each other relating to data provisions.

The contracting should be concluded in 30 to 60 days after receipt of the confirmation letters. The RAT should be informed when the contracting process has been completed for each company and the related vessels.

2.2.3.5 – Engine Ordering

The vessel owner will order the proposed engine and provide the Implementing Agency confirmation via invoices and proof of payment. In addition, the vessel owner needs to provide the Implementing Agency the original equipment manufacturer's EPA Tier certificate, engine data sheet, and estimated date for completed engine construction and delivery to the dry dock for each engine covered by the contract. The vessel owner will need to notify the Implementing Agency promptly of any delays in the engine construction and delivery timeline.

As noted in the preceding subsection, in the situation where the proposed engine has a significant and unforeseen delay due to any of many factors, and assuming the contract is structured to allow flexibility, the vessel owner could propose an alternative engine that provides the same or greater emissions offsets or even an insignificant reduction in offsets (in some cases). The change of engine would need to have prior approval from the Implementing Agency, which would coordinate with the USACE and RAT, before the alternative engine is ordered. If this type of flexibility is to be incorporated into the MVERP, it should not be incorporated through the Terms and Conditions and addressed only through the contract.

2.2.3.6 – Engine Delivery

Upon delivery of the new engines to the dry dock, the vessel owner will notify the Implementing Agency and provide proof that the engine is the proposed engine by providing photographs of the engine onsite and pictures of the engine plate showing manufacturer, model number, identification numbers, etc.

2.2.3.7 – Dry dock

The vessel owner will notify the Implementing Agency when the vessel arrives at the dry dock yard and when the vessel is moved to dry dock. While the vessel is in dry dock, the vessel owner shall provide access for inspection during the repower process if requested by the Implementing Agency. The Implementing Agency must comply with all health and safety provision of the ship yard while onsite and not unnecessarily slow down the repower process. The vessel owner must promptly notify the Implementing Agency if there are any changes to the dry dock schedule and the nature of the delay.

2.2.3.8 – Verification of Destruction of Existing Engine

The vessel owner must notify and document the destruction the existing engine(s). The existing engines need to be decommissioned such that they are not repairable and cannot be brought back into use. The ship yard should certify the engine destruction and the owner should provide photographic evidence. The ship owner should make provisions with the ship yard to allow the Implementing Agency access to the destroyed existing engines for confirmation purposes, as necessary.

As discussed above, if the existing engines could be used beneficially in other areas to reduce emissions, then the Implementing Agency can coordinate with the RAT on how to address this issue and determine if the engines can be resold outside the area.

2.2.3.9 – Recordkeeping and Reporting

Recordkeeping and reporting requirements are separated between the three phases of the MVERP process: pre-engine repower, engine repowering at the ship yard, and operational. Several elements related to recordkeeping and reporting are noted above in the various sections and are ultimately tied to the requirements of the Terms and Conditions and the ultimate contract between the Implementing Agency and vessel owner.

As stated earlier, recordkeeping and reporting are critical elements to the MVERP process, both on the construction project (emission producing) side and the offset (emission offsetting) side. The contract and Terms and Conditions must align with each other and make it incumbent on the contractor to meet the recordkeeping and reporting requirements or the emission offsets and compliance with applicable General Conformity requirements are at risk. In addition, the Terms and Conditions and/or the contract should allow the provision that the Implementing Agency can, at the agency's discretion, audit the information and data underlying the recordkeeping requirements. Finally, a balance must be struck such that the reporting and recordkeeping provide the data needed for the MVERP to be successful, but limited

beyond those provisions as not to inhibit participation because the requirements are too onerous. Examples from the PANYNJ MVERP relating to recordkeeping and reporting are provided in Attachment 4.

The Implementing Agency needs to provide MVERP updates to the RAT as detailed in the next subsection.

2.2.3.10 – Coordination with NAN and RAT

The Implementing Agency, if not NAN, needs to coordinate the implementation of the agreed upon MVERP closely with NAN. All emission calculators (bid and project) along with reductions from the repowered vessels will be coordinated with NAN for review and confirmation, prior to coordinating with the RAT. This coordination provides the Implementing Agency the experience developed by NAN over the HDP and Sandy Hurricane ABU projects related to the quantification of the offsets, emissions netting, coordination with the RAT, and ensures that the project partners are in agreement during the implementation of the MVERP, even after the specific project is completed and the MVERP is still active.

Further, the Implementing Agency needs to coordinate with the RAT. Again, if the Implementing Agency is not NAN, then coordination with the RAT is facilitated through NAN. The RAT should be viewed as a resource to the Implementing Agency and provides third-party and regulatory review, can cooperatively develop solutions to issues that arise, and assist through its advisement and support as a RAT member to ensure that the MVERP is successful.

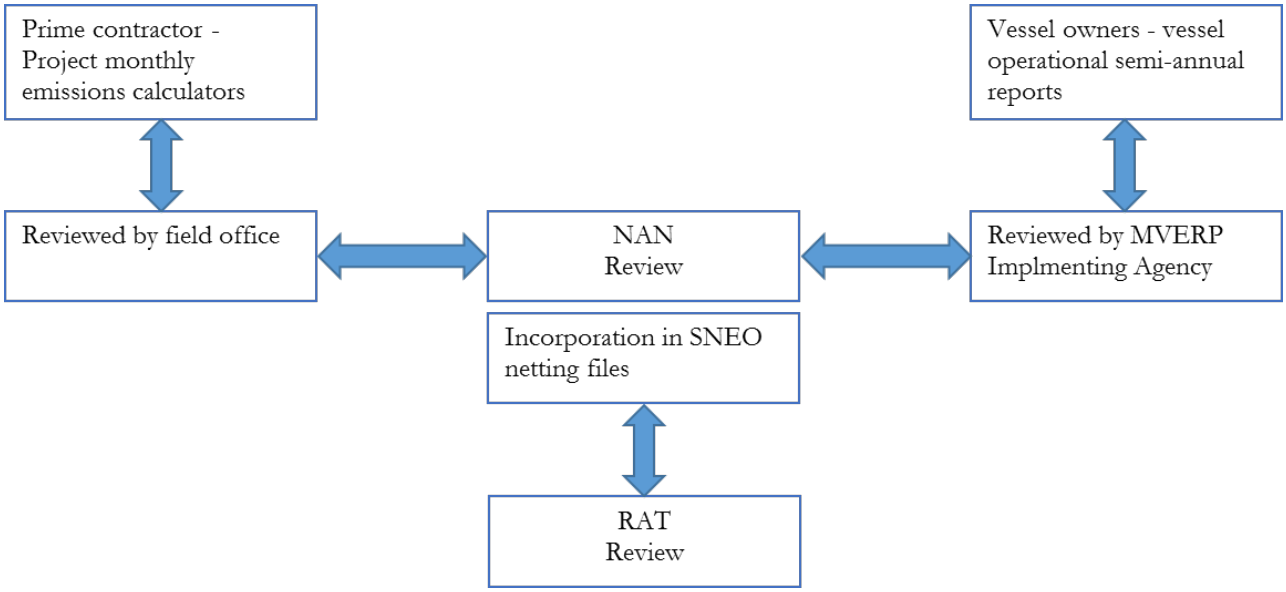
2.2.3.11 – Vessels that are Repositioned

Should a vessel operator notify the Implementing Agency that an MVERP funded vessel is to be repositioned out of the overwater boundary, the Implementing Agency will notify NAN and recover funds based on the contract conditions. As an alternative to recovering funds under the contract, the vessel operator should be provided the opportunity to propose an alternative option, such as another vessel that the operator repowers in trade for taking out the MVERP funded vessel. The proposed alternative scenario needs to be coordinated with the RAT and agreed to prior to acceptance of the alternative by the Implementing Agency. The contract should take this option into consideration when delineating the requirements for vessels that are repositioned.

2.2.4 – SNEO Integration

MVERP generated offsets will be integrated into the SNEO netting consistent with the provisions of the SNEO Protocol. NAN administers the SNEO netting and coordination and review on project-related emissions and MVERP generated offsets is required as part of integrating new MVERPs into the netting. The SNEO emissions netting is reviewed by the RAT and documents a project's compliance with applicable General Conformity mitigation requirements. The information flow for the process is illustrated in Figure 4.

Figure 4 – SNEO Integration Illustration



The project that is using the MVERP generated offsets, as stated above, needs to complete and deliver monthly project emissions calculators to the applicable USACE CO field office, which reviews them for completeness (i.e., making sure that vessels or equipment is not being left out of the calculator, that the operational hours seem reasonable, etc.) and if there are any issues the field office engages the project's prime contract for updates. Once the field office review is completed, the project monthly calculators are sent to the Clean Air Act subject matter expert (SME) technical point of contact in Planning Division, Environmental Analyses Branch (PLE) for compliance review (i.e., making sure that the calculators are complete, identifying any anomalies, confirming the calculator is in proper working order, etc.) and if there are any queries or updates need, and coordinates revisions with the CO field office. Once the project emission calculators are completed, they are incorporated into the SNEO netting tables under USACE and the appropriate District and project. This process repeats every month, with calculators typically due to NAN by the 10th of each month.

From the MVERP offset generation side, the vessel owners will log their engines' operational time and the percentage of that time in the overwater boundary. The operators will report operational parameters, for each applicable vessel and engine, on a quarterly basis, which would need to be provided 4-6 weeks after the end of each quarter to the Implementing Agency for review. The reviews by the Implementing Agency include:

- Review for completeness to ensure that each vessel and engine that was funded under the MVERP are being documented and the submittal meets the contract requirements.
- Review of the operational data to determine if the vessel is performing above or below anticipated operational levels and the factors that are effecting operations.

If there are any anomalies identified during these reviews, the Implementing Agency will coordinate with the vessel owner to make updates as needed. When the operational reports are complete, the Implementing Agency will estimate the emissions offsets for the reporting period by vessel and by engine. A summary is developed for each vessel that is participating in the MVERP that includes, at a minimum:

1. Vessel name
2. Activity indication (active or not active)
3. Repowered engines service (propulsion, auxiliary, pump, etc.)
4. Repowered engine power rating, in horsepower
5. Total operational time, for each repowered engine
6. Operational time in the overwater boundary, for each repowered engine
7. Emissions calculations for prior and repowered engine, by engine (using the methods described in 2.2.1)
8. The generated offsets, by engine (the delta between the emissions of the prior and repowered engines)
9. Any notations that relevant to the operational period (vessel was laid up for maintenance, vessel hours effected by weak demand, etc.)

The summary is provided to NAN for review and comments will be addressed by the Implementing Agency, and a final draft summary provided. NAN will distribute the final draft six month summary reports to the RAT for their review and comment will be incorporated.

Section 3 – Costing

Two costing elements typically need to be taken into account when determining the ultimate cost of implementing an MVERP: administrative costs (throughout the MVERP process) and reimbursement for capital equipment purchases (repowered engines). These cost elements are discussed below.

3.1 – Administrative Costs

Administrative costs are dependent on the scope of the MVERP, the number of vessels, and the Implementing Agency's approach to the administrative elements of the MVERP (fully self-administer, contract out portions or all of the administration, etc.). The anticipated administrative costs can be grouped into the following:

- Costs associated with developing and finalizing the agreements between the Implementing Agency and NAN in order to implement the MVERP.
- Initial cost associated with the development and implementation of the RFP process including development of the RFP package, development of public notices, conducting outreach, review and evaluation of proposals, selection, awarding, contracting, and coordination with NAN and the RAT. For the PANYNJ MVERP 2 the estimate for the initial costs were approximately $75,000; however, that was building off the previous MVERPs. Therefore, for costing purposes the initial costs are anticipated to range from $75,000 to $150,000.
- Operational costs associated with oversight and audit of contractual requirements relating to the purchase of the new engines; delivery, dry dock, and commissioning schedules; reporting to NAN; confirming the existing engines have been destroyed, semi-annual operational reports once the MVERP funded vessel is commissioned, estimates of the emissions offsets, coordination with vessel operator, auditing, and coordination with NAN and the RAT for the duration of the MVERP. For the PANYNJ MVERP 2 the estimate for the annual operational costs were approximately $25,000. Again, these costs were benefited by implementing earlier programs. Therefore for costing purposes the operational costs are anticipated to range from $25,000 to $35,000 per year for the life of the MVERP.
- Costs of NAN's labor related to support, coordination, facilitation, and incorporation of offsets into the SNEO netting tables.

3.2 – Reimbursement for Capital Purchases

The costs associated with the repowered engines should include only the costs of the engines as proposed and the costs of delivering the engine to the ship yard where the dry dock or engine replacement will take place. These costs should be validated through the final invoice from the engine original equipment manufacturer to the vessel owner.

Engine costs range significantly depending on the rated power and EPA engine tier. From the PANYNJ MVERPs, the following engine costs were funded:

- MVERP1
  - Total cost: $2.44 million
  - Number of vessels: 12
  - Average cost per vessel: $271,500
  - Average annual reductions: 90.1 tons NOx
  - Total reduction: 827.5 tons NOx
  - Cost effectiveness: $2,950/ton NOx reduced
- MVERP2
  - Total cost: $1.71 million
  - Number of vessels: 8
  - Average cost per vessel: $189,700
  - Average annual reductions: 250.0 tons NOx
  - Total reduction: 2,035 tons (estimated)
  - Cost effectiveness: $840/ton NOx reduced

It should be noted the future repowers to the higher EPA engine tiers will increase the costs of the engine purchases and the potential emissions reductions.

3.3 – Planning Cost Estimate

To estimate the administrative and repower costs for developing and implementing an MVERP for FIMP, for planning purposes, the following assumptions are made:

1. FIMP MVERP assumed to have a similar cost effectiveness as PANYNJ MVERP1
2. Duration of FIMP MVERP 10 years; operational costs based on PANYNJ information
3. Estimated highest annual offsets of 200 tpy NOx

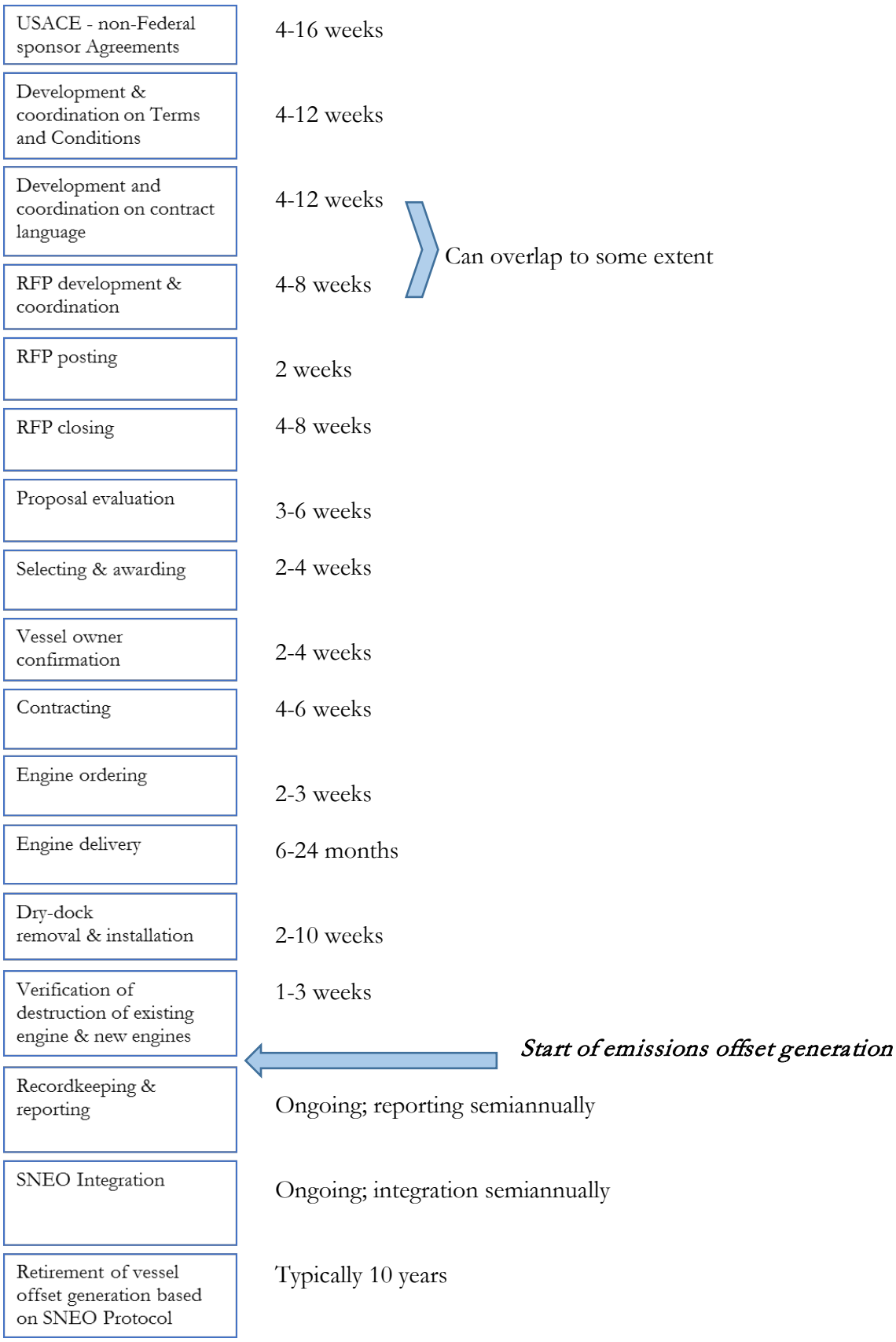
The estimated cost for the scenario above is:

1.	Administrative Costs		
	a. Agreements		$25,000
	b. Initial Costs		$135,000
	c. Operational Costs ($30,000 x 10 years)		$300,000
		Subtotal	$460,000
2.	Capital Reimbursement Costs		
	a. Engine repowers		$2,500,000
3.	Total Planning Costs		$2,960,000

Section 4 – MVERP Timeline

Planning and implementing an MVERP strategy is quite an involved and up-front intensive effort. Getting the proper agreements negotiated, planning, request for proposal, and installation of the new engines is a significant effort. Once all the vessels are repowered and operational, then the administration of an MVERP focuses around data collection and reporting twice a year for ten years.

The draft timeline presented on the next page shows the major elements of planning and implementing an MVERP between USACE and a non-federal sponsor.


USACE - non-Federal sponsor Agreements
4-16 weeks
Development & coordination on Terms and Conditions
4-12 weeks
Development and coordination on contract language
4-12 weeks
RFP development & coordination
4-8 weeks
Can overlap to some extent
RFP posting
2 weeks
RFP closing
4-8 weeks
Proposal evaluation
3-6 weeks
Selecting & awarding
2-4 weeks
Vessel owner confirmation
2-4 weeks
Contracting
4-6 weeks
Engine ordering
2-3 weeks
Engine delivery
6-24 months
Dry-dock removal & installation
2-10 weeks
Verification of destruction of existing engine & new engines
1-3 weeks
Start of emissions offset generation
Recordkeeping & reporting
Ongoing; reporting semiannually
SNEO Integration
Ongoing; integration semiannually
Retirement of vessel offset generation based on SNEO Protocol
Typically 10 years

Attachment 1 – SNEO Protocol

SURPLUS NOx EMISSION OFFSET PROGRAM PROTOCOL

Table of Contents

INTRODUCTION

This document proposes a programmatic protocol for the use of oxides of nitrogen (NOx) emission offsets (SNEOs) as a result of the emission reduction strategies implemented as part of the New York and New Jersey Harbor Deepening Project (HDP). These emission offsets are estimated to be in excess of those needed to fully offset the projects' construction emissions in order to comply with the General Conformity requirements. The lead federal agency for the HDP is the United States Army Corps of Engineers (USACE); the lead local sponsor is the Port Authority of New York & New Jersey (PANYNJ); and the lead local sponsor for the Port Jersey channel is the New Jersey Department of Transportation, Office of Marine Resources (NJDOTOMR). In the fall of 2001, the USACE, PANYNJ, New York State Department of Environmental Conservation (NYSDEC), New Jersey Department of Environmental Protection (NJDEP), and the United States Environmental Protection Agency Region 2 (EPA R2) came to an agreement on the development of a Harbor Air Management Plan (HAMP) which allows for the implementation of emission reduction strategies, quantification of applicable HDP emissions, and the reporting of netted SNEOs to ensure that the project complied with General Conformity. The New York City Department of Transportation (NYCDOT) agreed to provide access to the Staten Island Ferry Fleet (SIFF) as one of the primary emission reduction sources to be incorporated into the HAMP. The NYCDOT has provided support, funding, and coordination for emission reduction strategies developed for the SIFF. As a result, the Regional Air Team (RAT) was formed to monitor progress, review netted emissions, and coordinate on how any SNEOs beyond what the HDP required could be utilized by the USACE, PANYNJ, and NYCDOT. This document looks to establish a protocol for utilizing the unused SNEOs that are deemed to be surplus NOx offsets for the HDP.

The proposed protocol consists of the following key elements:

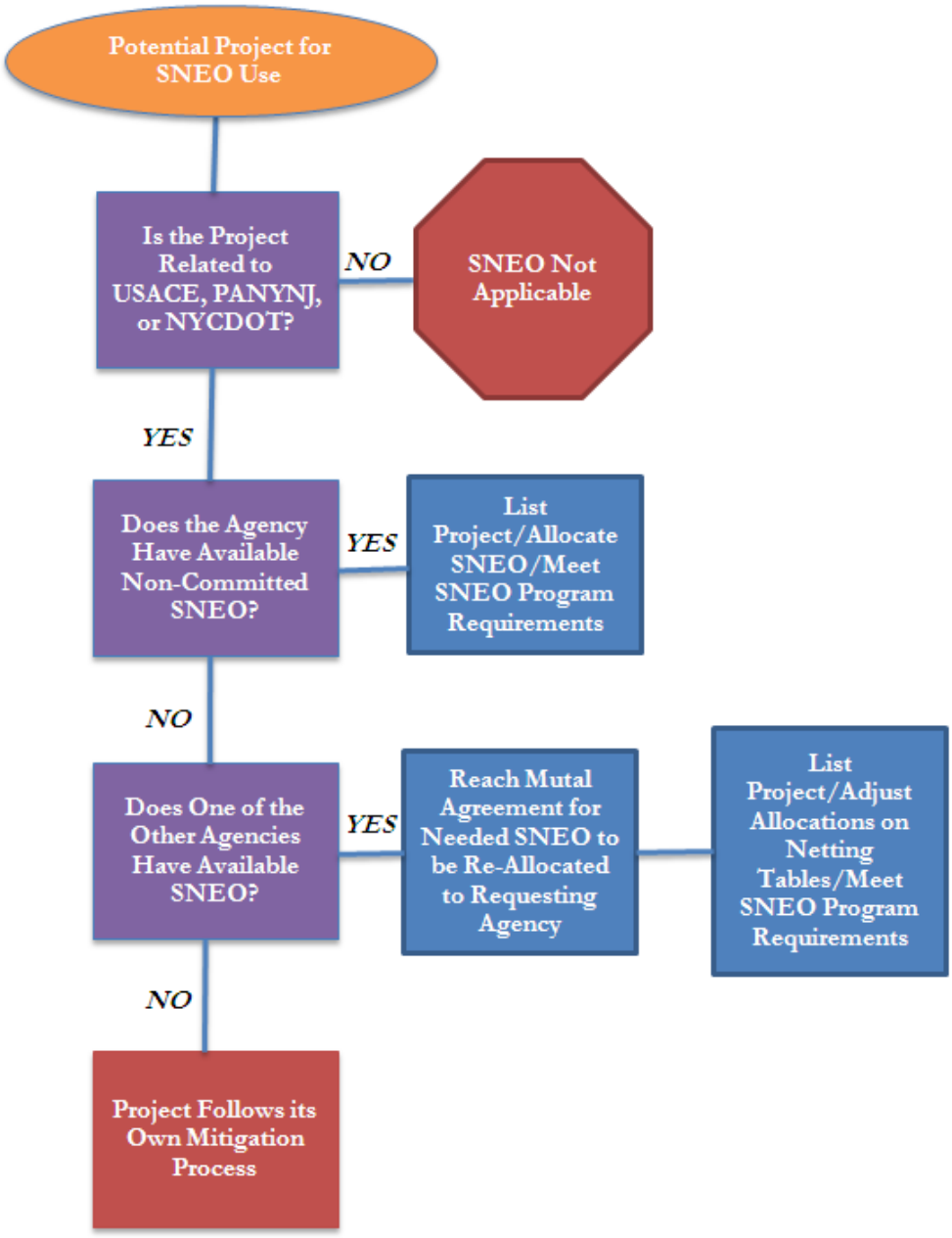
- Proposed program SNEO premise
- SNEO distribution agreement
- Project identification and inclusion
- Determination of SNEOs
- Quantification of project emissions to be offset
- Quantification of available emission offset
- Netting of emissions and offsets to generate SNEOs
- Tracking and reporting requirements
- Contract Requirements

To date, the implementation of the HDP HAMP has produced a regional net NOx benefit of 1,018.8 tons from 2005 through 2012. It is anticipated, that the level of unused offsets will be higher in future years, than the trend that has been established during the HDP.

PROPOSED SNEO PROGRAM PREMISE

The proposed SNEO protocol builds on the methods and tools (i.e. netting) developed to track and report the HDP's construction NOx emissions and available offsets. The SNEO protocol proposes to use the successful quantification, netting, tracking, and reporting of NOx budgets on a year-to-year basis and apply them to a broader range of projects beyond the HDP, subject to certain criteria. The process of project inclusion in the proposed SNEO program is presented in Figure 1. The SNEO program will include projects only under the purview of the USACE, PANYNJ, or the NYCDOT.

Figure 1: Project Inclusion Flow Chart



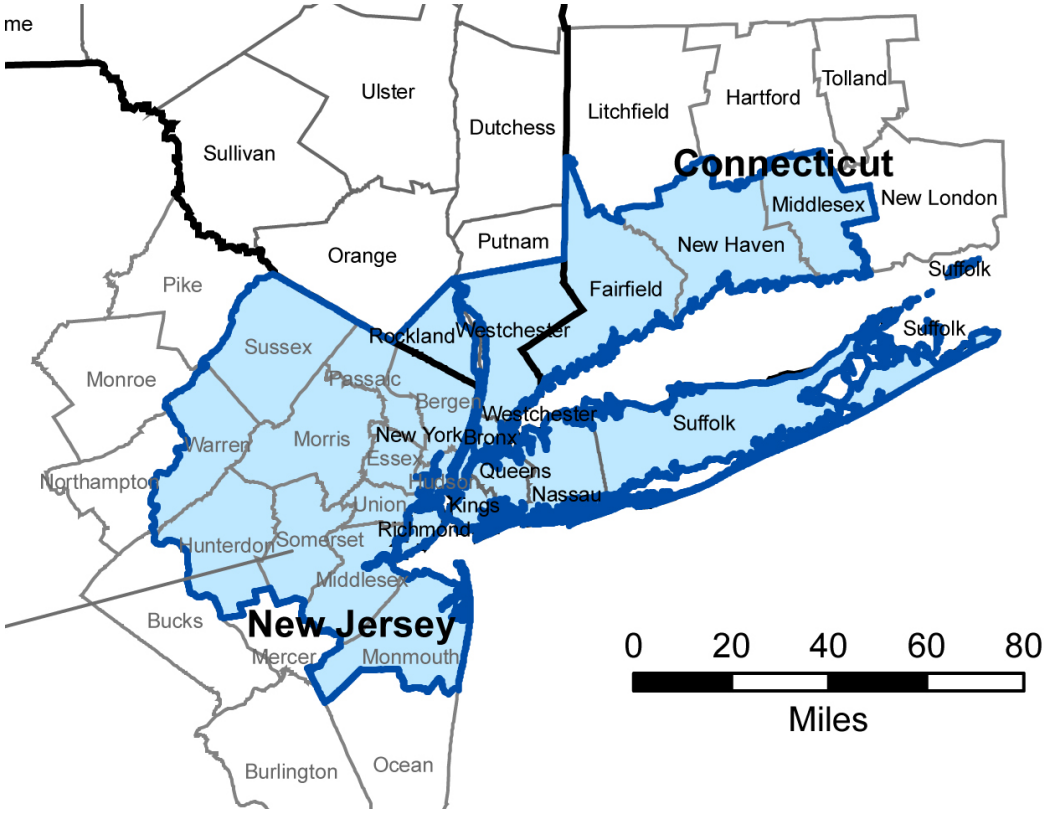
The RAT, chaired by the USACE, will continue to serve as the technical oversight group for the SNEO program by confirming that acceptable methods are employed, double counting is avoided, providing technical and regulatory expertise, and ensuring that transparency is maintained throughout the program.

The criteria for use of SNEOs generated by the HDP are listed below:

- **Only useable** by the three HAMP participating agencies (USACE, PANYNJ, and NYCDOT) that funded the surplus offsets, and therefore are not a marketable commodity;
- **Only used** consistent with the rules associated with applicable General Conformity regulations; and,
- Can be used within the same nonattainment or maintenance area or nearby area of equal or higher classification provided the emissions from that area contribute to the violations, or have contributed to violations in the past, in the area of the federal action. Currently, SNEOs are being generated in the New York, Northern New Jersey-Long Island Connecticut ozone nonattainment area illustrated in the blue shaded are in Figure 2.

The SNEO protocols represent a continuing emission reduction offset program for activities that are overseen/managed by the USACE and fall under General Conformity, as allowed under §93.160-165. The emission offsets created under the SNEO protocols, and their use, will be consistent with the applicable General Conformity requirements.

Figure 2: New York-Northern New Jersey-Long Island Connecticut Ozone Nonattainment Area[1]



[1] EPA Green Book, *http://www.epa.gov/airquality/greenbk/map/ny8_2008.pdf*

SNEO Distribution Agreement

The SNEO distribution agreement divides SNEOs annually between the participating agencies (USACE, PANYNJ, and NYCDOT) based on each agencies financial contribution to the emission reduction strategy programs implemented under the HAMP. The initial distribution will be set annually at the following levels:

Table 1. SNEO Distribution by Agency and Program

Emission Reduction Strategy Program	USACE	PANYNJ	NYCDOT
KVK-5 Tugs	50%	50%	0%
Port Jersey Tugs	50%	50%	0%
MVERP	50%	50%	0%
MVERP	50%	50%	0%
Staten Island Ferries	35%	35%	30%

Each agency retains the right to reallocate SNEOs to one of the three participating agencies if their annual allocation is not fully needed by the agency's own projects. In this case, the reallocation must be decremented from the donating agency's SNEO allocation and added to the receiving agency's SNEO allocation on the netting sheets to properly track NOx budgets and ensure that no double counting occurs. All reallocations will be reported to the RAT.

Project Identification & Inclusion

Each agency will be responsible for identifying projects that they want to apply SNEOs to and have those projects included in the SNEO netting tables. The SNEO netting tables report projects, by entity, and projected emission estimates for the life of the project. Monthly tracking of those projects that utilize SNEOs will be conducted in a similar fashion as currently done for the HDP. The USACE will continue to update and manage SNEO netting tables. The required information includes project name, forecasted annual emission estimates that need to be offset, and project contact. The netting tables will be distributed monthly, like with the HDP netting files, to the RAT. Forecasted annual emission estimating procedures and methods need to be detailed to the RAT for concurrence on methods, factors, and other variables.

A quarterly conference call will be scheduled to discuss potential SNEO projects. If a significant project is identified between the quarterly conference calls, a RAT meeting will be scheduled as needed.

DETERMINATION OF SNEOS AND PLANNING CONTINGENCIES

SNEO quantities are determined and tracked through the HDP netting process (which includes a 10% planning contingency) and are defined as emission offsets beyond the HDP annual requirements. The following planning contingencies help ensure that annual project emissions do not exceed annual emission offsets available through the SNEO program:

- SNEO planning contingency of 10% on emissions from SNEO related projects
- SNEO planning discount contingency of 10% on offset generation to be used by SNEO related projects, if operational uncertainties associated with offset generation warrant further contingency planning.

QUANTIFICATION OF PROJECT EMISSIONS TO BE OFFSET

Quantification of actual project emissions needs to be based on actual equipment specifications such as engine rating, year, rpm, technology hours of operation, and acceptable emission and load factors. Each agency is responsible for quantifying the actual project emissions.

Methods for quantifying emissions from projects seeking to utilize SNEOs, will be agreed upon by the RAT. Tracking of actual activity data, similar to the level required for the HDP monthly calculators, will be provided and made available to the RAT every six months. Monthly summary project data will be utilized to develop monthly project emission estimates, which will be provided to the RAT on the SNEO emissions and offset netting.

Coordination with the RAT on these elements is essential to ensure that the emission estimates are acceptable to the regulatory agencies.

QUANTIFICATION OF AVAILABLE EMISSION OFFSETS

Quantification of actual monthly emission offsets will be conducted in the same manner that is currently used for the HDP. The following table shows the longevity of each of the emission reduction strategies by program:

Table 3. Life of Emission Offset Strategies

Emission Reduction Strategy/Program	Longevity	Last Year of Offsets
Engine Replacement/KVK-5 Tugs	10 years from installation	On vessel-by-vessel basis
Engine Replacement/Port Jersey Tugs	10 years from installation	On vessel-by-vessel basis
Engine Replacement/MVERP	10 years from installation	On vessel-by-vessel basis
Engine Replacement/MVERP2	10 years from installation	On vessel-by-vessel basis
Selective Catalytic Reduction/Staten Island Ferries	While ferries are in operation & SCR is properly operated/matintained	When SCR is no longer maintained
Engine Rebuild Kits/Staten Island Ferries	While ferries are in operation & kit's life (typically 20,000 hours) or maximum 10 years	On vessel-by-vessel basis

Engine replacements (replacing an older/dirtier engine with a newer/cleaner higher EPA tier engine) can generate SNEOs for a maximum of 10 years, unless the applicable SIP regulations (local/state) or federal regulations requires engine replacement or alternative emission reductions from such engines. If regulations (local/state) are in the process of being incorporated into the SIP, then SNEOs can only be generated until they are incorporated in the SIP, as allowed by the regulation. The replaced engine(s) can only generate SNEOs while operating in the nonattainment area, as presented in Figure 2.

Selective catalytic reduction (SCR) systems, if not required by the applicable SIP regulations (local/state), can generate SNEOs, as long as the SCR is operated in accordance with the manufacturer's guidance, urea is purchased and consumed, and catalysts are replaced. The vessel/equipment with the SCR can only generate SNEOs while operating in the nonattainment area, as presented in Figure 2.

Engine rebuild kits, which upgrade an existing engine to a higher EPA Tier, can be used to generate SNEOs for the life of the kit warranted by the manufacturer (typically 20,000 hours) as long as there is no requirement in the applicable SIP regulations (local/state) that requires the use of a rebuild kit. SNEOs can only be generated and use if the rebuild kit exceeds the SIP requirements (e.g., SIP requires a Tier 2 and a Tier 3 kits is installed). Once a rebuild kit expires or the maximum life span of 10 years has been obtained, a new rebuild kit can be purchased and installed to continue the generation of SNEOs, as long as the kit is a higher EPA Tier than the one it's replacing. If there is not higher tier kit available for the engine, then the RAT will determine if a replacement kit will generate SNEOs on a case-by-case basis. In the case of the John F. Kennedy, which is a grandfathered vessel built in 1965, the next kit needs to be cleaner than the current kit, if available. The kitted engines can only generate SNEOs while operating in the nonattainment area, as presented in Figure 2.

Methods for quantifying emission offsets from projects seeking to generate SNEOs, will be agreed upon by the RAT. Tracking of actual activity data, similar to the level required for the HDP monthly calculators, will be provided and made available to the RAT every six months. Bi-annual emission offset data will be utilized to develop SNEO estimates, which will be provided to the RAT on the SNEO emissions and offset netting.

Coordination with the RAT on these elements is essential to ensure that the emission offset estimates are acceptable to the regulatory agencies.

NETTING OF PROJECT EMISSIONS AND SNEOS

Netting of project emissions and emission offsets will be conducted similar to how the netting has been estimated for the HDP for the past several years, as approved by the RAT. The applicable planning contingency factors will be included in the netting. Netting will be provided to the RAT on an agreed upon frequency. It should be noted that if SNEOs net to less than one ton, then no SNEOs for that year could be allocated to other projects. An example of the proposed netting scheme is provided in Appendix A.

TRACKING AND REPORTING REQUIREMENTS

The tracking and reporting requirements for the SNEO Program will be consistent with requirements for the HDP as applicable, with monthly netting with appropriate backup and as described in *Monitoring, Recordkeeping, and Reporting* section, HAMP, 2004. SNEO netting tables will be updated on a monthly basis and annual summaries provided after each calendar year to document the progress of the program.

BID & CONTRACT REQUIREMENTS

At a minimum, the use of applicable bid and contract requirements used for the HDP will be used for all projects entering the SNEO Program. These provisions include:

- Setting annual air emission caps for projects in the bid specs and including those caps as contract conditions
- Use of bid calculators as part of the bid packages to ensure that bidders have an accurate method for determining how to propose the project such that their bid can meet the air emissions caps
- Use of project monthly calculators to feed into the estimation of actual project emissions
- Contract clauses that require the contractor to stop work when the annual air emission cap is reached, assuming there are no additional SNEOs available

USACE contract language is provided in Appendix B as an example. Each agency will to develop their specific contract language in coordination with their internal contracting and legal departments. Once the language is developed for a specific project, it will be shared with the RAT for informational purposes.

PANYNJ PROCTOR & GAMBLE EMISSION REDUCTION CREDITS

The 2004 HAMP outlined strategies and alternatives to address and meet the requirements of the General Conformity rules. Seven mitigation alternatives were proposed in the HAMP, with the final selection of Mitigation Alternative #7 as outlined in the HAMP and committed to in the final GC Determination. Mitigation Alternative #7 consists of selective catalytic reduction (SCR) installation in the Staten Island Ferry fleet, the repowering of tugboats with newer/cleaner engines under the KVK-5 permit and additional project tugboats, and the use of emission credits purchased by the PANYNJ. The RAT reviewed, commented, and agreed on the 2004 HAMP.

In 2000, the PANYNJ's purchased the Proctor & Gamble (P&G) site in New York, in which the PANYNJ was transferred 202.9 tons NOx/year of Emission Reduction Credits (ERCs) by NYSDEC in early 2001 (an asset of the property purchased). The use of the P&G ERCs during the first two years of the HDP (while the Staten Island Ferry SCR system was being installed and tugboats were being repowered) as a primary offset strategy, however after the first two years these ERC became a "last-ditch" contingency strategy against any short falls in emission offsets.

During the discussions of the SNEO program, it was agreed that the P&G ERCs are not considered part of the SNEO program.

APPENDIX A: SNEO NETTING EXAMPLE

SNEO Program Netting

12-Nov-13

Annual Offsets Summary by Year, tons — **DRAFT**

Offset Source	Offset Program	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
KVK-5 Tugs (Repowers)	HDP	38.0	36.6											
Alice Austen (SCR)	HDP													
John Noble (SCR)	HDP	35.8	38.5	38.5	38.5	38.5	38.5	38.5	38.5	38.5	38.5	38.5	38.5	38.5
Andrew Barberi (Tier I)	HDP	109.9	90.7	90.7	90.7									
Samuel Newhouse (Tier I)	HDP	57.4	82.0	82.0										
Guy V. Molinari (Tier II)	HDP	53.4	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0			
John J. Marchi (Tier II)	HDP	52.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0				
Spirit of America (Tier II)	HDP	14.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0			
John F. Kennedy (Tier I)	HDP	77.9	56.5	56.5	56.5	56.5	56.5							
PJ Tugs (Repowers)	HDP	107.1	107.1											
MVERP (Repowers done)	HDP	91.2	91.2	91.2										
MVERP2 (Repowers planned)	HDP	254.7	254.7	254.7	254.7	254.7	230.6							
Offsets subtotal (in place)		891.3	967.4	823.7	650.4	559.7	535.7	248.5	248.5	248.5	178.5	38.5	38.5	38.5
Offsets subtotal (planned)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Offsets (w/HDP Contingency; w/o SNEO Contingency)		891.3	967.4	823.7	650.4	559.7	535.7	248.5	248.5	248.5	178.5	38.5	38.5	38.5
Offsets (w/HDP Contingency; w/SNEO Contingency)		802.2	870.6	741.3	585.4	503.8	482.1	223.7	223.7	223.7	160.7	34.7	34.7	34.7
HDP Emis Requirement (w/HDP Contingency)		**502.2**	**209.9**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
TOTAL AVAILABLE SNEO (w/HDP & SNEO Contingencies)		**300.0**	**660.7**	**741.3**	**585.4**	**503.8**	**482.1**	**223.7**	**223.7**	**223.7**	**160.7**	**34.7**	**34.7**	**34.7**

Key: **In Place** **Planned**

Annual Available SNEO Allocation by Agency (w/Contingency), tons

Agency	Annual Allocation %	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
USACE-NYD	*Tugs*	*50.0%*	*50.0%*	*50.0%*	*50.0%*	*50.0%*	*50.0%*	*50.0%*	*50.0%*	*50.0%*	*50.0%*	*50.0%*	*50.0%*	*50.0%*
	SIFF	*35.0%*	*35.0%*	*35.0%*	*35.0%*	*35.0%*	*35.0%*	*35.0%*	*35.0%*	*35.0%*	*35.0%*	*35.0%*	*35.0%*	*35.0%*
Available SNEO		**129.8**	**281.4**	**306.1**	**239.3**	**210.7**	**199.9**	**78.3**	**78.3**	**78.3**	**56.2**	**12.1**	**12.1**	**12.1**
PANYNJ	*Tugs*	*50.0%*	*50.0%*	*50.0%*	*50.0%*	*50.0%*	*50.0%*	*50.0%*	*50.0%*	*50.0%*	*50.0%*	*50.0%*	*50.0%*	*50.0%*
	SIFF	*35.0%*	*35.0%*	*35.0%*	*35.0%*	*35.0%*	*35.0%*	*35.0%*	*35.0%*	*35.0%*	*35.0%*	*35.0%*	*35.0%*	*35.0%*
Available SNEO		**129.8**	**281.4**	**306.1**	**239.3**	**210.7**	**199.9**	**78.3**	**78.3**	**78.3**	**56.2**	**12.1**	**12.1**	**12.1**
NYCDOT	*Tugs*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*
	SIFF	*30.0%*	*30.0%*	*30.0%*	*30.0%*	*30.0%*	*30.0%*	*30.0%*	*30.0%*	*30.0%*	*30.0%*	*30.0%*	*30.0%*	*30.0%*
Available SNEO		**40.4**	**97.9**	**129.0**	**106.9**	**82.4**	**82.4**	**67.1**	**67.1**	**67.1**	**48.2**	**10.4**	**10.4**	**10.4**
TOTAL AVAILABLE SNEO by Agency (w/SNEO Contingency)		**300.0**	**660.7**	**741.3**	**585.4**	**503.8**	**482.1**	**223.7**	**223.7**	**223.7**	**160.7**	**34.7**	**34.7**	**34.7**
	Tugs Allocation QA	*OK*	*OK*	*OK*	*OK*	*OK*	*OK*	*OK*	*OK*	*OK*	*OK*	*OK*	*OK*	*OK*
	SIFF Allocation QA	*OK*	*OK*	*OK*	*OK*	*OK*	*OK*	*OK*	*OK*	*OK*	*OK*	*OK*	*OK*	*OK*

SNEO Program Netting

12-Nov-13

Annual Project Emissions, tons — **DRAFT**

Agency/Project	Status / Notes	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
USACE-NAN														
Fire Is to Montauk Point, NY		45.6	273.6	273.6	273.6	273.6	273.6	273.6	136.8	0.0	0.0	0.0	0.0	0.0
Long Beach, NY		0.0	0.0	0.0	434.6	22.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
East Rockaway to Rockaway Inlet, NY		0.0	0.0	0.0	91.3	273.7	273.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sea Bright to Clean Township (Elberon to Loch Arbour), NJ		0.0	228.0	501.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Total USACE-NYD	**45.6**	**501.7**	**775.3**	**799.5**	**570.1**	**547.3**	**273.6**	**136.8**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
PANYNJ														
Goethals Bridge	Emission estimates based on GCD	0.0	114.0	153.0	130.0	96.0	92.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TBD		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TBD		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TBD		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Total PANYNJ	**0.0**	**114.0**	**153.0**	**130.0**	**96.0**	**92.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
NYCDOT														
TBD	**Total NYCDOT**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
Total Project NOx Emissions		45.6	615.7	928.3	929.5	666.1	639.3	273.6	136.8	0.0	0.0	0.0	0.0	0.0
10% Construction Emissions Contingency		4.6	61.6	92.8	92.9	66.6	63.9	27.4	13.7	0.0	0.0	0.0	0.0	0.0
TOTAL PROJECT NOx EMISSIONS (w/Contruction Contingency)		**50.2**	**677.2**	**1,021.1**	**1,022.4**	**732.8**	**703.2**	**301.0**	**150.5**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**

Annual Netted Remaining SNEO (SNEO = Project Emissions - Allocated SNEO), tons

Agency/Project	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
USACE-NYD													
Total Project Emissions (w/Contingency)	45.6	501.7	775.3	799.5	570.1	547.3	273.6	136.8	0.0	0.0	0.0	0.0	0.0
Allocated SNEO (w/Contingency)	129.8	281.4	306.1	239.3	210.7	199.9	78.3	78.3	78.3	56.2	12.1	12.1	12.1
Netted Remaining SNEO	**84.2**	**-220.2**	**-469.1**	**-560.2**	**-359.4**	**-347.4**	**-195.3**	**-58.5**	**78.3**	**56.2**	**12.1**	**12.1**	**12.1**
PANYNJ													
Total Project Emissions (w/Contingency)	0.0	114.0	153.0	130.0	96.0	92.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Allocated SNEO (w/Contingency)	129.8	281.4	306.1	239.3	210.7	199.9	78.3	78.3	78.3	56.2	12.1	12.1	12.1
Netted Remaining SNEO	**129.8**	**167.4**	**153.1**	**109.3**	**114.7**	**107.9**	**78.3**	**78.3**	**78.3**	**56.2**	**12.1**	**12.1**	**12.1**
NYCDOT													
Total Project Emissions (w/Contingency)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Allocated SNEO (w/Contingency)	40.4	97.9	129.0	106.9	82.4	82.4	67.1	67.1	67.1	48.2	10.4	10.4	10.4
Netted Remaining SNEO	**40.4**	**97.9**	**129.0**	**106.9**	**82.4**	**82.4**	**67.1**	**67.1**	**67.1**	**48.2**	**10.4**	**10.4**	**10.4**
TOTAL NETTED REMAINING SNEO (w/Contingency)	**254.4**	**45.1**	**-187.0**	**-344.1**	**-162.4**	**-157.2**	**-49.9**	**86.9**	**223.7**	**160.7**	**34.7**	**34.7**	**34.7**
TOTAL Planning Contingency (SNEO + Construction)	93.7	158.3	175.2	158.0	122.6	117.5	52.2	38.5	24.9	17.9	3.9	3.9	3.9
TOTAL NETTED REMAINING SNEO (w/o Contingency)	348.1	203.4	-11.8	-186.1	-39.8	-39.7	2.3	125.4	248.5	178.5	38.5	38.5	38.5

APPENDIX B: USACE CONTRACT LANGUAGE EXAMPLE

SECTION 01 13 55.00 18

AIR EMISSIONS REQUIREMENTS
(nyd 09)

PART 1 GENERAL

1.1 BACKGROUND

The Contractor shall comply with the air emissions requirements of this section which are intended to ensure compliance with the Federal Clean Air Act and limit the emission of Nitrogen Oxides (NOx)produced by the combustion of fossil fuels.

1.2 AIR EMISSIONS CONSULTANT (AEC)

The Contractor shall retain an independent firm having a minimum of 3 years of experience in calculating air emissions for equipment in the utility, process, construction or manufacturing industries to assist the Contractor in fulfilling the requirements of this section.

1.3 NOx EMISSIONS LIMIT

a. The Contractor shall not adversely affect the attainment plans established by the States of New York and New Jersey. The Government has allocated Air Quality Units for this contract; therefore the Contractor is limited to the following allowable NOx emissions per calendar year unless the Contractor is able to obtain additional Air Quality Units at its own expense.

	Allocated Air Quality Units (NOx Emissions Allowable Limit - Tons)
Calendar Year	
2010	20.2
2011	34.6

b. NOx emissions shall be calculated for all marine based equipment, with a maximum horsepower output of greater than or equal to **25**, operated in the area as shown on the map at the end of this Section. Emissions from the following equipment, including their auxiliary engines, shall be calculated: dredges, tugs, scows, drill boats, survey boats, supply boats, crew boats, tenders and other water based equipment associated with the Contractor's dredging operation. **Emissions shall be calculated for activities directly related to the performance of the contract.**

c. The Contractor is responsible for ensuring that contract emissions do not exceed the calendar year Allocated Air Quality Units (NOx Emissions Allowable Limit - Tons) for NOx in a given calendar year. Once the Contractor reaches Allocated Air Quality Units (NOx Emissions Allowable

Limit - Tons) in a given calendar year, all water based equipment must cease operations for the remainder of the calendar year unless the Contractor is able to obtain additional Air Quality Units at its own expense. The Contractor will not be entitled to additional time or money in the event that the Contractor exhausts the Allocated Air Quality Units (NOx Emissions Allowable Limit - Tons) made available by the Government and must stop work.

d. The Government has developed an Air Emissions Calculator that must be used by the Bidder during the preparation of its bid to ensure that NOx emissions of all equipment associated with the contract are within the calendar year Allocated Air Quality Units (NOx Emissions Allowable Limit - Tons). The calculator may be downloaded from fedteds.gov web site with the plans and specs.

1.4 AIR EMISSIONS SUBMITTAL REQUIREMENTS

1.4.1 The Contractor shall submit ten (10) copies of the following information within **Five (5) calendar days** of being notified of being the apparent low bidder.

A. The qualifications of the Contractor's Air Emissions Consultant (AEC).

B. Air Emissions Calculator

The Contractor **shall** use the air emissions calculator to estimate the emissions of NOx and provide printed versions of all emission calculation tabs.

The following is provided to describe the calculator and the input data required.

List all engines to be used on the contract on a separate line.

The calculator requires knowledge of the equipment to be used on the project, including the engine horsepower, year of manufacture (its model year), and its regulatory "Tier" level (i.e., Tier 1, Tier 2).

The calculator consists of **four** worksheets within a Microsoft® Excel workbook.
The **four** worksheets are:

- Instructions
- **Dredge Inputs and Calcs**
- **Vessel Input and Calcs**
- Emission Summary

The Instruction Worksheet provides for descriptions of the field names and the action required to input data on the Input and Calculations Worksheet.

Input and Calculations Worksheet: **These worksheet are** where the Contractor inputs information about the equipment that is or will be operating for this contract, such as the dredge engine type and name, "Tier" level, horsepower, NOx Control Method and expected number of hours of operation. Operating hours are those hours that the diesel engine is actually running or operating (not the total time spent onsite) and will be entered for each month of work. Each engine shall be entered on a separate line. Data is only entered on this worksheet; no entries are to be made on the Emission

Summary worksheet.

If an emission control technology such as a fuel emulsion or a catalytic converter is used, or will be used, to reduce NOx emissions, there is a column on the worksheet, entitled NOx Control Method, to incorporate the reduction that the technology is recognized to achieve. The NOx emission control systems effectiveness must be approved by the U.S. Environmental Protection Agency (EPA).

This worksheet also calculates the estimated emissions from the equipment information entered.

The Emission Summary worksheet presents the emission estimates by year. This worksheet is provided to help the Contractor adjust the technology or timing of their dredging operations to ensure that the estimated NOx emissions do not exceed the Allocated Air Quality Units in a given calendar year, thereby indicating whether the projected emissions are at an acceptable level.

C. Certification from the independent Air Emissions Consultant stating the following:

1)That the information provided in 1.4.1.A and 1.4.1.B is accurate;

2)That the construction schedule developed by the Contractor with its' associated marine equipment is within the calendar year Allocated Air Quality Units (NOx Emissions Allowable Limit - Tons); and

3)That any technologies, techniques, or methods identified to reduce emissions are approved by the U.S. Environmental Protection Agency (EPA).

D. Information as identified in Section 00 80 00.00 18, paragraph 1.45.**C**, Air Emissions Information to be submitted by the Contractor.

E. Should the Contractor choose to provide additional Air Quality Units at its own expense for this contract, the Contractor must provide evidence that these additional Air Quality Units are available to the Contractor, are appropriate for use on this contract for the calendar year they are to be used and can be obtained by the Contractor within 35 calendar days of being notified of being the apparent low bidder.

1.4.2 The Contractor shall submit the following information within 35 calendar days of being notified of being the apparent low bidder. If there are no changes to Contractor's 5 calendar day submission, the Contractor shall resubmit the information noting on the cover letter that there were no changes to the respective items.

A. Air Emissions Calculator (described in 1.4.1.B above).

B. Certification from an independent Air Emissions Consultant stating the following:

1)That the information provided in 1.4.2.A is accurate;

2)That the construction schedule developed by the Contractor with its' associated equipment is within the calendar year Allocated Air Quality Units (NOx Emissions Allowable Limit - Tons); and

3)That any technologies, techniques, or methods identified to reduce

emissions are approved by the U.S. Environmental Protection Agency (EPA).

C. Should the Contractor choose to provide additional Air Quality Units for this contract at its own expense, the Contractor must provide documentation that the Air Quality Units are appropriate for use on this contract for the calendar year they are to be used and provide evidence in the form of a contract or agreement, that these additional Air Quality Units are available for use by the Contractor by the 35th calendar day after being notified of being the apparent low bidder.

1.4.3 Information to be provided monthly during the execution of the contract.

A.Air Emissions Calculator and Narrative

1)The Air Emissions calculator and Narrative shall be updated monthly and submitted electronically. Updated calculations, narrative and other information associated with this task are due 10 days after the end of the month.

2)The Air Emissions Calculator shall be updated monthly to reflect actual hours worked, equipment actually used, **and daily runtime per reportable engine, and other applicable information, on the data logging sheet provided at the end of this section**; and actual emission control methods used during the previous month; and

3)Revise future emissions to reflect future hours of work remaining, equipment and emission control method adjustments.

4)A narrative explaining the changes from the baseline (Air Emissions Calculator submitted within 30 calendar days after award) to the updated Air Emissions Calculator shall be submitted.

B.Certification from an independent Air Emissions Consultant stating the following:

1)That the information provided in 1.4.3.A is accurate;

2)That the construction schedule developed by the Contractor with its' associated equipment is within the calendar year Allocated Air Quality Units (NOx Emissions Allowable Limit - Tons); and

3)That any technologies, techniques, or methods used to reduce emissions are approved by the U.S. Environmental Protection Agency (EPA).

C. If after the NTP is issued and during the execution of the Contract the Contractor chooses to provide additional Air Quality Units at its own expense, the Contractor must provide, **at least two weeks** prior to the use of the Air Quality Units, documentation that these additional Air Quality Units are appropriate for use on this contract for the calendar year they are to be used.

1.5 OPERATIONAL MONITORING, RECORDKEEPING, AND REPORTING

The Contractor shall be required to install appropriate instrumentation (data loggers) on the dredges to record and measure as a minimum engine hours of operation, , engine speed, engine temperature, and fuel use rates. The Contractor shall download data from the data loggers and

provide the information to the COR on a quarterly basis. The Contractor shall provide access to the Government and its contractors to observe the installation, operation, and download of data from the data loggers. The Contractor shall maintain the data loggers. Should a data logger fail, the Contractor shall notify the COR and maintain records manually on an hourly basis until the data logger is repaired.

The Contractor shall maintain daily records on engines that are not equipped with a data logger (i.e., engines other than dredge engines). These records will be provided to the Government on a regular basis. The records will be maintained as part of the Contractor's daily report and provided to the Government on that basis (i.e., with the same frequency as the daily report). An example of the log sheet for keeping these required records is attached at end of this section.

1.6 IN-USE TESTING OF DREDGING EQUIPMENT

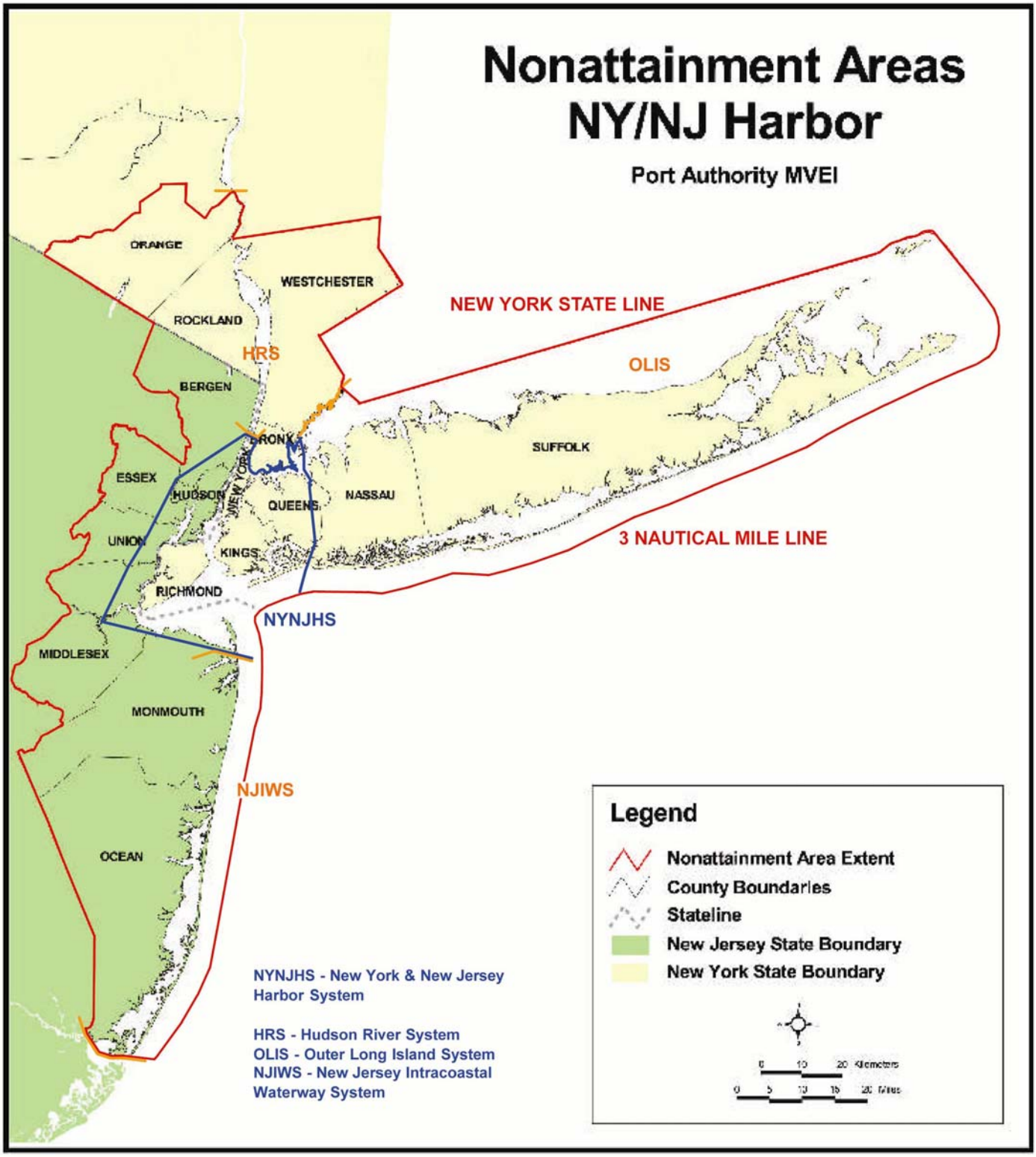
The Contractor shall cooperate with and assist the Government and its contractor(s) in obtaining measurements of emissions from the major engines powering the dredge(s) and associated equipment. The Government will be responsible for the testing program and the required equipment, while the Contractor will be responsible for making such minor physical modifications to the dredging equipment as may be necessary for successful emission testing. (Such modifications may include the installation of sampling ports on exhaust ducts or mounting brackets to support measuring equipment.) The Government and its emission testing contractor(s) will provide specific instructions on any physical modifications the Contractor is required to make after the issuance of the NTP.

The Contractor shall notify the COR of any plans to substitute or add major pieces of equipment to allow the Government to determine whether additional emission testing will be warranted. Engines with test equipment attached shall not be removed from the contract area without written consent from the COR.

1.7 MEASUREMENT AND PAYMENT

No separate payment shall be made for this item.

-- End of Section --


Nonattainment Areas
NY/NJ Harbor
Port Authority MVEI
ORANGE
WESTCHESTER
ROCKLAND
HRS
BERGEN
NEW YORK STATE LINE
OLIS
BRONX
SUFFOLK
ESSEX
HUDSON
NEW YORK
QUEENS
NASSAU
UNION
KINGS
3 NAUTICAL MILE LINE
RICHMOND
NYNJHS
MIDDLESEX
MONMOUTH
NJIWS
OCEAN
NYNJHS - New York & New Jersey Harbor System
HRS - Hudson River System
OLIS - Outer Long Island System
NJIWS - New Jersey Intracoastal Waterway System
Legend
Nonattainment Area Extent
County Boundaries
Stateline
New Jersey State Boundary
New York State Boundary
0 10 20 Kilometers
0 5 10 15 20 Miles

PAGE 6

U.S. Army Corps of Engineers - New York District PJ4

SAN2 Contract 10 Vessel Data Logging Sheet Page 7

THE PORT AUTHORITY OF NY & NJ

MONTH: _____

YEAR: _____

Page: _____ of _____

Vessel Name:

	Engine Information				Activity Information			
Date	Engine Name	Engine Type (Propulsion, Auxiliary, etc.)	Daily Runtime (hours)	Daily Fuel Consumption (tons or gallons)	# of Daily Trips to HARS or Reef	Average Transit Time Within 3-Nautical Mile Line (hours)	Average Loaded Speed (knots)	Average Unloaded Speed (knots)

U.S. Army Corps of Engineers - New York District

SAN2 Contract 10 Dredge Data Logging Sheet Page 8

THE PORT AUTHORITY OF NY & NJ

MONTH: ____________________

YEAR: ____________________

Page: ________ of ________

Dredge/Barge Name:

	Engine Information				**Activity Information**			
Date	Engine Name	Engine Type (Main, Aux, Pump, etc)	Daily Runtime (hours)	Daily Fuel Consumption (tons or gallons)	Sediment Type	Daily Dredged Volume (cubic yards)	Scow Capacity (cubic yards)	Daily Number of Scows Filled

Attachment 2 – MVERP Survey of Interest Fact Sheet

FACT SHEET

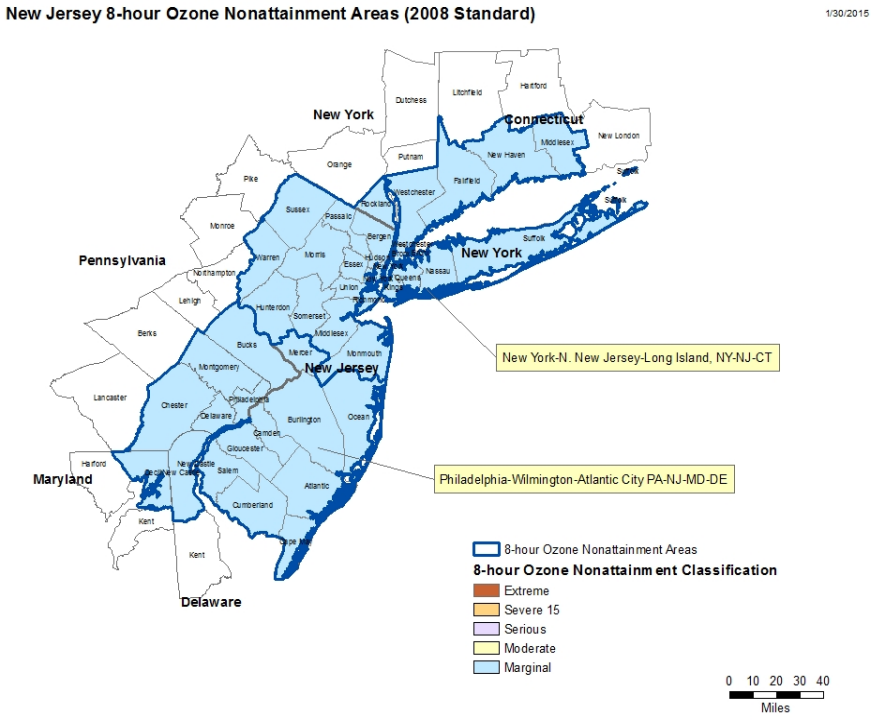
The United States Army Corps of Engineers New York District is conducting a survey to determine interest from vessel owners/operators in a Marine Vessel Engine Replacement Program, similar to the programs conducted by the Port Authority of New York and New Jersey. The Army Corps is interested in conducting engine replacement programs to offset upcoming project emissions.

What will the program pay?

The program would pay for new marine engines that have lower emissions (and typically lower fuel consumption) than existing vessel engines. The vessel owner would be responsible for costs associated with installation and any changes to onboard machinery.

Who is eligible?

The area of operation includes NY/NJ harbor, Long Island Sound, Long Island and New Jersey coast, and Philadelphia/Delaware River areas (see figure) and the Army Corps is looking for vessels that spend a significant percent of their operational time in these areas (75% or greater). Vessel owners in this area can apply for funding for propulsion and auxiliary engines.



What are the requirements?

Repowered vessels will be required to operate in the above areas for 10 years; if the vessel is moved out of the area a decreasing repayment schedule would apply (similar to the Port's program).

What is the timeframe?

The programs would be completed through a Request for Proposals anticipated to come out in

Interested?

If your company is interested in the program, please respond to the following questions:
Name of Company
Contact information for the Request for Proposal (Name, Mail, Phone, email)
What type of vessel? For example: excursion, towboat, tugboat, ferry, workboat, supply boat.
How many vessels and engines would you consider repowering?
Engine Information, if available (model year, horsepower, engine make/model, average hours)

Contact

For further questions, please contact the Starcrest Consulting Group consultant that sent you this fact sheet.

Attachment 3 – Survey of Interest Data Template

Company Name	Vessel Types	Count	Address	Phone Number	Contact Name	Email	Interested?	Percent in Study Area (>75% for eligibility)	Vessel Name	Vessel Type	Engine Type (propulsion or auxiliary)	Engine Count	Model Year	Horsepower	Make and Model	Average Hours
ABC Tow	*Tugboat*	*1*	*Staten Island NY*	*number*	*name*	*email*	*Yes*	*100%*	*Emily*	*Tugboat*	*Propulsion*	*2*	*1989*	*2000*	*CAT 3406*	*900*
ABC Tow	*Tugboat*	*1*	*Staten Island NY*	*number*	*name*	*email*	*Yes*	*100%*	*Emily*	*Tugboat*	*Auxiliary*	*2*	*1989*	*100*	*Perkins*	*1500*

Attachment 4 – Sample PANYNJ MVERP Contract with Vessel Owner

THE PORT AUTHORITY OF NEW YORK & NEW JERSEY

MEMORANDUM

TO: Karen Eastman
FROM: Larry Waxman
DATE: November 24, 2008

RE: **Marine Vessel Engine Replacement Program (MVERP) for Vessels that Operate within the United States Environmental Protection Agency Designated New York-Northern New Jersey-Connecticut-Long Island Ozone Non-Attainment Area, RFP #15091; Purchase Order #4500057399**

COPY TO: SEE BELOW

Transmitted herewith is the original contract as described above with White Near Coastal Towing, in the net estimated amount of $180,700.

Conformed copies of this contract are being distributed as follows:

R. Hsu
C. Tse
J. Huxel (2)
M. Bennett
L. Waxman
J. Hutnick (2)
M. Masters (2)
D. Bailey
J. Grossgold
D. Vrecenak
PSD Files

Larry Waxman
Manager, Technology and Operational
Procurement Services Division

THE PORT AUTHORITY OF NY & NJ

November 3, 2008

Mr. Roy White
President
White Near Coastal Towing
333 Jackson Avenue, ST 9
Syosset, NY 11791

RE: **MARINE VESSEL ENGINE REPLACEMENT PROGRAM (MVERP) FOR VESSELS THAT OPERATE WITHIN THE UNITED STATES ENVIRONMENTAL PROTECTION AGENCY DESIGNATED NEW YORK- NORTHERN NEW JERSEY- CONNECTICUT- LONG ISLAND OZONE NON-ATTAINMENT AREA; REQUEST FOR PROPOSAL NUMBER 15091; PURCHASE ORDER NUMBER 4500057399; CAPTAIN ZEKE**

Dear Mr. White:

The Port Authority of New York and New Jersey ("The Port Authority" or "the Authority") hereby offers to enter into an agreement, subject to the provisions of this letter, as hereinafter set forth ("the Agreement") with White Near Costal Towing, ("the Contractor") for the performance of the services under the above-referenced Contract.

The Contract between the parties shall consist of the following items and in case of a conflict between or among the said items; their precedence shall be in the following descending order.

1. This Letter of Acceptance, which shall control over all other documents.
2. The Port Authority's Request for Proposal (RFP) # 15091, Attachment B, Part I- "Contract Specific Terms and Conditions"; Part II-"Standard Contract Terms and Conditions"
3. Addendum #1,Non- Attainment Area (NAA) Map
4. The following sections of your proposal time stamped, 1:21 PM, April 17, 2008

   - Attachment B- Part III -Cost Proposal Form #2,"Captain Zeke"
   - Memo RE: MARINE VESSEL ENGINE REPLACEMENT PROGRAM (MVERP) for Vessels that Operate within the United States Environmental Protection Agency Designated New York-Northern New Jersey-Connecticut-Long Island Ozone Non-Attainment Area, RFP #15091: Clarifications and Concerns time stamped 3:34 PM, June 2, 2008
   - Letter of Transmittal

One Madison Avenue,7th fl
New York, NY 10010
T: 212 435 7000

- Executive Summary
- Proposal
- Technical data
- USCG document Survey
- Attachment A: Agreement on Terms Of Discussion

Please note the Port Authority's sole financial obligation hereunder is to reimburse White Near Coastal Towing for the actual cost of the replacement and auxiliary engines in accordance with the provisions of the RFP, in an amount not to exceed $180,700. No other amounts shall be payable to White Near Coastal Towing hereunder including any other amounts contained in the cost proposal sheet #2 submitted by White Near Coastal Towing.

In addition, the following provisions shall apply:

The re-powered vessel, Captain Zeke", must be operational no later than six months following the date on which the Port Authority executes this letter.

White Near Coastal Towing agrees to allow for site visits by a representative of the Port Authority at the location where the work will be performed to confirm the following events:

Receipt of the new engine
Completion of installation in accordance with manufacturer instructions
Destruction of the existing engine or rendering them inoperable
Witness the launch of the re-powered vessel
Running test with engine manufacturer's representatives

White Near Coastal Towing will provide documentation to demonstrate the "Captain Zeke" operation within the Non-Attainment Area in accordance with Attachment B-Part I, Contract Specific Terms and Conditions. This documentation is to be provided to the Port Authority of New York and New Jersey on a semi-annual basis for a period of ten years, commencing with the successful completion of sea trials. Information must be submitted prior to the 5th day following the six-month anniversary of the successful completion of sea trials. Information should be sent to:

Ms Dorian Bailey
Port Authority of NY & NJ
Materials Engineering Division
241 Erie Street, Room 234
Jersey City NJ. 07310
Telephone: 201-216-2963
dbailey@panynj.gov

or to such other individual as may subsequently be designated in writing.

Except as they have been identified above, no other documents or submission by the contractor are to be considered as part of the Contract.

Prior to the commencement of work, please submit to the Port Authority your insurance certificates as required per the contract, Attachment B-Part I Section 4, entitled "Insurance". Please send your certificate to: General Manager, Risk Financing, 225 Park Avenue South, 12th floor, New York, New York 10003. Please reference CITS #2431N on your certificate.

Your Port Authority Contract Administrator is John Hutnick. He can be reached at 973-792-4663 or jhutnick@panynj.gov. For payment, invoicing and administrative purposes, Purchase Order #4500057399 will be assigned to the Contract and must be referenced on all correspondence, including invoices.

We look forward to working with White Near Coastal Towing to advance this regionally significant air quality improvement initiative.

If you are in agreement with the above, please indicate such agreement by signing the duplicate originals of this Letter of Acceptance below and returning both to the attention of Maryellen Bennett, 7th Floor, at the address provided at the bottom of page 1. A copy is enclosed for your records.

Very truly yours,

APPROVED:	
FORM	TERMS

The Port Authority of New York & New Jersey

By: _____
Title: Director of Procurement Department
Date: 11/21/08

Agreed:
White Near Coastal Towing

By: Roy J White
Title: President
Date: 11/14/08

ATTACHMENT B

CONTRACT TERMS AND CONDITIONS FOR FACILITY SERVICES

TABLE OF CONTENTS

PART I – CONTRACT SPECIFIC TERMS AND CONDITIONS

PART I- CONTRACT SPECIFIC TERMS AND CONDTIONS

1. General Agreement

Subject to all of the terms and conditions of this Contract, the undersigned (hereinafter called the "Contractor") hereby offers and agrees to provide all the necessary supervision, personnel, equipment, materials and all other things necessary to perform the Work required by this Contract as specified in Part I, and fully set forth in the Scope of Work, in Attachment D and do all other things necessary or proper therefor or incidental thereto, all in strict accordance with the provisions of the Contract Documents and any future changes therein; and the Contractor further agrees to assume and perform all other duties and obligations imposed upon him/her by this Contract.

In addition, all things not expressly mentioned in the Specifications but involved in the carrying out of their intent and in the complete and proper execution of the matters referred to in and required by this Contract are required by the Specifications, and the Contractor shall perform the same as though they were specifically delineated, described and mentioned therein.

2. Billing and Payment

Subject to the provisions of this Contract, the Port Authority agrees to pay and the Contractor agrees to accept from the Port Authority as full and complete compensation for the performance of the Port Authority's obligations under this Contract an amount computed from the prices as set forth in the Cost Proposal Form, subject, however, to all payments and adjustments as hereinafter specifically provided.

The Contractor's compensation for work will be computed based on the actual work performed. Payments made hereunder are subject to such adjustment as may be necessitated following Port Authority verification of the accuracy of amounts billed.

Standard payment terms are net thirty days after receipt of invoice.
The Port Authority agrees to reimburse each Contractor the amount actually paid by the Contractor for replacement (Make and Model) engines to be placed in the (Vessel Name)as proposed in the Proposer's proposal (Date) provided such amount is no greater than that contained in the proposal. No other costs will be reimbursed.
The Contractor must submit both its actual paid invoices for the new engines and proof that the old engines have been scrapped (as evidenced by a contract, delivery/purchase order for scrappage, witness by Port Authority representative, or by a letter from the scrap yard confirming that the engines were destroyed) to the Port Authority.
Documentation shall also be provided to show that the new engines have been installed and successfully sea tested. The company is to advise the Port Authority of installation,

scrappage and sea trials sufficiently in advance so that Port Authority representatives may have the opportunity to witness these events.

If the Contractor defaults on the requirement regarding hours of operation within the NAA, the Port Authority shall have the right to terminate the contract and upon such event the Contractor shall make partial and proportional repayment of the Port Authority's engine purchase costs in accordance with the following schedule:

Default Year	Amount Reimbursed
Amount paid by Port Authority:_____	
Year 1-	Amount paid by Port Authority x 1.0
Year 2 -	Amount paid by Port Authority x .90
Year 3 -	Amount paid by Port Authority x .80
Year 4	Amount paid by Port Authority x .70
Year 5	Amount paid by Port Authority x .60
Year 6	Amount paid by Port Authority x .50
Year 7	Amount paid by Port Authority x .40
Year 8	Amount paid by Port Authority x .30
Year 9	Amount paid by Port Authority x .20

Should the Contractor claim mitigating factors beyond its control were the cause of such default, the Authority will take those factors into account when deciding whether to terminate the contract and require the default repayment and the operation of the replacement engines.

The Port Authority is only providing funding up to the cost of new replacement engines for vessel propulsion and/or auxiliary power. The Port Authority is not providing technical review or approval of the work, and the Contractor is solely responsible for that work. Therefore, the Contractor assumes the risk of all loss or damage arising out of or in connection with the work and shall indemnify and hold harmless the Authority against all claims, suits, losses or damages arising out of or in connection with the engine replacement work.

"Final Payment," as the term is used throughout this Contract, shall be the final payment made for services rendered in the final month of the Contract term or any extension thereof. However, should this Contract be terminated for any reason prior to the final month of the Contract Term then Final Payment shall be the payment made for services rendered in the month during which such termination becomes effective.

The acceptance by the Contractor, or by anyone claiming by or through him, of Final Payment shall be and shall operate as a release to the Authority of all claims and of all liability to the Contractor for all things done or furnished in connection with the Contract and for every act and neglect of the Authority and others relating to or arising out of the Contract, including claims arising out of breach of Contract and claims based on claims of third persons. No payment, however,

final or otherwise, shall operate to release the Contractor from any obligation in connection with this Contract.

The Contractor's agreement as provided in the immediately preceding paragraph shall be deemed to be based upon the consideration forming part of this Contract as a whole and not to be gratuitous; but in any event even if deemed gratuitous and without consideration, such agreement as provided in the immediately preceding paragraph shall nevertheless be effective. Such release shall include all claims, whether or not in litigation and even though still under consideration by the Authority. Such release shall be effective notwithstanding any purported reservation of right by the Contractor to preserve such claim. The acceptance of any check designated as "Final Payment" or bearing any similar designation shall be conclusively presumed to demonstrate the intent of the Contractor that such payment was intended to be accepted as final, with the consequences provided in this numbered clause, notwithstanding any purported reservation of rights.

The Contractor agrees that he shall not be entitled to, and hereby waives any right he might otherwise have to, and shall not seek any judgment whether under this Contract or otherwise for any such Final Payment for an amount equivalent thereto or based thereon, or for any part thereof, if such judgment would have the effect of varying, setting aside, disregarding or making inapplicable the terms of this numbered clause or have the effect in any way of entitling the Contractor to accept such Final Payment or an amount equivalent thereto or based thereon or any part thereof other than in the same fashion as a voluntary acceptance of a Final Payment subject to all terms of this Contract including this numbered clause, unless and until the Contractor should obtain a judgment on any claim arising out of or in connection with this Contract (including a claim based on breach of Contract) for an amount not included in said Final Payment. In any case in which interest is allowable on the amount of the Final Payment, such interest shall be at the rate of 6% per annum for the period, if any, in which such interest is due.

5. Extra Work

The Contractor is required to provide separate materials, supplies, equipment and personnel for Extra Work when such is deemed necessary by the Manager. "Extra Work" as used herein shall be defined as work which differs from that expressly or impliedly required by the Specifications in their present form. Total Extra Work performed by the Contractor shall not exceed six percent (6%) of the Total Contract Price of this Contract for the entire Term of this Contract including extensions thereof.

An increase in area or frequency does not constitute Extra Work, but shall be compensable based on the prices in the Cost Proposal Form and the paragraph herein titled "Increase or Decrease in Areas or Frequencies".

The Contractor is required to perform Extra Work pursuant to a written order of the Manager expressly recognizing such work as Extra Work. If Lump Sum or Unit Price compensation cannot be agreed upon by the parties in writing

prior to the start of Work, the Contractor shall perform such Extra Work and the Contractor's compensation shall be increased by the sum of the following amounts and such amounts only: (1) the actual net cost, in money, of the labor, and material, required for such Extra Work; (2) ten percent (10%) of the amount under (1) above; (3) such rental as the Manager deems reasonable for plant and equipment (other than small tools) required for such Extra Work; (4) if the Extra Work is performed by a subcontractor, an additional five percent (5%) of the sum of the amounts under (1) through (3) above.

As used in this numbered clause (and in this clause only):

"Labor" means laborers, mechanics, and other employees below the rank of supervisor, directly employed at the Site of the Work subject to the Manager or his/her designee's authority to determine what employees of any category are "required for Extra Work" and as to the portion of their time allotted to Extra Work; and "cost of labor" means the wages actually paid to and received by such employees plus a proper proportion of (a) vacation allowances and union dues and assessments which the employer actually pays pursuant to contractual obligation upon the basis of such wages, and (b) taxes actually paid by the employer pursuant to law upon the basis of such wages and workers' compensation premiums paid pursuant to law. "Employees" as used above means only the employees of one employer.

"Net Cost" shall be the Contractor's actual cost after deducting all permitted cash and trade discounts, rebates, allowances, credits, sales taxes, commissions, and refunds (whether or not any or all of the same shall have been taken by the Contractor) of all parts and materials purchased by the Contractor solely for the use in performing its obligation hereunder provided, such purchase has received the prior written approval of the Manager as required herein. The Contractor shall promptly furnish to the Manager such bills of sale and other instruments as may be required by it, executed, acknowledged and delivered, assuring to it title to such materials, supplies, equipment, parts, and tools free of encumbrances.

"Materials" means temporary and consumable materials as well as permanent materials; and "cost of materials" means the price (including taxes actually paid by the Contractor pursuant to law upon the basis of such materials) for which such materials are sold for cash by the manufacturers or producers thereof, or by regular dealers therein, whether or not such materials are purchased directly from the manufacturer, producer or dealer (or if the Contractor is the manufacturer or producer thereof, the reasonable cost to the Contractor of the manufacture and production), plus the reasonable cost of delivering such materials to the Site of the Work in the event that the price paid to the manufacturer, producer or dealer does not include delivery and in case of temporary materials, less their salvage value, if any.

The Manager shall have the authority to decide all questions in connection with the Extra Work. The exercise by the Manager of the powers and authorities vested in him/her by this section shall be binding and final upon the Port Authority and the Contractor.

The Contractor shall submit all reports, records and receipts as are requested by the Manager so as to enable him/her to ascertain the time expended in the performance of the Extra Work. the quantity of labor and materials used therein and the cost of said labor and materials to the Contractor.

The provisions of this Contract relating generally to Work and its performance shall apply without exception to any Extra Work required and to the performance thereof. Moreover, the provisions of the Specifications relating generally to the Work and its performance shall also apply to any Extra Work required and to the performance thereof, except to the extent that a written order in connection with any particular item of Extra Work may expressly provide otherwise.

If the Contractor deems work to be Extra Work, the Contractor shall give written notice to the Manager within twenty-four (24) hours of performing the work that he so considers as Extra Work, and failure of the Contractor to provide said notice shall be a waiver of any claim to an increase in compensation for such work and a conclusive and binding determination that it is not Extra Work.

The Contractor shall supply the amount of materials, supplies, equipment and personnel required by the Manager within four (4) hours following the receipt of written or verbal notice from the Manager, or in the case of an emergency as determined by the Manager, within four (4) hours following the receipt by the Contractor of the Manager's written or oral notification. Where oral notification is provided hereunder, the Manager shall thereafter confirm the same in writing.

All Extra Work shall be billed to the Port Authority on a separate invoice on a monthly basis.

Section 4. Insurance

The Contractor shall maintain throughout the term of this agreement (including the ten year minimum period of operation requested hereunder) replacement cost hull insurance including, but not limited to the cost of the engines. The Port Authority shall be a named insured on such policy of insurance. Should such insurance not be in force at any time throughout the term of the agreement, the Authority shall have the right to terminate the contract and to be reimbursed for its payment for the engines in accordance with the payment schedule outlined in Attachment B Part I Section 2 above.

The Contractor shall take out, maintain and pay the premiums on the below stated policy or policies of insurance, including but not limited to premises-operations and products-completed operations, broad form property damage and independent contractors coverage, with a contractual liability endorsement covering the obligations assumed by the Contractor under this Contract and, if vehicles are to be used to carry out the performance of this Contract, then the Contractor shall also procure, maintain and pay the premiums on Automobile Liability Insurance covering owned, non-owned and rented vehicles in limits not less than the amounts set forth below:

COMMERCIAL GENERAL LIABILITY INSURANCE

$5 million combined single limit per occurrence for bodily injury and property damage liability.

AUTOMOTIVE LIABILITY INSURANCE

$5 million combined single limit per accident for bodily injury and property damage liability.

PROPERTY DAMAGE INSURANCE – on an all-risk basis with full replacement value for each new tugboat engine, including but not limited to, spare parts, special tools and test equipment, covering all phases of this contract, including the performance-testing phase of this contract. This said policy shall include The Port Authority of New York and New Jersey as loss payee.

PROTECTION AND INDEMNITY INSURANCE – a policy of Marine Protection and Indemnity Insurance and Chartered Legal Liability Insurance, where applicable, relating to the operation, maintenance, or use of any vessel (whether self-propelled or being towed) in connection with the work to be performed in this contract, in a limit of liability of not less than $5 million for any one occurrence, including masters and members of crews of vessels.

Such liability policy or policies shall contain the following endorsements.

"The insurer shall not, without obtaining express advance permission from the General Counsel of the Authority, raise any defense involving in any way the jurisdiction of the Tribunal over the person of the Authority, the immunity of the Authority, its Commissioners, officers, agents or employees, the governmental nature of the Port Authority, or the provisions of any statutes respecting suits against the Port Authority."

The liability policy or policies carried by the Contractor and Subcontractors must contain **"Cross-Liability/Severability of Interests coverage**, providing that the protection afforded the Contractor thereunder, with respect to any claim or action against the Contractor by a third person, shall pertain and apply with like effect with respect to any claim or action against the contractor by the Port Authority, or against the Port Authority by the Contractor, but said endorsement shall not limit, vary, change or affect the provisions afforded the Port Authority as an additional insured.

The Port Authority of New York and New Jersey shall be named as an additional insured in the policy or policies set forth above.

In addition, the Contractor shall take out, maintain and pay premiums on **Workers' Compensation Insurance** (including other states coverage) in accordance with the requirements of the law.

Certified copies of the policy or policies described above or a certificate or certificates evidencing the existence thereof shall be delivered to the General Manager, Risk Management, The Port Authority of New York and New Jersey, 225 Park Avenue South, 12th Floor, New York, NY 10003, within ten (10) days after the execution of this Contract by both the Authority and the Contractor. Such policy or policies, certificate or certificates shall state the number of this contract and shall contain a valid provision or endorsement that the policy or policies may not be canceled, terminated, changed or modified without giving thirty (30) days written advance notice thereof to the Port Authority. Renewal policies shall be delivered to the Port Authority at least fifteen (15) days prior to the expiration date of each expiring policy. If at any time any of the certificates or policies shall be or become unsatisfactory to the Port Authority as to form or

substance, or if the carrier issuing any such certificate or policy shall be or become unsatisfactory to the Port Authority, the Contractor shall promptly obtain a new and satisfactory certificate and policy. Upon request of the General Manager, Risk Management, the Contractor shall furnish the Port Authority with a certified copy of each policy stated above. **(CITS #2431N)**

ATTACHMENT B- PART II- STANDARD CONTRACT TERMS AND CONDITIONS

STANDARD CONTRACT TERMS AND CONDITIONS

PART I GENERAL DEFINITIONS

To avoid undue repetition, the following terms, as used in this Agreement, shall be construed as follows:

Authority or Port Authority - shall mean the Port Authority of New York and New Jersey.

Contract, Document or Agreement - shall mean the writings setting forth the scope, terms, conditions and Specifications for the procurement of Goods and/or Services, as defined hereunder and shall include, but not be limited to: Invitation for Bid (IFB), Request for Quotation (RFQ), Request for Proposal (RFP), Purchase Order (PO), Cover Sheet, executed Signature Sheet, AND PRICING SHEETS with Contract prices inserted," "STANDARD CONTRACT TERMS AND CONDITIONS," and, if included, attachments, endorsements, schedules, exhibits, or drawings, the Authority's acceptance and any written addenda issued over the name of the Authority's Manager, Purchasing Services Division.

Days or Calendar Days - shall mean consecutive calendar days, Saturdays, Sundays, and holidays, included.

Week - unless otherwise specified, shall mean seven (7) consecutive calendar days, Saturdays, Sundays, and holidays.

Month - unless otherwise specified, shall mean a calendar month.

Director - shall mean the Director of the Department which operates the facility of the Port Authority at which the services hereunder are to be performed, for the time being, or his/her successor in duties for the purpose of this Contract, acting personally or through one of his/her authorized representatives for the purpose of this Contract.

Manager - shall mean the Manager of the Facility for the time being or his successor in duties for the purpose of this Contract, acting personally or through his duly authorized representative for the purpose of this Contract.

No person shall be deemed a representative of the Director or Manager except to the extent specifically authorized in an express written notice to the Contractor signed by the Director or Manager, as the case may be. Further, no person shall be deemed a successor in duties of the Director unless the Contractor is so notified in writing signed by the Authority's Manager, Purchasing Services Division. No person shall be deemed a successor in duties of the Manager unless the Contractor is so notified in a writing signed by the Director.

Minority Business Enterprise (MBE) - shall mean a business entity which is at least 51% owned and controlled by one or more members of one or more minority groups, or, in the case of a publicly held corporation, at least 51% of the stock of which is owned by one or more minority groups, and whose management and daily business operations are controlled by one or more such individuals who are citizens or permanent resident aliens.

"Minority Group" means any of the following racial or ethnic groups:

(a) Black persons having origins in any of the Black African racial groups not of Hispanic origin;

(b) Hispanic persons of Mexican, Puerto Rican, Dominican, Cuban, Central or South American culture or origin, regardless of race;

(c) Asian and Pacific Islander persons having origins in any of the original peoples of the Far East, Southeast Asia, The Indian Subcontinent, or the Pacific Islands;

(d) Native American or Alaskan native persons having origins in any of the original peoples of North
America and maintaining identifiable tribal affiliations through membership and participation or community identification.

Site of the Work - or words of similar import shall mean the Facility and all buildings and properties associated therewith as described in this Contract.

Small Business Enterprise (SBE) - The criteria for a Small Business Enterprise are:

- o The principal place of business must be located in New York or New Jersey;
- o The firm must have been in business for at least three years with activity;
- o Average gross income limitations by industry as established by the Port Authority.

Subcontractor - shall mean anyone who performs work (other than or in addition to the furnishing of materials, plant or equipment) in connection with the services to be provided hereunder, directly or indirectly for or on behalf of the Contractor (and whether or not in privity of contract with the Contractor), but shall not include any person who furnished merely his own personal labor or his own personal services. "Subcontractor", however, shall exclude the Contractor or any subsidiary or parent of the Contractor or any person, firm or corporation which has a substantial interest in the Contractor or in which the Contractor or the parent or the subsidiary of the Contractor, or an officer or principal of the Contractor or of the parent of the subsidiary of the Contractor has a substantial interest, provided, however, that for the purpose of the clause hereof entitled "Assignments and Subcontracts" the exclusion in this paragraph shall not apply to anyone but the Contractor itself.

Women-Owned Business Enterprise (WBE) - shall mean a business enterprise which is at least 51% owned by one or more women, or, in the case of a publicly held corporation, at least 51% of the stock of which is owned by one or more women and whose management and daily business operations are controlled by one or more women who are citizens or permanent or resident aliens.

Work - shall mean all services, equipment and materials (including materials and equipment, if any, furnished by the Authority) and other facilities and all other things necessary or proper for, or incidental to the services to be performed or goods to be furnished in connection with the service to be provided hereunder.

PART II GENERAL PROVISIONS

1. Facility Rules and Regulations of The Port Authority

a. The Contractor shall observe and obey (and compel its officers, employees, guests, invitees, and those doing business with it, to observe and obey) the facility Rules and Regulations of the Port Authority now in effect, and such further reasonable Rules and Regulations which may from time to time during the term of this Agreement be promulgated by the Port Authority for reasons of safety, health, preservation of property or maintenance of a good and orderly appearance and efficient operation of the Facility. The Port Authority agrees that, except in case of emergency, it shall give notice to the Contractor of every Rule and Regulation hereafter adopted by it at least five days before the Contractor shall be required to comply therewith.

b. A copy of the facility Rules and Regulations of the Port Authority shall be available for review by the Contractor at the Office of the Secretary of the Port Authority.

2. Contractor Not An Agent

This Agreement does not constitute the Contractor the agent or representative of the Port Authority for any

purpose whatsoever except as may be specifically provided in this Agreement. It is hereby specifically acknowledged and understood that the Contractor, in performing its services hereunder, is and shall be at all times an independent Contractor and the officers, agents and employees of the Contractor shall not be or be deemed to be agents, servants or employees of the Port Authority.

3. Contractor's Warranties

The Contractor represents and warrants:

a. That it is financially solvent, that it is experienced in and competent to perform the requirements of this Contract, that the facts stated or shown in any papers submitted or referred to in connection with the solicitation are true, and, if the Contractor be a corporation, that it is authorized to perform this Contract;

b. That it has carefully examined and analyzed the provisions and requirements of this Contract, and that from its own investigations it has satisfied itself as to the nature of all things needed for the performance of this Contract, the general and local conditions and all other matters which in any way affect this Contract or its performance, and that the time available to it for such examination, analysis, inspection and investigation was adequate;

c. That the Contract is feasible of performance in accordance with all its provisions and requirements and that it can and will perform it in strict accordance with such provisions and requirements;

d. That no Commissioner, officer, agent or employee of the Port Authority is personally interested directly or indirectly in this Contract or the compensation to be paid hereunder;

e. That, except only for those representations, statements or promises expressly contained in this Contract, no representation, statement or promise, oral or in writing, of any kind whatsoever by the Port Authority, its Commissioners, officers, agents, employees or consultants has induced the Contractor to enter into this Contract or has been relied upon by the Contractor, including any with reference to: (1) the meaning, correctness, suitability, or completeness of any provisions or requirements of this Contract; (2) the nature, quantity, quality or size of the materials, equipment, labor and other facilities needed for the performance of this Contract; (3) the general or local conditions which may in any way affect this Contract or its performance; (4) the price of the Contract; or (5) any other matters, whether similar to or different from those referred to in (1) through (4) immediately above, affecting or having any connection with this Contract, the bidding thereon, any discussions thereof, the performance thereof or those employed therein or connected or concerned therewith.

Moreover, the Contractor accepts the conditions at the Site of the Work as they may eventually be found to exist and warrants and represents that it can and will perform the Contract under such conditions and that all materials, equipment, labor and other facilities required because of any unforeseen conditions (physical or otherwise) shall be wholly at its own cost and expense, anything in this Contract to the contrary notwithstanding.

Nothing in the Specifications or any other part of the Contract is intended as or shall constitute a representation by the Port Authority as to the feasibility of performance of this Contract or any part thereof.

The Contractor further represents and warrants that it was given ample opportunity and time and by means of this paragraph was requested by the Port Authority to review thoroughly all documents forming this Contract prior to opening of Bids on this Contract in order that it might request inclusion in this Contract of any statement, representation, promise or provision which it desired or on which it wished to place reliance; that it did so review said documents, that either every such statement, representation, promise or provision has been included in this Contract or else, if omitted, that it expressly relinquishes the benefit of any such omitted statement, representation, promise or provision and is willing to perform this Contract without claiming reliance thereon or making any other claim on account of such omission.

The Contractor further recognizes that the provisions of this numbered clause (though not only such provisions) are essential to the Port Authority's consent to enter into this Contract and that without such provisions, the Authority would not have entered into this Contract.

4. Personal Non-Liability

Neither the Commissioners of the Port Authority nor any of them, nor any officer, agent or employee thereof, shall be charged personally by the Contractor with any liability, or held personally liable to the Contractor under any term or provision of this Agreement, or because of its execution or attempted execution, or because of any breach, or attempted or alleged breach, thereof.

5. Equal Employment Opportunity, Affirmative Action, Non-Discrimination

a. The Contractor is advised to ascertain and comply with all applicable federal, State and local statutes, ordinances, rules and regulations and, federal Executive Orders, pertaining to equal employment opportunity, affirmative action, and non-discrimination in employment.

b. Without limiting the generality of any other term or provision of this Contract, in the event of the Contractor's non-compliance with the equal opportunity and non-discrimination clause of this Contract, or with any of such statutes, ordinances, rules, regulations or Orders, this Contract may be cancelled, terminated or suspended in whole or in part.

6. Rights and Remedies of the Port Authority

The Port Authority shall have the following rights in the event the Contractor is deemed guilty of a breach of any term whatsoever of this Contract:

a. The right to take over and complete the Work or any part thereof as agent for and at the expense of the Contractor, either directly or through others.

b. The right to cancel this Contract as to any or all of the Work yet to be performed.

c. The right to specific performance, an injunction or any appropriate equitable remedy.

d. The right to money damages.

For the purpose of this Contract, breach shall include but not be limited to the following, whether or not the time has yet arrived for performance of an obligation under this Contract: a statement by the Contractor to any representative of the Port Authority indicating that the Contractor cannot or will not perform any one or more of its obligations under this Contract; any act or omission of the Contractor or any other occurrence which makes it improbable at the time that it will be able to perform any one or more of its obligations under this Contract; any suspension of or failure to proceed with any part of the Work by the Contractor which makes it improbable at the time that it will be able to perform any one or more of its obligations under this Contract.

The enumeration in this numbered clause or elsewhere in this Contract of specific rights and remedies of the Port Authority shall not be deemed to limit any other rights or remedies which the Authority would have in the absence of such enumeration; and no exercise by the Authority of any right or remedy shall operate as a waiver of any other of its rights or remedies not inconsistent therewith or to stop it from exercising such other rights or remedies.

7. Rights and Remedies of the Contractor

Inasmuch as the Contractor can be adequately compensated by money damages for any breach of this Contract which may be committed by the Port Authority, the Contractor expressly agrees that no default, act or omission of the Port Authority shall constitute a material breach of this Contract, entitling the Contractor to cancel or rescind this Contract or to suspend or abandon performance.

8. Submission To Jurisdiction

The Contractor hereby irrevocably submits itself to the jurisdiction of the Courts of the State of New York and New Jersey, in regard to any controversy arising out of, connected with, or in any way concerning this Contract.

The Contractor agrees that the service of process on the Contractor in relation to such jurisdiction may be

made, at the option of the Port Authority, either by registered or certified mail addressed to it at the address of the Contractor indicated on the signature sheet, or by actual personal delivery to the Contractor, if the Contractor is an individual, to any partner if the Contractor be a partnership or to any officer, director or managing or general agent if the Contractor be a corporation.

Such service shall be deemed to be sufficient when jurisdiction would not lie because of the lack of basis to serve process in the manner otherwise provided by law. In any case, however, process may be served as stated above whether or not it might otherwise have been served in a different manner.

9. Harmony

a. The Contractor shall not employ any persons or use any labor, or use or have any equipment, or permit any condition to exist which shall or may cause or be conducive to any labor complaints, troubles, disputes or controversies at the Facility which interfere or are likely to interfere with the operation of the Port Authority or with the operations of lessees, licensees or other users of the Facility or with the operations of the Contractor under this Contract.

The Contractor shall immediately give notice to the Port Authority (to be followed by written notices and reports) of any and all impending or existing labor complaints, troubles, disputes or controversies and the progress thereof. The Contractor shall use its best efforts to resolve any such complaint, trouble, dispute or controversy. If any type of strike, boycott, picketing, work stoppage, slowdown or other labor activity is directed against the Contractor at the Facility or against any operations of the Contractor under this Contract, whether or not caused by the employees of the Contractor, and if any of the foregoing, in the opinion of the Port Authority, results or is likely to result in any curtailment or diminution of the services to be performed hereunder or to interfere with or affect the operations of the Port Authority , or to interfere with or affect the operations of lessees, licensees, or other users of the Facility or in the event of any other cessation or stoppage of operations by the Contractor hereunder for any reason whatsoever, the Port Authority shall have the right at any time during the continuance thereof to suspend the operations of the Contractor under this Contract, and during the period of the suspension the Contractor shall not perform its services hereunder and the Port Authority shall have the right during said period to itself or by any third person or persons selected by it to perform said services of the Contractor using the equipment which is used by the Contractor in its operations hereunder as the Port Authority deems necessary and without cost to the Port Authority. During such time of suspension, the Contractor shall not be entitled to any compensation. Any flat fees, including management fees, shall be prorated. Prior to the exercise of such right by the Port Authority, it shall give the Contractor notice thereof, which notice may be oral. No exercise by the Port Authority of the rights granted to it in the above subparagraph shall be or be deemed to be a waiver of any rights of termination or revocation contained in this Contract or a waiver of any rights or remedies which may be available to the Port Authority under this Contract or otherwise.

b. During the time that the Contractor is performing the contract, other persons may be engaged in other operations on or about the worksite including Facility operations, pedestrian, bus and vehicular traffic and other Contractors performing at the worksite, all of which shall remain uninterrupted.

The Contractor shall so plan and conduct its operations as to work in harmony with others engaged at the site and not to delay, endanger or interfere with the operation of others (whether or not specifically mentioned above), all to the best interests of the Port Authority and the public as may be directed by the Port Authority.

10. Claims of Third Persons

The Contractor undertakes to pay all claims lawfully made against it by subcontractors, suppliers and workers, and all claims lawfully made against it by other third persons arising out of or in connection with

or because of the performance of this Contract and to cause all subcontractors to pay all such claims lawfully made against them.

11. No Third Party Rights

Nothing contained in this Contract is intended for the benefit of third persons, except to the extent that the Contract specifically provides otherwise by use of the words "benefit" or "direct right of action."

12. Provisions of Law Deemed Inserted

Each and every provision of law and clause required by law to be inserted in this Contract shall be deemed to be inserted herein and the Contract shall be read and enforced as though it were included therein, and if through mistake or otherwise any such provision is not inserted, or is not correctly inserted, then upon the application of either party, the Contract shall forthwith be physically amended to make such insertion.

13. Costs Assumed By The Contractor

It is expressly understood and agreed that all costs of the Contractor of whatever kind or nature and whether imposed directly upon the Contractor under the terms and provisions hereof or in any other manner whatsoever because of the requirements of the operation of the service or otherwise under this Agreement shall be borne by the Contractor or without compensation or reimbursement from the Port Authority, except as specifically set forth in this Agreement. The entire and complete cost and expense of the Contractor's services and operations hereunder shall be borne solely by the Contractor and under no circumstances shall the Port Authority be liable to any third party (including the Contractor's employees) for any such costs and expenses incurred by the Contractor and under no circumstances shall the Port Authority be liable to the Contractor for the same, except as specifically set forth in this Section.

14. Default, Revocation or Suspension of Contract

a. If one or more of the following events shall occur:

1. If fire or other cause shall destroy all or a substantial part of the Facility.

2. If any governmental agency shall condemn or take a temporary or permanent interest in all or a substantial part of the Facility, or all of a part of the Port Authority's interest herein;

then upon the occurrence of such event or at any time thereafter during the continuance thereof, the Port Authority shall have the right on twenty-four (24) hours written notice to the Contractor to revoke this Contract, such revocation to be effective upon the date and time specified in such notice. .

In such event this Contract shall cease and expire on the effective date of revocation as if said date were the date of the expiration of this Contract. Such revocation shall not, however, relieve the Contractor of any liabilities or obligations hereunder which shall have accrued on or prior to the effective date of revocation.

b. If one or more of the following events shall occur:

1. The Contractor shall become insolvent, or shall take the benefit of any present or future insolvency statute, or shall make a general assignment for the benefit of creditors, or file a voluntary petition in bankruptcy or a petition or answer seeking an arrangement or its reorganization or the readjustment of its indebtedness under the federal bankruptcy laws or under any other law or statute of the United States or of any State thereof, or consent to the appointment of a receiver, trustee, or liquidator of all or substantially all its property; or
2. By order or decree of a court the Contractor shall be adjudged bankrupt or an order shall be made approving a petition filed by any of the creditors, or, if the Contractor is a corporation,

by any of the stockholders of the Contractor, seeking its reorganization or the readjustment of its indebtedness under the federal bankruptcy laws or under any law or statute of the United States or of any State thereof; or

3. A petition under any part of the federal bankruptcy laws or an action under any present or future insolvency law or statute shall be filed against the Contractor and shall not be dismissed within thirty (30) days after the filing thereof; or
4. The interest of the Contractor under this Contract shall be transferred to, passed to or devolve upon, by operation of law or otherwise, any other person, firm or corporation, or
5. The Contractor, if a corporation, shall, without the prior written approval of the Port Authority, become a surviving or merged corporation in a merger, a constituent corporation in a consolidation, or a corporation in dissolution; or
6. If the Contractor is a partnership, and the said partnership shall be dissolved as the result of any act or omission of its copartners or any of them, or by operation of law or the order or decree of any court having jurisdiction, or for any other reason whatsoever; or
7. By or pursuant to, or under authority of any legislative act, resolution or rule, or any order or decree of any court or governmental board, agency or officer having jurisdiction, a receiver, trustee, or liquidator shall take possession or control of all or substantially all of the property of the Contractor and such possession or control of all or substantially all of the property of the Contractor and shall continue in effect for a period of fifteen (15) days;

then upon the occurrence of any such event or at any time thereafter during the continuance thereof, the Port Authority shall have the right upon five (5) days notice to the Contractor to terminate this Contract and the rights of the Contractor hereunder; termination to be effective upon the date and time specified in such notice as if said date were the date of the expiration of this Contract. Termination shall not relieve the Contractor of any liabilities or obligations hereunder which have accrued on or prior to the effective date of termination.

c. If any of the following shall occur:

1. The Contractor shall cease, abandon any part of the service, desert, stop or discontinue its services in the premises for any reason whatsoever and regardless of the fault of the Contractor; or

2. The Contractor shall fail to keep, perform and observe each and every other promise, covenant and agreement set forth in this Contract on its part to be kept, performed or observed, within five (5) days after receipt of notice of default thereunder from the Port Authority (except where fulfillment of its obligations requires activity over a greater period of time, and the Contractor shall have commenced to perform whatever may be required for fulfillment within five (5) days after receipt of notice and continues such performance without interruption except for causes beyond its control);

then upon the occurrence of any such event or during the continuance thereof, the Port Authority shall have the right on twenty four (24) hours notice to the Contractor to terminate this Contract and the rights of the Contractor hereunder, termination to be effective upon the date and time specified in such notice. Termination shall not relieve the Contractor of any liabilities which shall have accrued on or prior to the effective date of termination.

d. If any of the events enumerated in this Section shall occur prior to commencement date of this Contract the Port Authority upon the occurrence of any such event or any time thereafter during the continuance thereof by twenty-four (24) hours notice may terminate or suspend this Contract and the rights of the Contractor hereunder, such termination or suspension to be effective upon the date specified in such notice.

e. No payment by the Port Authority of any monies to the Contractor for any period or periods after default of any of the terms, covenants or conditions hereof to be performed, kept and observed by the Contractor and no act or thing done or omitted to be done by the Port Authority shall be deemed to be a waiver of the right of the Port Authority to terminate this Contract or of any other right or remedies to which the Port Authority may be entitled because of any breach thereof. No waiver by the Port Authority of any default on the part of the Contractor in the performance of any of the terms, covenants and conditions hereof to be performed, kept or observed by the Contractor shall be or be construed to be a waiver by the Port Authority of any other subsequent default in the performance of any of the said terms, covenants and conditions.

f. In addition to all other rights of revocation or termination hereunder and notwithstanding any other provision of this Contract the Port Authority may terminate this Contract and the rights of the Contractor hereunder without cause at any time upon five (5) days written notice to the Contractor and in such event this Contact shall cease and expire on the date set forth in the notice of termination as fully and completely as though such dates were the original expiration date hereof and if such effective date of termination is other than the last day of the month, the amount of the compensation due to the Contractor from the Port Authority shall be prorated when applicable on a daily basis. Such cancellation shall be without prejudice to the rights and obligations of the parties arising out of portions already performed but no allowance shall be made for anticipated profits.

g. Any right of termination contained in this paragraph, shall be in addition to and not in lieu of any and all rights and remedies that the Port Authority shall have at law or in equity consequent upon the Contractor's breach of this Contract and shall be without prejudice to any and all such other rights and remedies. It is hereby specifically agreed and understood that the exercise by the Port Authority of any right of termination set forth in this paragraph shall not be or be deemed to be an exercise by the Port Authority of an election of remedies so as to preclude the Port Authority from any right to money damages it may have for the period prior to the effective date of termination to the original expiration date of the Contract, and this provision shall be deemed to survive the termination of this Contract as aforesaid.

h. If (1) the Contractor fails to perform any of its obligations under this Contract or any other agreement between the Port Authority and the Contractor (including its obligation to the Port Authority to pay any claim lawfully made against it by any supplier, subcontractor or worker or other person which arises out of or in connection with the performance of this Contract or any other agreement with the Port Authority) or (2) any claim (just or unjust) which arises out of or in connection with this Contract or any other agreement between the Port Authority and the Contractor is made against the Port Authority or (3) any subcontractor under this Contract or any other agreement between the Port Authority and the Contractor fails to pay any claims lawfully made against it by any supplier, subcontractor, worker or other third person which arises out of or in connection with this Contract or any other agreement between the Port Authority and the Contractor or if in the opinion of the Port Authority any of the aforesaid contingencies is likely to arise, then the Port Authority shall have the right, in its discretion, to withhold out of any payment (final or otherwise) such sums as the Port Authority may deem ample to protect it against delay or loss or to assure the payment of just claims of third persons, and to apply such sums in such manner as the Port Authority may deem proper to secure such protection or satisfy such claims. All sums so applied shall be deducted from the Contractor's compensation. Omission by the Port Authority to withhold out of any payment, final or otherwise, a sum for any of the above contingencies, even though such contingency has occurred at the time of such payment, shall not be deemed to indicate that the Port Authority does not intend to exercise its right with respect to such contingency. Neither the above provisions for rights of the Port Authority to withhold and apply monies nor any exercise or attempted exercise of, or omission to exercise, such rights by the Port Authority shall create any obligation of any kind to such supplier, subcontractors, worker or other third persons. If, however, the payment of any amount due the Contractor shall be improperly delayed, the Port

Authority shall pay the Contractor interest thereon at the rate of 6% per annum for the period of the delay, it being agreed that such interest shall be in lieu of and in liquidation of any damages to the Contractor because of such delay.

i. If the Port Authority has paid any sum or has incurred any obligation or expense which the Contractor has agreed to pay or reimburse the Port Authority, or if the Port Authority is required or elects to pay any sum or sums or incurs any obligations or expense by reason of the failure, neglect or refusal of the Contractor to perform or fulfill any one or more of the conditions, covenants, or agreements contained in this Contract, or as a result of an act of omission of the Contractor contrary to the said conditions, covenants and agreements, the Contractor shall pay to the Port Authority the sum or sums so paid or expense so incurred, including all interests, costs and damages, promptly upon the receipt of the Port Authority's statement therefore. The Port Authority may, however, in its discretion, elect to deduct said sum or sums from any payment payable by it to the Contractor.

j. If the Port Authority pays any installment to the Contractor without reducing said installment as provided in this Contract, it may reduce any succeeding installment by the proper amount, or it may bill the Contractor for the amount by which the installment paid should have been reduced and the Contractor shall pay to the Port Authority any such amount promptly upon receipt of the Port Authority's statement therefore.

k. The Port Authority shall also have the rights set forth above in the event the Contractor shall become insolvent or bankrupt or if his affairs are placed in the hands of a receiver, trustee or assignee for the benefit of creditors.

15. Sales or Compensating Use Taxes

Sales to the Port Authority are currently exempt from New York and New Jersey State and local sales and compensating use taxes and generally from federal taxation. The Contractor certifies that there are no such taxes included in the prices for this Contract. The Contractor shall retain a copy of this Contract to substantiate the exempt sale.

The compensation set forth in this Agreement is the complete compensation to the Contractor, and the Port Authority will not separately reimburse the Contractor for any taxes unless specifically set forth in this Agreement.

16. No Estoppel or Waiver

The Port Authority shall not be precluded or estopped by any payment, final or otherwise, issued or made under this Contract, from showing at any time the true amount and character of the services performed, or from showing that any such payment is incorrect or was improperly issued or made; and the Port Authority shall not be precluded or estopped, notwithstanding any such payment, from recovering from the Contractor any damages which it may sustain by reason of any failure on its part to comply strictly with this Contract, and any moneys which may be paid to it or for its account in excess of those to which it is lawfully entitled.

No cancellation, rescission or annulment hereof, in whole or as to any part of the services to be provided hereunder, or because of any breach hereof, shall be deemed a waiver of any money damages to which the Port Authority may be entitled because of such breach. Moreover, no waiver by the Authority of any breach of this Contract shall be deemed to be a waiver of any other or any subsequent breach.

17. Records and Reports

The Contractor shall set up, keep and maintain (and shall cause its subcontractors to set up, keep and maintain) in accordance with generally accepted accounting practice during the term of this Agreement and any extensions thereof and for three years after the expiration, termination or revocation thereof, records, payroll records and books of account (including, but not limited to, records of original entry and daily

forms, payroll runs, cancelled checks, time records, union agreements, contracts with health, pension and other third party benefit providers) recording all transactions of the Contractor(and its subcontractors), at, through or in any way connected with or related to the operations of the Contractor (and its subcontractors) hereunder, including but not limited to all matters relating to the charges payable to the Contractor hereunder, all wages and supplemental benefits paid or provided to or for its employees (and its subcontractors' employees) and such additional information as the Port Authority may from time to time and at any time require, and also including, if appropriate, recording the actual number of hours of service provided under the Contract, and keeping separate records thereof which records and books of account shall be kept at all times within the Port District. The Contractor shall permit (and cause its subcontractors to permit) in ordinary business hours during the term of this Agreement including any extensions thereof and for three years thereafter the examination and audit by the officers, employees and representatives of the Port Authority of such records and books of account and also any records and books of account of any company which is owned or controlled by the Contractor, or which owns or controls the Contractor if said company performs services similar to those performed by the Contractor anywhere in the Port District. However, if within the aforesaid three year period the Port Authority has notified the Contractor in writing of a pending claim by the Port Authority under or in connection with this Contract to which any of the aforesaid records and documents of the Contractor or of its subcontractors relate either directly or indirectly, then the period of such right of access shall be extended to the expiration of six years from the date of final payment with respect to the records and documents involved.

The Contractor (and its subcontractors) shall, at its own expense, install, maintain and use such equipment and devices for recording the labor hours of the service as shall be appropriate to its business and necessary or desirable to keep accurate records of the same and as the general manager or the Facility Manager may from time to time require, and the Contractor (and its subcontractors) shall at all reasonable times allow inspection by the agents and employees of the Port Authority of all such equipment or devices.

a. The Contractor hereby further agrees to furnish to the Port Authority from time to time such written reports in connection with its operations hereunder as the Port Authority may deem necessary or desirable. The format of all forms, schedules and reports furnished by the Contractor to the Port Authority shall be subject to the continuing approval of the Port Authority.
b. No provision in this Contract giving the Port Authority a right of access to records and documents is intended to impair or affect any right of access to records and documents which they would have in the absence of such provision. Additional record keeping may be required under other sections of this Contract.

18. General Obligations

a. Except where expressly required or permitted herein to be oral, all notices, requests, consents and approvals required to be given to or by either party shall be in writing and all such notices, requests, consents and approvals shall be personally delivered to the other party during regular business hours or forwarded to such party by United States certified mail, return receipt requested, addressed to the other party at its address hereinbefore or hereafter provided. Until further notice the Contractor hereby designates the address shown on the bottom of the Contractors Signature Sheet as their address to which such notices, requests, consents, or approvals may be forwarded. All notices, requests, consents, or approvals of the Contractor shall be forwarded to the Manager at the Facility.
b. The Contractor shall comply with the provisions of all present and future federal, state and municipal laws, rules, regulations, requirements, ordinances, orders and directions which pertain to its operations under this Contract and which affect the Contract or the performance thereof and those engaged therein as if the said Contract were being performed for a private corporation, except where stricter requirements are contained in the Contract in which case the Contract shall control. The Contractor shall procure for itself all licenses, certificates, permits or other authorization from all governmental authorities, if any, having jurisdiction over the Contractor's operations hereunder which may be

necessary for the Contractor's operations. The Contractor's obligation to comply with governmental requirements are not to be construed as a submission by the Port Authority to the application to itself of such requirements.

c. The Contractor shall pay all taxes, license, certification, permit and examination fees and excises which may be assessed on its property or operations hereunder or income therefrom, and shall make all applications, reports and returns required in connection therewith.

d. The Contractor shall, in conducting its operations hereunder, take all necessary precautions to protect the general environment and to prevent environmental pollution, contamination, damage to property and personal injury. In the event the Contractor encounters material reasonably believed to be asbestos, polychlorinated biphenyl (PCB) or any other hazardous material, in conducting its operations hereunder, the Contractor shall immediately stop Work in the area affected and report the condition in writing to the Manager. Work in the affected area shall not thereafter be resumed by the Contractor except upon the issuance of a written order to that effect from the Manager.

e. The Contractor shall promptly observe, comply with and execute the provisions of any and all present and future rules and regulations, requirements, standard orders and directions of the American Insurance Association, the Insurance Services Office, National Fire Protection Association, and any other body or organization exercising similar functions which may pertain or apply to the Contractor's operations hereunder.

The Contractor shall not do or permit to be done any act which:

1. will invalidate or be in conflict with any fire insurance policies covering the Facility or any part thereof or upon the contents of any building thereon; or
2. will increase the rate of any fire insurance, extended coverage or rental insurance on the Facility or any part thereof or upon the contents of any building thereon; or
3. in the opinion of the Port Authority will constitute a hazardous condition, so as to increase the risk normally attendant upon the operations contemplated by this Contract; or
4. may cause or produce in the premises, or upon the Facility any unusual, noxious or objectionable smoke, gases, vapors, odors; or
5. may interfere with the effectiveness or accessibility of the drainage and sewerage system, fire protection system, sprinkler system, alarm system, fire hydrants and hoses, if any, installed or located or to be installed or located in or on the Facility; or
6. shall constitute a nuisance in or on the Facility or which may result in the creation, commission or maintenance of a nuisance in or on the Facility.

f. If by reason of the Contractor's failure to comply with the provisions of this Section and provided the Port Authority has given the Contractor five (5) days written notice of its failure and the Contractor shall not have cured said failure within said five (5) days, any fire insurance, extended coverage or rental insurance rate on the Facility or any part thereof or upon the contents of any building thereon shall at any time be higher than it otherwise would be, then the Contractor shall on demand pay the Port Authority that part of all fire insurance, extended coverage or rental insurance premiums paid or payable by the Port Authority which shall have been charged because of such violations by the Contractor.\

g. The Contractor shall conduct its operations hereunder so as not to endanger, unreasonably interfere with, or delay the operations or activities of any tenants or occupants on the premises or the Facility and, moreover, shall use the same degree of care in performance on the premises as would be required by law of the Port Authority and shall conduct operations hereunder in a courteous, efficient and safe manner.

h. The Contractor shall provide such equipment and medical facilities as may be necessary to supply first aid service in case of accidents to its personnel who may be injured in the furnishing of service hereunder. The Contractor shall maintain standing arrangements for the removal and hospital treatment of any of its personnel who may be injured.

19. Assignments and Subcontracting

a. The Contractor shall not sell, transfer, mortgage, pledge, subcontract or assign this Contract or any part thereof or any of the rights granted hereunder or any moneys due or to become due to it hereunder or enter into any contract requiring or permitting the doing of anything hereunder by an independent Contractor, without the prior written approval of the Port Authority, and any such sale, transfer, mortgage, pledge, subcontract, assignment or contract without such prior written approval shall be void as to the Port Authority.

b. All subcontractors who provide permanent personnel to the Contractor for work under this Contract shall be given written notice to comply with all requirements of the Contract. The Contractor shall be responsible and liable for the performance and acts of each subcontractor.

c. All persons to whom the Contractor sublets services shall be deemed to be its agents and no subletting or approval thereof shall be deemed to release this Contractor from its obligations under this Contract or to impose any obligations on the Port Authority to such subcontractor or to give the subcontractor any rights against the Port Authority.

20. Indemnification and Risks Assumed By The Contractor

To the extent permitted by law, the Contractor shall indemnify and hold harmless the Port Authority, its Commissioners, officers, representatives and employees from and against all claims and demands, just or unjust, of third persons (including employees, officers, and agents of the Port Authority) arising out of or in any way connected or alleged to arise out of or alleged to be in any way connected with the Contract and all other services and activities of the Contractor under this Contract and for all expenses incurred by it and by them in the defense, settlement or satisfaction thereof, including without limitation thereto, claims and demands for death, for personal injury or for property damage, direct or consequential, whether they arise from the acts or omissions of the Contractor, of the Port Authority, of third persons, or from the acts of God or the public enemy, or otherwise, including claims and demands of any local jurisdiction against the Port Authority in connection with this Contract.

The Contractor assumes the following risks, whether such risks arise from acts or omissions (negligent or not) of the Contractor, the Port Authority or third persons or from any other cause, excepting only risks occasioned solely by affirmative willful acts of the Port Authority done subsequent to the opening of proposals on this Contract, and shall to the extent permitted by law indemnify the Port Authority for all loss or damage incurred in connection with such risks:

a. The risk of any and all loss or damage to Port Authority property, equipment (including but not limited to automotive and/or mobile equipment), materials and possessions, on or off the premises, the loss or damage of which shall arise out of the Contractor's operations hereunder. The Contractor shall if so directed by the Port Authority, repair, replace or rebuild to the satisfaction of the Port Authority, any and all parts of the premises or the Facility which may be damaged or destroyed by the acts or omissions of the Contractor, its officers, agents, or employees and if the Contractor shall fail so to repair, replace, or rebuild with due diligence the Port Authority may, at its option, perform any of the foregoing work and the Contractor shall pay to the Port Authority the cost thereof.

b. The risk of any and all loss or damage of the Contractor's property, equipment (including but not limited to automotive and/or mobile equipment) materials and possessions on the Facility.

c. The risk of claim, whether made against the Contractor or the Port Authority, for any and all loss or damages occurring to any property, equipment (including but not limited to automotive and/or mobile equipment), materials and possessions of the Contractor's agents, employees, materialmen and others performing work hereunder.

d. The risk of claims for injuries, damage or loss of any kind just or unjust of third persons arising or alleged to arise out of the performance of work hereunder, whether such claims are made against the Contractor or the Port Authority.

If so directed, the Contractor shall at its own expense defend any suit based upon any such claim or demand, even if such suit, claim or demand is groundless, false or fraudulent, and in handling such shall not, without obtaining express advance permission from the General Counsel of the Port Authority, raise any defense involving in any way the jurisdiction of the tribunal over the person of the Port Authority, the immunity of the Port Authority, its Commissioners, officers, agents or employees, the governmental nature of the Port Authority or the provision of any statutes respecting suits against the Port Authority.

Neither the requirements of the Port Authority under this Contract, nor of the Port Authority of the methods of performance hereunder nor the failure of the Port Authority to call attention to improper or inadequate methods or to require a change in the method of performance hereunder nor the failure of the Port Authority to direct the Contractor to take any particular precaution or other action or to refrain from doing any particular thing shall relieve the Contractor of its liability for injuries to persons or damage to property or environmental impairment arising out of its operations.

21. Approval of Methods

Neither the approval of the Port Authority of the methods of furnishing services hereunder nor the failure of the Port Authority to call attention to improper or inadequate methods or to require a change in the method of furnishing services hereunder, nor the failure of the Port Authority to direct the Contractor to take any particular precautions or to refrain from doing any particular thing shall relieve the Contractor of its liability for injuries to persons or damage to property or environmental impairment arising out of its operations.

22. Safety and Cleanliness

a. The Contractor shall, in the furnishing of services hereunder, exercise every precaution to prevent injury to person or damage to property or environmental impairment and avoid inconvenience to the occupants of or any visitors to the Facility. The Contractor shall, without limiting the generality hereof, place such personnel, erect such barricades and railings, give such warnings, display such lights, signals or signs, place such cones and exercise precautions as may be necessary, proper or desirable.

b. The Contractor shall in case of unsafe floor conditions due to construction, wetness, spillage, sickness and all other types of hazardous conditions proceed to rope off the unsafe area and place appropriate warnings signs to prevent accidents from occurring. The Contractor shall clean said area to the satisfaction of the Manager.

c. The Contractor shall at all times maintain in a clean and orderly condition and appearance any and all facilities provided by the Port Authority for the Contractor's operations, and all fixtures, sink closets, equipment, and other personal property of the Port Authority which are located in said facilities.

23. Accident Reports

The Contractor shall promptly report in writing to the Manager of the Facility and to the Deputy Chief, Litigation Management of the Port Authority all accidents whatsoever arising out of or in connection with its operations hereunder and which result in death or injury to persons or damage to property, setting forth such details thereof as the Port Authority may desire. In addition, if death or serious injury or serious damage is caused, such accidents shall be immediately reported by telephone to the aforesaid representatives of the Port Authority.

24. Trash Removal

The Contractor shall remove daily from the Facility by means provided by the Contractor all garbage, debris and other waste material (solid or liquid) arising out of or in connection with its operations hereunder, and any such garbage, debris and other waste material not immediately removed shall be temporarily stored in a clear and sanitary condition, approved by the Facility Manager and shall be kept covered except when filling

or emptying them. The Contractor shall exercise care in removing such garbage, debris and other waste materials from the Facility. The manner of such storage and removal shall always be subject in all respects to the continual approval of the Port Authority. No equipment or facilities of the Port Authority shall be used in such removal unless with its prior consent in writing. No such garbage, debris or other waste materials shall be or be permitted to be thrown, discharged or disposed into or upon the waters at or bounding the Facility.

25. Lost and Found Property

The Contractor shall instruct its personnel that all items of personal property found by the Contractor's employees at the Site must be turned in to the Port Authority and a receipt will be issued therefor.

26. Property of the Contractor

a. All property of the Contractor at the Site by virtue of this Contract shall be removed on or before the expiration or sooner termination or revocation of this Contract.

b. If the Contractor shall fail to remove its property upon the expiration, termination or revocation of this Contract the Port Authority may, at its option, dispose of such property as waste or as agent for the Contractor and at the risk and expense of the Contractor, remove such property to a public warehouse, or may retain the same in its own possession, and in either event after the expiration of thirty (30) days may sell the same in accordance with any method deemed appropriate; the proceeds of any such sale shall be applied first, to the expenses of sale and second, to any sums owed by the Contractor to the Port Authority; any balance remaining shall be paid to the Contractor. Any excess of the total cost of removal, storage and sale and other costs incurred by the Port Authority as a result of such failure of performance by the Contractor over the proceeds of sale shall be paid by the Contractor to the Port Authority upon demand.

27. Modification of Contract

This Contract may not be changed except in writing signed by the Port Authority and the Contractor. The Contractor agrees that no representation or warranties shall be binding upon the Port Authority unless expressed in writing in this Contract.

28. Invalid Clauses

If any provision of this Contract shall be such as to destroy its mutuality or to render it invalid or illegal, then, if it shall not appear to have been so material that without it the Contract would not have been made by the parties, it shall not be deemed to form part thereof but the balance of the Contract shall remain in full force and effect.

29. Approval of Materials, Supplies and Equipment

Only Port Authority approved materials, supplies, and equipment are to be used by the Contractor in performing the Work hereunder. Inclusion of chemical containing materials or supplies on the Port Authority Approved Products List – Environmental Protection Supplies constitutes approval. The list may be revised from time to time and at any time by the Port Authority and it shall be incumbent upon the Contractor to obtain the most current list from the Manager of the Facility.

At anytime during the Solicitation, pre-performance or performance periods, the Contractor may propose the use of an alternate product or products to those on the Approved Products List – Environmental Protection Supplies, which product(s) shall be subject to review and approval by the Port Authority. Any alternate product so approved by the Port Authority may be used by the Contractor in performing the Services hereunder. Until such approval is given, only products on the Approved Products List – Environmental Protection Supplies may be used.

30. Intellectual Property

The right to use all patented materials, appliances, processes of manufacture or types of construction, trade and service marks, copyrights and trade secrets, collectively hereinafter referred to as "Intellectual Property Rights", in the performance of the work, shall be obtained by the Contractor without separate or additional compensation. Where the services under this Agreement require the Contractor to provide materials, equipment or software for the use of the Port Authority or its employees or agents, the Port Authority shall be provided with the Intellectual Property Rights required for such use without further compensation than is provided for under this Agreement.

The Contractor shall indemnify the Port Authority against and save it harmless from all loss and expense incurred as a result of any claims in the nature of Intellectual Property Rights infringement arising out of the Contractor's or Port Authority's use, in accordance with the above immediately preceding paragraph, of any Intellectual Property. The Contractor, if requested, shall conduct all negotiations with respect to and defend such claims. If the Contractor or the Port Authority, its employees or agents be enjoined either temporarily or permanently from the use of any subject matter as to which the Contractor is to indemnify the Port Authority against infringement, then the Port Authority may, without limiting any other rights it may have, require the Contractor to supply temporary or permanent replacement facilities approved by the Manager, and if the Contractor fails to do so the Contractor shall, at its expense, remove all such enjoined facilities and refund the cost thereof to the Port Authority or take such steps as may be necessary to insure compliance by the Contractor and the Port Authority with said injunction, to the satisfaction of the Port Authority.

In addition, the Contractor shall promptly and fully inform the Director in writing of any intellectual property rights disputes, whether existing or potential, of which it has knowledge, relating to any idea, design, method, material, equipment or any other matter related to the subject matter of this Agreement or coming to its attention in connection with this Agreement.

31. Contract Records and Documents – Passwords and Codes

When the performance of the contract services requires the Contractor to produce, compile or maintain records, data, drawings, or documents of any kind, regardless of the media utilized, then all such records, drawings, data and documents which are produced, prepared or compiled in connection with this contract, shall become the property of the Port Authority, and the Port Authority shall have the right to use or permit the use of them and any ideas or methods represented by them for any purpose and at any time without other compensation than that specifically provided herein.

When in the performance of the contract services the Contractor utilizes passwords or codes for any purpose, at any time during or after the performance of such services, upon written request by the Authority, the Contractor shall make available to the designated Authority representative all such passwords and codes.

32. High Security Areas

a. Services under the Contract may be required in high security areas, as the same may be designated by the Manager from time to time. The Port Authority shall require the observance of certain security

procedures with respect to the high security areas, which may include the escort to, at, and/or from said high security areas by security personnel designated by the Contractor or any subcontractor's personnel required to work therein.

b. Twenty-four hours prior to the proposed performance of any work in a high security area, the Contractor shall notify the Manager. The Contractor shall conform to the procedures as may be established by the Manager from time to time and at any time for access to high security areas and the escorting of personnel hereunder. Prior to the start of work, the Contractor shall request a description from the Manager of the high security areas which will be in effect on the commencement date. The description of high security areas may be changed from time to time and at any time by the Manager during the term of the Contract.

33. Notification of Security Requirements

The Port Authority operates facilities and systems, at which terrorism or other criminal acts may have a significant impact on life safety and key infrastructures. The Authority reserves the right to impose multiple layers of security requirements on the performance of the Contract work, including on the Contractor, its staff and subcontractors and their staffs depending upon the level of security required, as determined by the Authority. The Contractor shall and shall instruct its subcontractors to cooperate with Authority staff in adopting security requirements. These security requirements may include but may not be limited to the following:

i. Identity Checks and Background Screening

Contractor/subcontractor identity checks and background screening shall include but shall not be limited to: (1) inspection of not less than two forms of valid/current government issued identification (at least one having an official photograph) to verify staff's name and residence; (2) screening of federal, state, and/or local criminal justice agency information databases and files; (3) screening of any terrorist identification files; (4) multi-year check of personal, employment and /or credit history; (5) access identification to include some form of biometric security methodology such as fingerprint, facial or iris scanning.

The Contractor may be required to have its staff, and any subcontractor's staff, authorize the Authority or its designee to perform background checks. Such authorization shall be in a form acceptable to the Authority. If the Authority directs the Contractor to have identity checks and background screening performed by a particular firm designated by the Authority, the Authority will compensate the Contractor for the cost of such screening pursuant to the Extra Work provisions of the Contract.

ii. Issuance of Photo Identification cards:

If the Authority requires facility-specific identification cards for the Contractor's and subcontractors' staff, the Authority will supply such identification cards at no cost to the Contractor.

iii. Access control, inspection, and monitoring by security guards:

The Authority will provide for facility access control, inspection and monitoring by Authority retained security guards. Should the Authority require the Contractor to hire security guards for the purpose of facility access control and inspection in lieu of or in addition to the Authority retained facility security guards, the Contractor will be reimbursed for the cost of such security guards pursuant to the Extra Work provisions of the Contract. However, this provision shall not relieve the Contractor of its responsibility to secure its equipment and work at the facility at its own expense.

The Authority may impose, increase, and/or upgrade security requirements for the Contractor, subcontractors and their staffs during the term of this Contract to address changing security conditions

and/or new governmental regulations.

34. Construction In Progress

The Contractor recognizes that construction may be in progress at the Facility and may continue throughout the term of this Contract. Notwithstanding, the Contractor shall at all times during the term hereof maintain the same standards of performance and cleanliness as prevails in non-affected areas as required by the standards hereunder.

35. Permit-Required Confined Space Work

Prior to commencement of any work, the Contractor shall request and obtain from the Port Authority a description of all spaces at the facility which are permit-required confined spaces requiring issuance of an OSHA permit.

Prior to the commencement of any work in a permit-required confined space at a Port Authority facility requiring issuance of an OSHA permit, the Contractor shall contact the Manager to obtain an Authority Contractor Permit-Required Confined Space Notification form. The notification form must be filled out and submitted prior to commencing permit-required confined space work. All confined space work shall be performed in accordance with all applicable OSHA requirements. The Contractor shall provide its employees with a copy of its own company permit and shall furnish the Port Authority with a copy of the permit upon completion of the work. The Contractor must supply all equipment required for working in a confined space.

36. Signs

Except with the prior written approval of the Port Authority, the Contractor shall not erect, maintain or display any signs or posters or any advertising on or about the Facility.

37. Vending Machines, Food Preparation

The Contractor shall not install, maintain or operate on the Facility, or on any other Port Authority property, any vending machines without the prior written approval of the Port Authority. No foods or beverages shall be prepared or consumed at the Facility by any of the Contractor's employees except in areas as may be specifically designated by the Port Authority for such purpose.

38. Non-Publication

The Contractor shall not issue nor permit to be issued any press release, advertisement, or literature of any kind, which refers to the Port Authority or to the fact that goods have been, are being or will be provided to it and/or that services have been, are being or will be performed for it in connection with this Agreement, unless the vendor first obtains the written approval of the Port Authority. Such approval may be withheld if for any reason the Port Authority believes that the publication of such information would be harmful to the public interest of is in any way undesirable.

39. Time is of the Essence

Time is of the essence in the Contractor's performance of this Contract inasmuch as the Work to be performed will affect the operation of public facilities.

40. Holidays

The following holidays will be observed at the Site:

New Year's Day	Labor Day
Martin Luther King Jr. Day	Columbus Day

Presidents Day	Veterans Day
Memorial Day	Thanksgiving Day
Independence Day	Day After Thanksgiving
Christmas Day	

This list is subject to periodic revision and the Contractor shall be responsible for obtaining all updated lists from the office of the Manager. If any such holiday falls on a Sunday then the next day shall be considered the holiday and/or if any such holiday falls on a Saturday then the preceding day shall be considered the holiday.

41. Personnel Standards

In addition to any specific personnel requirements that may be required under the clause entitled "Personnel Requirements" in the Specifications, the Contractor (and any Subcontractor) shall furnish competent and adequately trained personnel to perform the Work hereunder. If, in the opinion of the Manager, any employee so assigned is performing their functions unsatisfactorily, they shall be replaced by the Contractor within twenty-four (24) hours following the Contractor's receipt of the Manager's request for such replacement.

All Contractor's employees performing Work hereunder shall have the ability to communicate in the English language to the extent necessary to comprehend directions given by either the Contractor's supervisory staff or by the Manager's staff. Any employee operating a motor vehicle must have a valid driver's license.

42. General Uniform Requirements for Contractor's Personnel

In addition to any specific uniform requirements that may be required by the Specifications, uniforms must be worn at all times during which the Services are being performed hereunder. The Contractor agrees that his/her employees will present a neat, clean and orderly appearance at all times. Uniforms shall include the Contractor's identification badge with picture ID bearing the employee's name. All uniforms, colors, types and styles shall be subject to the prior approval of the Manager. The Contractor will also be responsible for ensuring that its employees are wearing shoes appropriate for the tasks performed. The Manager shall have the right to require removal of any employee who shall fail to wear the proper uniform and shoes, and the exercise of this right shall not limit the obligation of the Contractor to perform the Services or to furnish any required number of employees at a specific location at the Site as specified.

43. Labor, Equipment and Materials Supplied by the Contractor

The Contractor shall, at all times during the performance of this Contract, furnish all necessary labor, supervision, equipment and materials necessary for the prompt and efficient performance of the Work, whether such materials and equipment are actually employed in the furnishing of the Work or whether incidental thereto.

All materials used by the Contractor in furnishing Work hereunder shall be of such quality as to accomplish the purposes of this Contract and the Services to be furnished hereunder in such manner so as not to damage any part of the Site.

The Port Authority by its officers, employees and representatives shall have the right at all times to examine the supplies, materials and equipment used by the Contractor, to observe the operations of the Contractor, its agents, servants and employees and to do any act or thing which the Port Authority may be obligated or have the right to do under this Contract or otherwise.

All equipment, materials and supplies used in the performance of this Contract required hereunder shall be used in accordance with their manufacturer's instructions.

Materials and supplies to be provided by the Contractor hereunder shall comply with OSHA and all

applicable regulations.

44. Contractor's Vehicles – Parking - Licenses

At the discretion of the Manager, the Port Authority may permit the Contractor during the effective period of this Contract to park vehicle(s) used by it in its operations hereunder in such location as may from time to time or at any time be designated by the Manager. The Contractor shall comply with such existing rules, regulations and procedures as are now in force and such reasonable future rules, regulations and procedures as may hereafter be adopted by the Port Authority for the safety and convenience of persons who park automotive vehicles in any parking area at the Site or for the safety and proper persons who park automotive vehicles in any parking area at the Site or for the safety and proper identification of such vehicles, and the Contractor shall also comply with any and all directions pertaining to such parking which may be given from time to time and at any time by the Manager. Any vehicle used by the Contractor hereunder shall be marked or placarded, identifying it as the Contractor's vehicle.

45. Manager's Authority

In the performance of the Work hereunder, the Contractor shall conform to all orders, directions and requirements of the Manager and shall perform the Work hereunder to the satisfaction of the Manager at such times and places, by such methods and in such manner and sequence as he/she may require, and the Contract shall at all stages be subject to his/her inspection. The Manager shall determine the amount, quality, acceptability and fitness of all parts of the Work and shall interpret the Specifications and any orders for Extra Work. The Contractor shall employ no equipment, materials, methods or staff or personnel to which the Manager objects. Upon request, the Manager shall confirm in writing any oral order, direction, requirement or determination.

The Manager shall have the authority to decide all questions in connection with the Services to be performed hereunder. The exercise by the Manager of the powers and authorities vested in him/her by this section shall be binding and final upon the Port Authority and the Contractor.

46. Price Preference

If this solicitation has not been set aside for the purposes of making an award based on bids solicited from Port Authority certified Minority Business, Women Business or Small Business Enterprises as indicated by the bidder pre-requisites in Part II hereof, for awards of contracts, not exceeding $1,000,000, for:

(a) Services, a price preference of 5% is available for New York or New Jersey Small Business Enterprises (SBE); or

(b) Services (excluding Janitorial/Cleaning Services), a price preference of 10% is available for New York or New Jersey Minority or Women Business Enterprises (M/WBE),

certified by the Port Authority by the day before the bid opening.

If the Bidder is a Port Authority certified MBE, WBE or SBE, enter the applicable date(s) certification was obtained in the space provided on the Signature Sheet attached hereto.

47. M/WBE Good Faith Participation

If specified as applicable to this Contract, the Contractor shall use every good-faith effort to provide for participation by certified Minority Business Enterprises (MBEs) and certified Women-owned Business Enterprises (WBEs) as herein defined, in all purchasing and subcontracting opportunities associated with this Contract, including purchase of equipment, supplies and labor services.

Good Faith efforts to include participation by MBEs/WBEs shall include the following:

a. Dividing the services and materials to be procured into small portions, where feasible.

b. Giving reasonable advance notice of specific contracting, subcontracting and purchasing opportunities to such MBEs/WBEs as may be appropriate.

c. Soliciting services and materials, to be procured, from the Directory of MBEs/WBEs, a copy of which can be obtained by contacting the Port Authority's Office of Business and Job Opportunity at (212) 435-7819 or seeking MBEs/WBEs from other sources.

d. Insuring that provision is made to provide progress payments to MBEs/WBEs on a timely basis.

e. Observance of reasonable commercial standards of fair dealing in the respective trade or business.

Either prior or subsequent to Contract award, the Contractor may request a full or partial waiver of the M/WBE participation goals set forth in this Contract by providing documentation demonstrating to the Manager, for approval by the Port Authority's Office of Business and Job Opportunity, that its good faith efforts did not result in compliance with the goals set forth above because participation by eligible M/WBEs could not be obtained at a reasonable price or that such M/WBEs were not available to adequately perform as subcontractors. The Contractor shall provide written documentation in support of its request to the Manager. The documentation shall include, but not be limited to, documentation demonstrating good faith efforts as described above, which may include, proof that the Authority's directory does not contain M/WBEs in this specific field of work, a list of organizations contacted to obtain M/WBEs, and/or a list of M/WBEs contacted and their price quotes. If approved by the Authority's Office of Business and Job Opportunity, the Manager will provide written approval of the modified or waived M/WBE Participation Plan.

Subsequent to Contract award, all changes to the M/WBE Participation Plan must be submitted via a modified M/WBE Participation Plan to the Manager for review and approval by the Authority's Office of Business and Job Opportunity. For submittal of modifications to the M/WBE Plan, Contractors are directed to use form PA3749C, which may be downloaded at http://www.panynj.gov/DoingBusinessWith/contractors/html/other_info.html. The Contractor shall not make changes to its approved M/WBE Participation Plan or substitute M/WBE subcontractors or suppliers for those named in their approved plan without the Manager's prior written approval. Unauthorized changes or substitutions, including performing the work designated for a subcontractor with the Contractor's own forces, shall be a violation of this section. Progress toward attainment of M/WBE participation goals set forth herein will be monitored throughout the duration of this Contract.

The Contractor shall also submit to the Manager, along with invoices, the Statement of Subcontractor Payments as the M/WBE Participation Report, annexed hereto as an attachment. The Statement must include the name and business address of each M/WBE subcontractor and supplier actually involved in the Contract, a description of the work performed and/or product or service supplied by each such subcontractor or supplier, the date and amount of each expenditure, and such other information that may assist the Manager in determining the Contractor's compliance with the foregoing provisions.

If, during the performance of this Contract, the Contractor fails to demonstrate good faith efforts in carrying out its M/WBE Participation Plan and the Contractor has not requested and been granted a full or partial waiver of the M/WBE participation goals set forth in this Contract, the Authority will take into consideration the Contractor's failure to carry out its M/WBE Participation Plan in its evaluation for award of future Authority contracts.

PART III CONTRACTOR'S INTEGRITY PROVISIONS

1. Certification of No Investigation (criminal or civil anti-trust), Indictment, Conviction, Debarment, Suspension, Disqualification and Disclosure of Other Information

By bidding on this Contract, each Bidder and each person signing on behalf of any Bidder certifies, and in the case of a joint bid each party thereto certifies as to its own organization, that the Bidder and each parent and/or affiliate of the Bidder has not

a. been indicted or convicted in any jurisdiction;
b. been suspended, debarred, found not responsible or otherwise disqualified from entering into any contract with any governmental agency or been denied a government contract for failure to meet standards related to the integrity of the Bidder;
c. had a contract terminated by any governmental agency for breach of contract or for any cause based in whole or in part on an indictment or conviction;
d. ever used a name, trade name or abbreviated name, or an Employer Identification Number different from those inserted in the Bid;
e. had any business or professional license suspended or revoked or, within the five years prior to bid opening, had any sanction imposed in excess of $50,000 as a result of any judicial or administrative proceeding with respect to any license held or with respect to any violation of a federal, state or local environmental law, rule or regulation;
f. had any sanction imposed as a result of a judicial or administrative proceeding related to fraud, extortion, bribery, bid rigging, embezzlement, misrepresentation or anti-trust regardless of the dollar amount of the sanctions or the date of their imposition; and
g. been, and is not currently, the subject of a criminal investigation by any federal, state or local prosecuting or investigative agency and/or a civil anti-trust investigation by any federal, state or local prosecuting or investigative agency.

2. Non-Collusive Bidding, and Code of Ethics Certification, Certification of No Solicitation Based On Commission, Percentage, Brokerage, Contingent or Other Fees

By bidding on this Contract, each Bidder and each person signing on behalf of any Bidder certifies, and in the case of a joint bid, each party thereto certifies as to its own organization, that

a. the prices in its bid have been arrived at independently without collusion, consultation, communication or agreement for the purpose of restricting competition, as to any matter relating to such prices with any other bidder or with any competitor;
b. the prices quoted in its bid have not been and will not be knowingly disclosed directly or indirectly by the Bidder prior to the official opening of such bid to any other bidder or to any competitor;
c. no attempt has been made and none will be made by the Bidder to induce any other person, partnership or corporation to submit or not to submit a bid for the purpose of restricting competition;
d. this organization has not made any offers or agreements or taken any other action with respect to any Authority employee or former employee or immediate family member of either which would constitute a breach of ethical standards under the Code of Ethics dated April 11, 1996 (a copy of which is available upon request to the individual named in the clause hereof entitled "Bidder's Questions"), nor does this organization have any knowledge of any act on the part of an Authority employee or former Authority employee relating either directly or indirectly to this organization which constitutes a breach of the ethical standards set forth in said Code;
e. no person or selling agency other than a bona fide employee or bona fide established commercial or selling agency maintained by the Bidder for the purpose of securing business, has been employed or retained by the Bidder to solicit or secure this Contract on the understanding that a commission, percentage, brokerage, contingent, or other fee would be paid to such person or selling agency; and

f. the bidder has not offered, promised or given, demanded or accepted, any undue advantage, directly or indirectly, to or from a public official or employee, political candidate, party or party official, or any private sector employee (including a person who directs or works for a private sector enterprise in any capacity), in order to obtain, retain, or direct business or to secure any other improper advantage in connection with this Contract.

g. no person or organization has been retained, employed or designated on behalf of the Bidder to impact any Port Authority determination with respect to (i) the solicitation, evaluation or award of this Contract; or (ii) the preparation of specifications or request for submissions in connection with this Contract.

The foregoing certifications shall be deemed to be made by the Bidder as follows:

* if the Bidder is a corporation, such certification shall be deemed to have been made not only with respect to the Bidder itself, but also with respect to each parent, affiliate, director, and officer of the Bidder, as well as, to the best of the certifier's knowledge and belief, each stockholder of the Bidder with an ownership interest in excess of 10%;
* if the Bidder is a partnership, such certification shall be deemed to have been made not only with respect to the Bidder itself, but also with respect to each partner.

Moreover, the foregoing certifications, if made by a corporate Bidder, shall be deemed to have been authorized by the Board of Directors of the Bidder, and such authorization shall be deemed to include the signing and submission of the bid and the inclusion therein of such certification as the act and deed of the corporation.

In any case where the Bidder cannot make the foregoing certifications, the Bidder shall so state and shall furnish with the signed bid a signed statement that sets forth in detail the reasons therefor. If the Bidder is uncertain as to whether it can make the foregoing certifications, it shall so indicate in a signed statement furnished with its bid, setting forth in such statement the reasons for its uncertainty. With respect to the foregoing certification in paragraph "2g", if the Bidder cannot make the certification, it shall provide, in writing, with the signed bid: (i) a list of the name(s), address(es), telephone number(s), and place(s) of principal employment of each such individual or organization; and (ii) a statement as to whether such individual or organization has a "financial interest" in this Contract, as described in the Procurement Disclosure policy of the Authority (a copy of which is available upon request to the Director of the Procurement Department of the Authority). Such disclosure is to be updated, as necessary, up to the time of award of this Contract. As a result of such disclosure, The Port Authority shall take appropriate action up to and including a finding of non-responsibility.

Failure to make the required disclosures shall lead to administrative actions up to and including a finding of non-responsibility.

Notwithstanding that the Bidder may be able to make the foregoing certifications at the time the bid is submitted, the Bidder shall immediately notify the Authority in writing during the period of irrevocability of bids on this Contract of any change of circumstances which might under this clause make it unable to make the foregoing certifications or require disclosure. The foregoing certifications or signed statement shall be deemed to have been made by the Bidder with full knowledge that they would become a part of the records of the Authority and that the Authority will rely on their truth and accuracy in awarding this Contract. In the event that the Authority should determine at any time prior or subsequent to the award of this Contract that the Bidder has falsely certified as to any material item in the foregoing certifications or has willfully or fraudulently furnished a signed statement which is false in any material respect, or has not fully and accurately represented any circumstance with respect to any item in the foregoing certifications required to be disclosed, the Authority may determine that the Bidder is not a responsible Bidder with respect to its bid on the Contract or with respect to future bids on Authority contracts and may exercise such other remedies as are provided to it by the Contract with respect to these matters. In addition, Bidders are advised that knowingly providing a

false certification or statement pursuant hereto may be the basis for prosecution for offering a false instrument for filing (see e.g. New York Penal Law, Section 175.30 et seq.). Bidders are also advised that the inability to make such certification will not in and of itself disqualify a Bidder, and that in each instance the Authority will evaluate the reasons therefor provided by the Bidder. Under certain circumstances the Bidder may be required as a condition of Contract award to enter into a Monitoring Agreement under which it will be required to take certain specified actions, including compensating an independent Monitor to be selected by the Port Authority, said Monitor to be charged with, among other things, auditing the actions of the Bidder to determine whether its business practices and relationships indicate a level of integrity sufficient to permit it to continue business with the Port Authority.

3. Bidder Eligibility for Award of Contracts - Determination by an Agency of the State of New York or New Jersey Concerning Eligibility to Receive Public Contracts

Bidders are advised that the Authority has adopted a policy to the effect that in awarding its contracts it will honor any determination by an agency of the State of New York or New Jersey that a Bidder is not eligible to bid on or be awarded public contracts because the Bidder has been determined to have engaged in illegal or dishonest conduct or to have violated prevailing rate of wage legislation.

The policy permits a Bidder whose ineligibility has been so determined by an agency of the State of New York or New Jersey to submit a bid on a Port Authority contract and then to establish that it is eligible to be awarded a contract on which it has bid because (i) the state agency determination relied upon does not apply to the Bidder, or (ii) the state agency determination relied upon was made without affording the Bidder the notice and hearing to which the Bidder was entitled by the requirements of due process of law, or (iii) the state agency determination was clearly erroneous or (iv) the state determination relied upon was not based on a finding of conduct demonstrating a lack of integrity or violation of a prevailing rate of wage law.

The full text of the resolution adopting the policy may be found in the Minutes of the Authority's Board of Commissioners meeting of September 9, 1993.

4. No Gifts, Gratuities, Offers of Employment, Etc.

During the term of this Contract, the Contractor shall not offer, give or agree to give anything of value either to a Port Authority employee, agent, job shopper, consultant, construction manager or other person or firm representing the Port Authority, or to a member of the immediate family (i.e., a spouse, child, parent, brother or sister) of any of the foregoing, in connection with the performance by such employee, agent, job shopper, consultant, construction manager or other person or firm representing the Port Authority of duties involving transactions with the Contractor on behalf of the Port Authority, whether or not such duties are related to this Contract or any other Port Authority contract or matter. Any such conduct shall be deemed a material breach of this Contract.

As used herein "anything of value" shall include but not be limited to any (a) favors, such as meals, entertainment, transportation (other than that contemplated by the Contract or any other Port Authority contract), etc. which might tend to obligate the Port Authority employee to the Contractor, and (b) gift, gratuity, money, goods, equipment, services, lodging, discounts not available to the general public, offers or promises of employment, loans or the cancellation thereof, preferential treatment or business opportunity. Such term shall not include compensation contemplated by this Contract or any other Port Authority contract. Where used herein, the term "Port Authority" shall be deemed to include all subsidiaries of the Port Authority.

The Contractor shall insure that no gratuities of any kind or nature whatsoever shall be solicited or accepted by it and by its personnel for any reason whatsoever from the passengers, tenants, customers or other persons using the Facility and shall so instruct its personnel.

In addition, during the term of this Contract, the Contractor shall not make an offer of employment or use confidential information in a manner proscribed by the Code of Ethics and Financial Disclosure dated April 11,

1996 (a copy of which is available upon request to the Office of the Secretary of the Port Authority).

The Contractor shall include the provisions of this clause in each subcontract entered into under this Contract.

5. Conflict of Interest

During the term of this Contract, the Contractor shall not participate in any way in the preparation, negotiation or award of any contract (other than a contract for its own services to the Authority) to which it is contemplated the Port Authority may become a party, or participate in any way in the review or resolution of a claim in connection with such a contract if the Contractor has a substantial financial interest in the contractor or potential contractor of the Port Authority or if the Contractor has an arrangement for future employment or for any other business relationship with said contractor or potential contractor, nor shall the Contractor at any time take any other action which might be viewed as or give the appearance of conflict of interest on its part. If the possibility of such an arrangement for future employment or for another business arrangement has been or is the subject of a previous or current discussion, or if the Contractor has reason to believe such an arrangement may be the subject of future discussion, or if the Contractor has any financial interest, substantial or not, in a contractor or potential contractor of the Authority, and the Contractor's participation in the preparation, negotiation or award of any contract with such a contractor or the review or resolution of a claim in connection with such a contract is contemplated or if the Contractor has reason to believe that any other situation exists which might be viewed as or give the appearance of a conflict of interest, the Contractor shall immediately inform the Director in writing of such situation giving the full details thereof. Unless the Contractor receives the specific written approval of the Director, the Contractor shall not take the contemplated action which might be viewed as or give the appearance of a conflict of interest. In the event the Director shall determine that the performance by the Contractor of a portion of its Services under this Agreement is precluded by the provisions of this numbered paragraph, or a portion of the Contractor's said Services is determined by the Director to be no longer appropriate because of such preclusion, then the Director shall have full authority on behalf of both parties to order that such portion of the Contractor's Services not be performed by the Contractor, reserving the right, however, to have the Services performed by others and any lump sum compensation payable hereunder which is applicable to the deleted work shall be equitably adjusted by the parties. The Contractor's execution of this document shall constitute a representation by the Contractor that at the time of such execution the Contractor knows of no circumstances, present or anticipated, which come within the provisions of this paragraph or which might otherwise be viewed as or give the appearance of a conflict of interest on the Contractor's part. The Contractor acknowledges that the Authority may preclude it from involvement in certain disposition/privatization initiatives or transactions that result from the findings of its evaluations hereunder or from participation in any contract which results, directly or indirectly, from the Services provided by the Contractor hereunder.

6. Definitions

As used in this section, the following terms shall mean:

Affiliate - Two or more firms are affiliates if a parent owns more than fifty percent of the voting stock of each of the firms, or a common shareholder or group of shareholders owns more than fifty percent of the voting stock of each of the firms, or if the firms have a common proprietor or general partner.

Agency or Governmental Agency - Any federal, state, city or other local agency, including departments, offices, public authorities and corporations, boards of education and higher education, public development corporations, local development corporations and others.

Investigation - Any inquiries made by any federal, state or local criminal prosecuting agency and any inquiries concerning civil anti-trust investigations made by any federal, state or local governmental agency. Except for inquiries concerning civil anti-trust investigations, the term does not include inquiries made by any civil government agency concerning compliance with any regulation, the nature of which does not carry criminal penalties, nor does it include any background investigations for

employment, or Federal, State, and local inquiries into tax returns.

Officer - Any individual who serves as chief executive officer, chief financial officer, or chief operating officer of the Bidder by whatever titles known.

Parent - An individual, partnership, joint venture or corporation which owns more than 50% of the voting stock of the Bidder.

If the solicitation is a Request for Proposal:

Bid - shall mean Proposal;
Bidder - shall mean Proposer;
Bidding - shall mean submitting a Proposal.

In a Contract resulting from the taking of bids:

Bid - shall mean bid;
Bidder - shall mean Bidder;
Bidding - shall mean executing this Contract.

In a Contract resulting from the taking of Proposals:

Bid - shall mean Proposal;
Bidder - shall mean Proposer;
Bidding - shall mean executing this Contract.

THE PORT AUTHORITY OF NEW YORK & NEW JERSEY
PURCHASING SERVICES DIVISION
ONE MADISON AVENUE 7TH FL.
NEW YORK, NY 10010

ADDENDUM # 1
March 28, 2008

To prospective Proposers on Request for Proposal Number 15091 for MARINE VESSEL ENGINE REPLACEMENT PROGRAM (MVERP) FOR VESSELS THAT OPERATE WITHIN THE UNITED STATES ENVIRONMENTAL PROTECTION AGENCY DESIGNATED NEW YORK-NORTHERN NEW JERSEY-CONNECTICUT-LONG ISLAND OZONE NON-ATTAINMENT AREA which is due back no later than 2:00 PM on April 10, 2008.

The following information is provided to Proposers:

Item 1: Pre-proposal meeting sign-in sheet

Item 2: ATTACHMENT D- Non-Attainment Area Map

Item 3: Those Proposers who want to view the MVERP Emissions Calculation Factors spreadsheet should make the request at email: dbailey@panynj.gov .

THE PORT AUTHORITY OF NY & NJ

JANE CETERKO, MANAGER
PURCHASING SERVICES DIVISION

BIDDERS FIRM NAME: _____

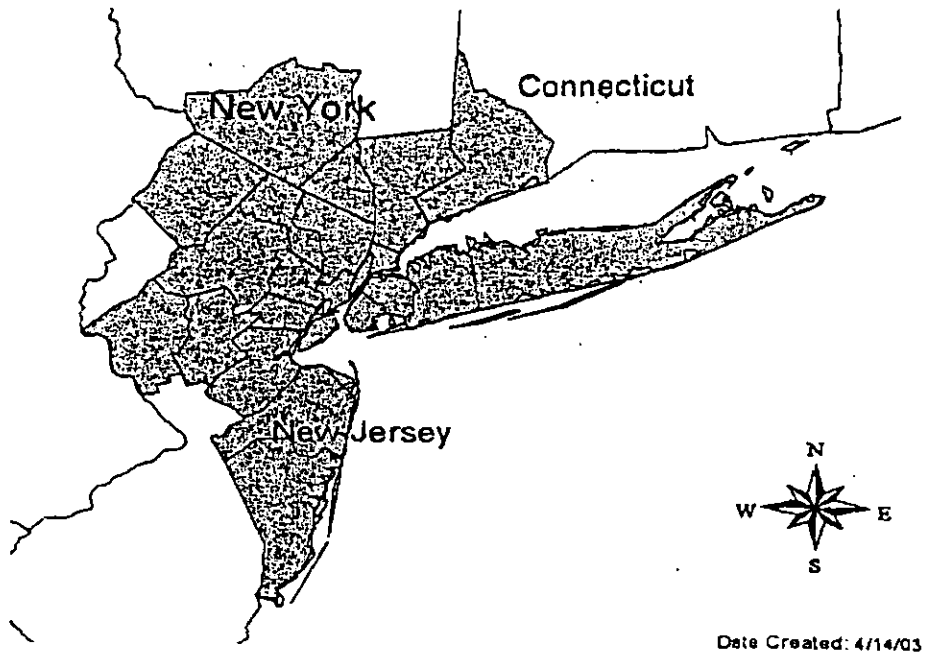
INITIALED: _____

DATE: _____

QUESTIONS CONCERNING THIS ADDENDUM MAY BE ADDRESSED TO MARYELLEN BENNETT WHO CAN BE REACHED AT 212-435-3915.

Attachment D - Non-Attainment Area Map

New York-N. New Jersey-Long Island, NY-NJ-CT Non-Attainment Areas



Date Created: 4/14/03

Attachment B – Part III – Cost Proposal Form

~~4~~ 2

One Form per Vessel

Name of Vessel	Capt Zeke
Number of Propulsion Engines to be replaced	(2)
Number of Auxiliary Engines to be replaced	(2)
Cost of Propulsion Engines:	185,700
Cost of Auxiliary Engines:	31,100
Less amount to be contributed by marine vessel owner	36,100
Total to be reimbursed by Port Authority:	180,700

Other information: This cost proposal form constitutes an alternate costing for the program to include a monitoring system that would prove beneficial to both operator and donor (port auth).

WHITE NEAR COASTAL TOWING CORP

333 JACKSON AVE, ST 9
SYOSSET NY, 11791
RWHITE4@OPTONLINE.NET
PH: 516-802-7126 F: 516-802-7125

TO: PORT AUTHORITY OF NEW YORK

FROM: ROY WHITE, CAPTAIN ZEKE PROPOSAL

RE: MARINE VESSEL ENGINE REPLACEMENT PROGROM (MVERP) for vessels that Operate within the United States Environmental Protection Agency Designated New York-Northern New Jersey-Connecticut-Long Island Ozone Non-Attainment Area, RFP #15091: Clarifications and Concerns

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First let me apologize for this late response, we had some very pressing issues involving our oil barges that required immediate attention.

Responses to numbered items are as follows:

1) Capt Zeke was in operation in 2007, logs for a 364 day period are included. (May 15, 2007 to May 15, 2008) Estimated number of hours in our proposal included the obvious running hours underway (see logs) as well as the hours during which mains are run between consecutive jobs and before and after a job starts and ends (startup and shutdown).
2) Survey report provided quoted a near maximum horsepower for a 1271 main engine bared on an operating RPM that is not utilized in a tug (2100RPM). This constitutes an error on the part of the surveyor which went uncorrected by owner (White Near Coastal Towing). Regarding the quoted difference between the 472 and 483 HP, this is best accounted for in terms of inaccuracies involving old equipment and poor databases. Proposer (White Near Coastal) affirms these figures to be squarely in line

with reality and they should approximate others seen in past proposals for 1271 main operating at 1800 RPM. See Iron Eagle submittal (Bridge Construction Services) and Robert IV (Henry Marine).

(1) The original 371 generator sets have been replaced with the generators specified in the submittal. All have been in a bad state of repair and are being constantly patched up with old parts being kept in stock.

(2) Enclosed are requested pieces of information regarding 4045D John Deere generator sets.

Sorry for delays,

Roy White
President

CURRY MARINE
PO BOX 610
NEWPORT OR 97365
541 265-7955

To: White Near Coastal Towing 04/15/08

Att: Jim

Fax: 631 547-0231

TOTAL

2ea Cummins QSK 19 600 HP @ 1800 RPM Marine Engine **$185,700.00**

Includes: Full authority electronic engine
Continuous Duty rating
Keel cooled configuration
24 Volt electrical, starter & alternator
Engine room & pilot house instrument panels
Extension wiring harnesses for instrument panels
Air cleaner
Front engine mount
Marine gear oil cooler
Spin on fuel, lube oil and water filters
Racor crank vent system
Ethernet connection for remote engine monitoring
Sea Command Elite monitoring system
EPA Tier 2 compliant
Standard Commercial Warranty
F.O.B. Newport OR

2ea Optional Cummins Eliminator lube oil centrifuge **$8,200.00**

Engine mounted
No spin on lube filters required

Note: Start up and sea trial at your location not included.

Thank you,

Scott Graf

White Near Coastal Towing

333 Jackson Ave. Syosset, NY 11791
TEL: (516) 802-7126 FAX: (516) 802-7125

A. Letter of Transmittal

As an operating company with its own assets, White Near Coastal Towing has been in existence for five years. As a company with extensive experience in dealing with agencies, corporations and individuals, it has been able to deal with the myriad of situations involving accountability both on paper and in the field.

In the course of normal business activities, it is necessary to file reports with federal regulatory agencies (Coast Guard, Corps of Engineers) private corporations and lenders. These capabilities are the very same necessary and useful ones needed to comply with the Port Authority contract requirements. The growth of the company to its present multi-million dollar level has been quick but measured.

The capabilities of White Near Coastal Towing are enhanced greatly by its association with several other companies owned wholly or partly by Roy White. These associations have both broadened its range of abilities and helped secure its financial security through diversity. Associated companies include Bridge Construction Services (tugs), Eastern Barge Services (tugs), Greater New York Marine Transportation (oil barges), as well as others.

(1) See above;
(2) Roy L. White, President, (516) 330-4803 is authorized to negotiate and execute the Contract;
(3) Roy L. White, President, (516) 330-4803 is the contact person to which the Port Authority can address questions or issues related to this RFP;
(4) Roy White, President, 12 Dumbarton Drive Huntington, NY 11743 and
John White, Vice President, 236 S Snedecor Ave. Bayport, NY 11705 are the only owners Of White Near Coastal Towing.

_____ President

_____ Vice President

White Near Coastal Towing

333 Jackson Ave. Syosset, NY 11791
TEL: (516) 802-7126 FAX: (516) 802-7125

B. Executive Summary

The major feature of this proposal by White Near Coastal Towing, Inc is the very large reduction in tons of NOX per year. Due to the large number of hours this vessel is used annually, and the amount of pollution produced by the existing antiquated equipment, there is a large proposed reduction. The owner's experience and success in the towing industry, the oil barge industry and the construction industry allow for a solid base in terms of security, financially and otherwise. Most employees of this company and others owned wholly or partly by Roy White are lifetime or long time participants in marine related businesses. This goes for those in managerial or on ship operations positions. The structure of management is such that only one individual would be in charge of the actual repower and another in charge of planning, scheduling and payments. The expertise and competencies needed to meet the requirements of this RFP are already in place and in existence and in use daily

White Near Coastal Towing

333 Jackson Ave. Syosset, NY 11791
TEL: (516) 802-7126 FAX: (516) 802-7125

April 10, 2008

Above named proposer does intend to operate any vessel, which is a beneficiary of the Port Authority program to which this application is addressed. Such operation shall take place a minimum of 80% of its total hours in the NAA Zone and for a minimum of 10 continuous years from the inception of the contract.

Ryan White

White Near Coastal Towing

333 Jackson Ave. Syosset, NY 11791
TEL: (516) 802-7126 FAX: (516) 802-7125

F. As a company with years of continuous operation and experience gleamed from owning and maintaining a fleet of vessels and barges, White Near Coastal Towing is fully capable of the work necessary to repower tugs. Technical Supervision shall be provided by the experts at Tottenville Marina in Staten Island, NY where the dry dock would be done. Attached in this package are engine descriptions for main and generator set engines. General timeline information is as follows;

Acquisition of engines:	1 month maximum
Installation:	5 weeks maximum
Sea trial:	1 week after start of replacement engines.
Scrappage dates:	Immediate, after removal

Please be aware that we use our daily logs for our vessels. A sample is included. To get the annual hour totals, the information from these sheets is used. Due to the enormous amount of paperwork involved with 12 copies and 365 logs all are not included. If there is another way to supply you with necessary information please let us know.

White Near Coastal Towing

333 Jackson Ave. Syosset, NY 11791
TEL: (516) 802-7126 FAX: (516) 802-7125

Addendum- 1 Remote Engine Monitoring

In addition to the fuel reduction and subsequent NOX reductions as per the formula calculations, the owners of White Near Coastal Towing intend to capitalize on the QSK-19's computer technology resulting in further actual fuel reductions. The QSK-19 is equipped with a computerized engine monitoring system. This monitoring system has Ethernet capability. We are planning to use this system along with Cummins "Command Elite Plus" to remotely monitor engine RPM and fuel usage from our main office. Due to the increased horsepower of the new engines, we will instruct the Captains to routinely operate the engines at 1500 RPM maximum. With the system installed on the engines, management will be able to ensure that this practice is being adhered to. The load factor associated with continuous usage at 1500 RPM is by itself approximate to the .68 load factor used in the Port Authority calculations. As a fixed reference number the .68 load factor includes idle engine operation time. This practice will result in an actual lower than .68 load factor during normal operation and considerably lower when idle operation time is factored into the equation and drastically reduce fuel consumption and our NOX tonnage figures. We suggest that the real world load factors with the system, (and the ability to truly limit RPM) would be in the range of .52 to .56 lowering the total emissions and to some degree offsetting increased costs. As can be seen from the horsepower curve tables, there will still be a horsepower increase over the old engines when operated at 1500 RPM allowing the vessel to complete its usual work.

White Near Coastal Towing

333 Jackson Ave. Syosset, NY 11791
TEL: (516) 802-7126 FAX: (516) 802-7125

Vessel Name: CAPTAIN ZEKE;

Current Main Engines: Detroit # 6120084/ 16-71 472 HP @1800 RPM (w/60 injectors)
Detroit# 6120085/ 16-71 472 HP @ 1800 RPM (w/60 injectors)

Proposed Engine for Repower: Cummins QSK-19 Tier 2 (600 hp @ 1800 RPM)

Current Generator Engines: Detroit# 4A 249944
4A 249944

Proposed Replacement Generator Engines: John Deere Model 4045 DFM70 Tier 2 (62 hp)

Curry Marine
PO Box 610
Newport OR 97365
541 265-7955

White Near Coastal Towing 04/15/08
Att: Jim
Fax: 631 547-0231

Jim, here is a emissions comparison on the Cummins QSK 19 and John Deere 4045 against the Detroit diesels.

Existing Machinery:
2ea Detroit Diesel 16V71, 6,100 hours per year @ 18.77 g/kwhr = 61.80 Tons per year
1ea Detroit Diesel 471 gen 8,760 hours per year @ 18.77 g/kwhr = 4.92 Tons per year
TOTAL 66.72 Tons per year

Proposed Machinery:
2ea Cummins QSK 19, 6,100 hours per year @ 6.37 g/kwhr = 26.072 Tons per year
1ea John Deere 4045 gen, 8,760 hours per year @ 6.55 g/kwhr = 1.72 Tons per year
TOTAL 27.792 Tons per year

Combined Savings: 66.72 Tons per year
-27.792 Tons per year
TOTAL SAVINGS= 38.928 Tons per year

Formula used:

kw x 0.68 x hours x g/kwhr divide by 907,180

kw = engine hp rating
0.68 = assumed load factor
hours = operating hours per year
g/kwhr = grams of nox produced per kilowatt hour
907,180 = conversion of grams to tons

Detroit Diesel 16V71 rated 360 kw @ 1800
Detroit Diesel 471 rated 40 kw @ 1800

Cummins QSK 19 rated 447 KW @ 1800
John Deere 4045 rated 40 KW @ 1800

Thank you,
Scott Graf

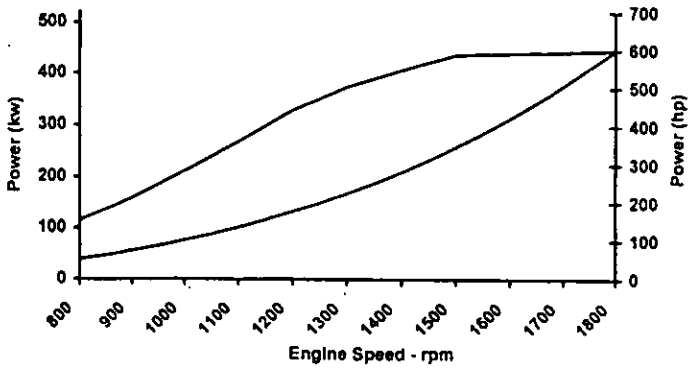
CUMMINS INC. Columbus, IN 47201 Marine Performance Curves	Basic Engine Model QSK19-M	Curve Number: M-4442	
	Engine Configuration D193102MX03	CPL Code: 2768	Date: 4-Jan-08

Displacement: 19 Liter [1150 in³]
Bore: 159 mm [6.25 in]
Stroke: 159 mm [6.25 in]
Fuel System: Modular Common Rail (MCRS)
Cylinders: 6

kW [bhp] @ rpm
Advertised Power: 447 [600] @ 1800

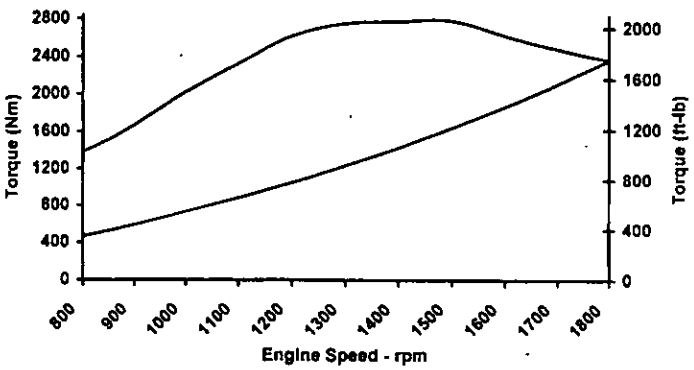
Aspiration: Turbocharged / Low Temperature Aftercooled
Rating Type: Continuous

CERTIFIED: This marine diesel complies with or is certified to the:
IMO - NOx requirements of the International Maritime Organization (IMO), MARPOL 73/78 Annex VI, Regulation 13
EPA Tier 2 - Model year requirements of the EPA marine regulation (40CFR94)
EU Stage IIIa - EC Nonroad Mobile Machinery Directive (2004/26/EC)



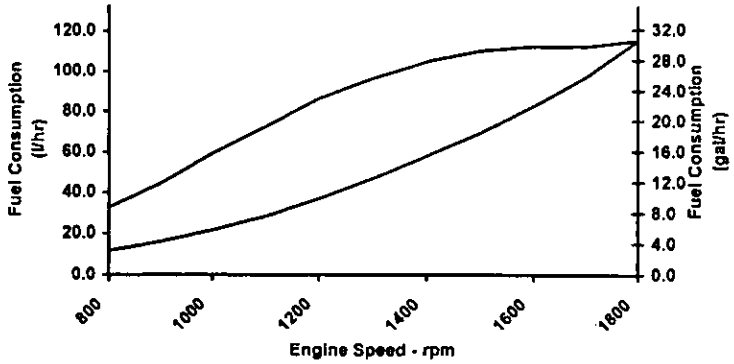
RATED POWER OUTPUT CURVE

rpm	kw	bhp
1800	447	600
1700	444	595
1600	441	591
1500	438	587
1400	408	546
1300	376	504
1200	330	442
1100	269	361
1000	212	285
900	158	212
800	116	156



FULL LOAD TORQUE CURVE

rpm	N-m	ft-lb
1800	2373	1751
1700	2490	1837
1600	2632	1941
1500	2786	2055
1400	2779	2050
1300	2760	2036
1200	2625	1936
1100	2334	1722
1000	2026	1495
900	1675	1235
800	1385	1021



FUEL CONSUMPTION - PROP CURVE

rpm	l/hr	gal/hr
1800	115.9	30.6
1700	97.7	25.8
1600	83.0	21.9
1500	69.6	18.4
1400	58.3	15.4
1300	47.1	12.4
1200	37.2	9.8
1100	28.5	7.5
1000	21.7	5.7
900	16.2	4.3
800	11.8	3.1

Rated Conditions: Ratings are based upon ISO 8665 and SAE J1228 reference conditions; air pressure of 100 kPa [29.612 in Hg], air temperature 25deg. C [77 deg. F] and 30% relative humidity. Power is in accordance with IMCI procedure. Member NMMA.

Rated Curves (upper) represents rated power at the crankshaft for mature gross engine performance capabilities obtained and corrected in accordance with ISO 3046. Propeller Curve (lower) is based on a typical fixed propeller demand curve using a 3.0 exponent. Propeller Shaft Power is approximately 3% less than rated crankshaft power after typical reverse/reduction gear losses and may vary depending on the type of gear or propulsion system used

Fuel Consumption is based on fuel of 35 deg. API gravity at 16 deg C [60 deg. F] having LHV of 42,780 kj/kg [18390 Btu/lb] and weighing 838.9 g/liter [7.001 lb/U.S. gal].

Continuous Rating (CON): Intended for continuous use in applications requiring uninterrupted service at full power. This rating is an ISO 3046 standard power rating.

CHIEF ENGINEER

Propulsion Marine Engine Performance Data

Curve No.	M-4442
DS :	D19-MX-1
CPL :	2768
DATE:	4-Jan-08

General Engine Data

Engine Model		QSK19-M
Rating Type		Continuous
Rated Engine Power	kW [hp]	447 [600]
Rated Engine Speed	rpm	1800
Rated Power Production Tolerance	±%	3
Rated Engine Torque	N·m [lb·ft]	2374 [1751]
Peak Engine Torque @ 1500 rpm	N·m [lb·ft]	2786 [2055]
Brake Mean Effective Pressure	kPa [psi]	1583 [230]
Indicated Mean Effective Pressure	kPa [psi]	3165 [459]
Default Idle Speed Setting	rpm	650
Minimum Idle Speed Setting	rpm	550
Normal Idle Speed Variation	rpm	10
High Idle Speed Range Minimum	rpm	1900
Maximum	rpm	2150
Maximum Allowable Engine Speed	rpm	2450
Maximum Torque Capacity from Front of Crank[2]	N·m [lb·ft]	N.A. [N.A.]
Compression Ratio		15:1
Piston Speed	m/sec [ft/min]	9.5 [1874]
Firing Order		1-5-3-6-2-4
Weight (Dry) - Engine Only - Average	kg [lb]	2200 [4850]
Weight (Dry) - Engine With Heat Exchanger System - Average	kg [lb]	2336 [5150]
Weight Tolerance (Dry) Engine Only	3xStd Dev(±%)	10.0

Noise and Vibration

Average Noise Level - Top	(Idle)	dBA @ 1m	82
	(Rated)	dBA @ 1m	93
Average Noise Level - Right Side	(Idle)	dBA @ 1m	85
	(Rated)	dBA @ 1m	97
Average Noise Level - Left Side	(Idle)	dBA @ 1m	85
	(Rated)	dBA @ 1m	98
Average Noise Level - Front	(Idle)	dBA @ 1m	87
	(Rated)	dBA @ 1m	99

Fuel System[1]

Avg. Fuel Consumption - ISO 8178 E3 Standard Test Cycle	l/hr [gal/hr]	78 [20.7]
Fuel Consumption at Rated Speed	l/hr [gal/hr]	116 [30.6]
Approximate Fuel Flow to Pump	l/hr [gal/hr]	382 [101.0]
Maximum Allowable Fuel Supply to Pump Temperature	°C [°F]	60 [140]
Approximate Fuel Flow Return to Tank	l/hr [gal/hr]	267 [70.4]
Approximate Fuel Return to Tank Temperature	°C [°F]	51 [124]
Maximum Heat Rejection to Drain Fuel	kW [Btu/min]	1.5 [85]

Air System[1]

Intake Manifold Pressure	kPa [in Hg]	189 [56]
Intake Air Flow	l/sec [cfm]	687 [1456]
Heat Rejection to Ambient	kW [Btu/min]	40 [2292]

TBD= To Be Determined N/A = Not Applicable N.A. = Not Available

1 All Data at Rated Conditions.
2 Consult Installation Direction Booklet for Limitations.
3 Heat rejection to coolant values are based on 50% water/50% ethylene glycol mix and do NOT include fouling factors. If sourcing your own cooler, a service fouling factor should be applied according to the cooler manufacturer's recommendation.
4 Consult option notes for flow specifications of optional Cummins seawater pumps, if applicable.

Propulsion Marine Engine Performance Data

Curve No.	M-4442
DS :	D19-MX-1
CPL :	2768
DATE:	4-Jan-08

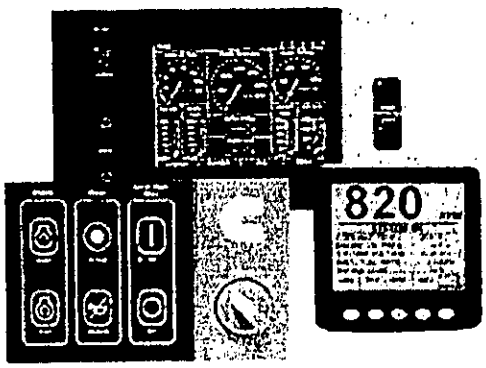
Exhaust System[1]	
Exhaust Gas Flow ..... l/sec [cfm]	1602 [3395]
Exhaust Gas Temperature (Turbine Out) ..... °C [°F]	437 [818]
Exhaust Gas Temperature (Manifold) ..... °C [°F]	563 [1,045]
Emissions (in accordance with ISO 8178 Cycle E3)	
NOx (Oxides of Nitrogen) ..... g/kw·hr [g/hp·hr]	6.469 [4.824]
HC (Hydrocarbons) ..... g/kw·hr [g/hp·hr]	0.139 [0.103]
CO (Carbon Monoxide) ..... g/kw·hr [g/hp·hr]	1.466 [1.094]
PM (Particulate Matter) ..... g/kw·hr [g/hp·hr]	0.088 [0.065]
Cooling System[1]	
Sea Water Pump Specifications ..... MAB 0.08.17-07/16/2001	
Pressure Cap Rating (With Heat Exchanger Option) ..... kPa [psi]	103 [15]
Engines with Low Temperature Aftercooling (LTA)	
Single Loop LTA	
Coolant Flow to Cooler (with open thermostat) ..... l/min [gal/min]	238 [63]
LTA Thermostat Operating Range (Start to Open) ..... °C [°F]	66 [150]
LTA Thermostat Operating Range (Full Open) ..... °C [°F]	80 [175]
Heat Rejection to Engine Coolant[3] ..... kW [Btu/min]	359 [20455]
Maximum Coolant Inlet Temperature from LTA Cooler ..... °C [°F]	49 [120]

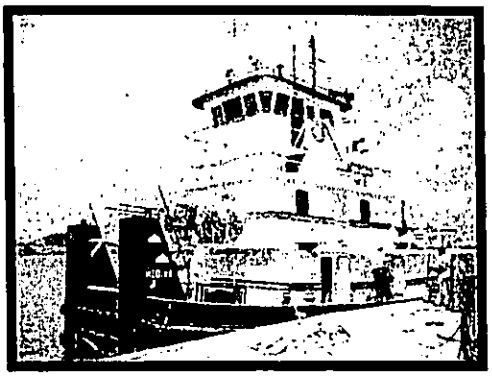
TBD= To Be Determined N/A = Not Applicable N.A. = Not Available

[1] All Data at Rated Conditions.
[2] Consult Installation Direction Booklet for Limitations.
[3] Heat rejection to coolant values are based on 50% water/50% ethylene glycol mix and do NOT include fouling factors. If sourcing your own cooler, a service fouling factor should be applied according to the cooler manufacturer's recommendation.
[4] Consult option notes for flow specifications of optional Cummins seawater pumps, if applicable.

Marine > Electronic Information System

Electronic Information System





Cummins is pleased to introduce C-Command panels, part of our Electronic Information System (EIS) product line, designed specifically for the marine industry. The systems are designed to maximize operation of the Tier 2 engines and include a variety of monitoring and display options.

C-Command - cost-effective, flexible, basic system

C-Command Elite - premium features for advanced monitoring and control

C-Command Elite Plus - type-approved systems for classed applications

Every Situation. C-Command Panels brochure

EVERY™ PORT.

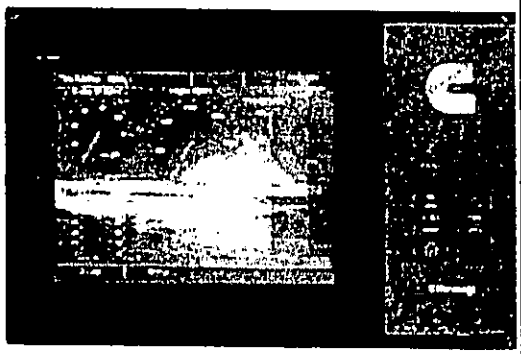
Publish Date-January 04, 2008 :: Expiry Date-January 03, 2009 :: Author Id-bc949 :: Approver Id-bc949
Apps :: Marine
Regions :: Southeast Asia, East Asia, India, Mexico, Korea Central Area, South Pacific, Latin America North America, Japan

Distribution is intended for Cummins personnel and distributors

Remote Control Panel

Component Features

Remote digital interface to engine control
Digital microprocessor controlled
Features:
- 8.4" FT color touch-screen display
- Menu-driven user interface
- Ethernet communication
- Self-diagnostic
- Start/Stop control
- Alarm indication
- Station transfer control
- Multiple engine monitoring capability



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Roles :: Engine Dealer, Boat Builder, Naval Architect/Engineer, Cummins Mercruiser Distributor, Certification, Cummins Distributor, OEM, Training, Fleet Customer, MerCruiser Only Distributor, Component Supplier, Service, Boat Dealer, Sales

Distribution is intended for Cummins personnel and distributors.

C-Command Elite

System Features

- Modular design
- Simplified installation
- Compatible with C-Command remote options
- Digital access to all ECM engine data
- Connection to six (6) customer inputs (2 temperature, 2 pressure and 2 switch)

Components

- Customer Interface Box (CIB)
- Remote Control Panel (RP) - Optional

Technical Information

- Wiring Diagrams

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Distribution is intended for Cummins personnel and distributors

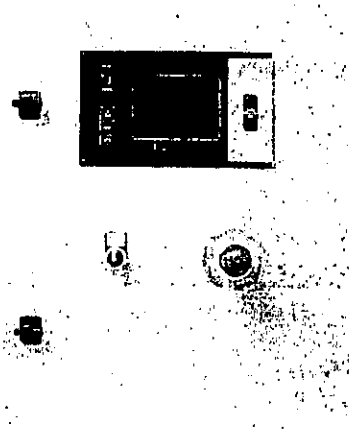
C-Command Elite Plus

System Features

Complies with Marine Classification Society rules
Compatible with the C-Command Elite system
Remote I/O Module (RIO) included for alarm system sensors
Shut-Down Unit (SDU) included for safety system sensors
Alarm and safety system data available at all digital stations

Component Features

Customer Interface Box (CIB)
Central engine to vessel interface point
Same features as C-Command Elite CIB
Plus:
- RIO for alarm system sensors
- SDU for safety system sensors
- Requires two (2) independent power supplies
- Compatible with all remote panel options
- Additional I/O available for Marine Societies not covered by the default system



Technical Information

Wiring Diagrams

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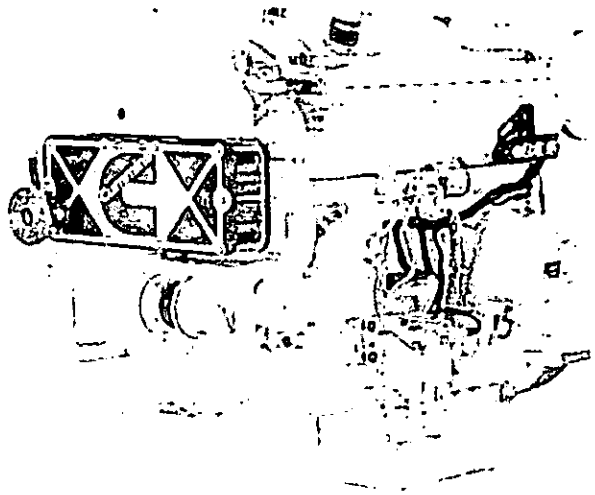
Distribution is intended for Cummins personnel and distributors

QSK19 Tier 2

MARINE PROPULSION AND AUXILIARY ENGINES

SPECIFICATIONS

ENGINE TYPE	IN-LINE, 6 CYLINDER, 4 STROKE DIESEL
BORE & STROKE	159 mm x 159 mm (6.25 in x 6.25 in)
DISPLACEMENT	19 L (1150 in^3)
ROTATION	COUNTERCLOCKWISE FACING FLYWHEEL
ASPIRATION	TURBOCHARGED/AFTERCOOLED
EMISSIONS	U.S. EPA TIER 2, EU STAGE IIIA, IMO



RATINGS

ENGINE MODEL	OUTPUT POWER kW	HP	kWe*	ENGINE SPEED RPM	RATING DEFINITION	FUEL CONSUMPTION** L/hr (gal/hr)
VARIABLE SPEED						
QSK19-M TIER 2	373	500	-	1800	CONTINUOUS	68.9 (18)
QSK19-M TIER 2	448	600	-	1800	CONTINUOUS	78 (21)
QSK19-M TIER 2	492	660	-	1800	CONTINUOUS	94.9 (25)
QSK19-M TIER 2	560	750	-	1800	HEAVY DUTY	98.7 (26)
QSK19-M TIER 2	567	760	-	2100	HEAVY DUTY	N/A
QSK19-M TIER 2	597	800	-	2100	MCD	N/A
FIXED SPEED						
QSK19-DM TIER 2	563	755	541	1800 (60 Hz)	PRIME	33 (9)

* kWe reflects the approximate amount of power available when used in a keel cooled genset configuration
** Average fuel consumption based on ISO 8178 E3 Standard Test Cycle (variable speed models) and ISO 8178 D2 Standard Test Cycle (fixed speed models)

FEATURES AND BENEFITS

Engine Design - Reliable base engine uses common components from the proven K19, K38 and K50 engines. A new cast-iron, ductile single-piece piston with nitride-coated rings and hardened cylinder liner provides excellent durability and long life

Fuel System - Modular Common-Rail Fuel System features a simplified design which provides constant high injection pressure regardless of engine speed or load conditions. Benefits include low noise and vibration for quiet operation, idle stability and low-end torque

Cooling System - Single-loop cooling eliminates the need for two keel coolers for reduced installation expense. Engine-mounted titanium plate heat exchanger provides superior durability with minimal maintenance requirements

Exhaust System - Water-cooled exhaust manifold cools engine surface temperatures. Design is a cast single piece construction that eliminates potential exhaust leakage

Air System - Mounted or remote marine grade air cleaner with replaceable element reduces maintenance cost. Water-cooled turbocharger optimized for vessel operating conditions and safety

Lubrication System - Standard capacity 60.6 L (16 U.S. gal) oil pan with shallow, rear or front sump for installation flexibility. Cummins spin-on oil filters available on engine service side

EVERY™ PORT.

QSK19 Tier 2

MARINE PROPULSION AND AUXILIARY ENGINES

FEATURES AND BENEFITS

Electronics - 24-volt Quantum System electronics feature a proven CM850 ECM to monitor operating parameters such as fuel consumption, duty cycle, engine load and speed, while providing diagnostics, prognostics and complete engine protection. Simplified electrical customer interface box for all vessel connections reduces installation complexity

Certifications - Complies with MARPOL 73/78 Annex VI (IMO), U.S. EPA Tier 2 and EU Stage IIIA emissions regulations. Designed to meet the International Association of Classification Societies (IACS) and SOLAS requirements. Consult your local Cummins professional for a complete listing of available class approvals

Optional Equipment

- Integrated C Command panels with a selection of display options are available to monitor and maximize operation and performance
- Optional Cummins ELIMINATOR™ filter replaces disposable lube filters with a self-cleaning centrifuge that reduces maintenance expense and improves engine life
- Premium coolant hose connections
- Duplex lube oil and fuel filtration
- Integral marine gear oil cooler
- SAE A or B auxiliary drive
- Front PTO adaptor
- Fully integrated, type-approved alarm and safety system

DIMENSIONS

LENGTH	2007 mm	79 in	KC
WIDTH	963 mm	38 in	
HEIGHT	1880 mm	74 in	
WEIGHT	2189 kg	4825 lb	

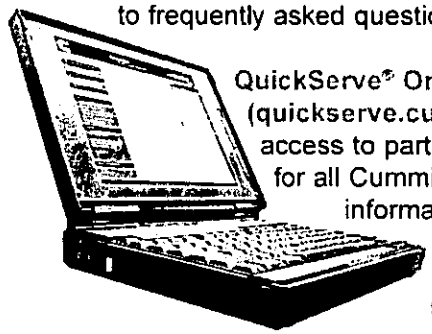
Dimensions and weight may vary based on selected engine configuration

THE CUMMINS ADVANTAGE

- 24 Hour Customer Support
- Reliable & Durable Products
- Best in Class Life Cycle Cost
- Comprehensive Global Warranty

EVERY QUESTION. ANSWERED.

Marine Website (marine.cummins.com) - Offers the most up-to-date product specifications, installation drawings and technical information as well as answers to frequently asked questions



QuickServe® Online (quickserve.cummins.com) - Gives easy access to parts and service information for all Cummins engines. Find the information you need with our high-speed search function and your engine's serial number

Cummins Online Product Registration - Register your Cummins engine quickly and easily on the Marine website to ensure quality parts and service

Distributor Expertise - The best source for service, parts and application assistance. To find your nearest Cummins distributor, go to the Worldwide Service Locator at wsl.cummins.com. If you need assistance beyond what your local Cummins professional has offered, contact the Regional Office for your area or email wave.master@cummins.com

Global Support Network - Backed by the strength of Cummins distribution network with marine service locations in 160 countries, Cummins engines include a comprehensive, worldwide warranty

Cummins Inc.
4500 Leeds Avenue - Suite 301
Charleston, South Carolina 29405
U.S.A.

Email: wave.master@cummins.com
Internet: http://marine.cummins.com

Bulletin M10050 Printed in U.S.A. REV 1/08

Cummins is a pioneer in product improvement. Thus specifications may change without notice. Illustrations may include optional equipment.

MEMPHIS DIESEL POWER, INC.

P.O. BOX 1452
MEMPHIS, TENNESSEE 38101-1452
TEL: 901-774-6800

1488 CHANNEL AVE.
MEMPHIS, TENNESSEE 38113
FAX: 901-948-5247

JOHN DEERE

April 15, 2008

To: White Near Coastal
Attn: Jim

From: Sean Farrell

Ref: John Deere 45 kW Marine Genset Quotation

Memphis Diesel Power is pleased to offer the following marine generator set:

45 kW GenTech MODEL 45MKCTII
MARINE KEEL COOLED DIESEL GENERATOR

ENGINE DATA:

- ***JOHN DEERE*** MARINE DIESEL ENGINE MODEL 4045DFM70 ***TIER II***
- 62 HP @ 1800 RPM
- HEAVY DUTY 6 INCH CHANNEL STEEL SKID
- VIBRATION ISOLATORS
- COOLANT EXPANSION TANK
- WATER COOLED EXHAUST MANIFOLD
- WATER COOLED TURBOCHARGER HOUSING
- DRY EXHAUST ELBOW
- CRANKCASE BREATHER
- OIL DRAIN VALVE & HOSE
- FUEL WATER SEPARATOR SYSTEM
- 12 VOLT DC STARTING SYSTEM
- 12 VOLT DC BATTERY CHARGING ALTERNATOR
- BELT GUARD
- FUEL PRIMING PUMP
- ECU GOVERNOR SYSTEM

- ENGINE INSTRUMENT PANEL
  - *ENGINE OIL PRESSURE*
  - *RPM*
  - *ENGINE TEMPERATURE*
  - *HOURS*
  - *BATTERY DC VOLTAGE*
- SAFETY SHUT DOWN SYSTEM
  - *LOW OIL PRESSURE*
  - *HIGH COOLANT TEMPERATURE*
  - *OVER SPEED*
- AIR FILTER
- ENGINE OPERATORS MANUAL

GENERATOR DATA:

- ***12 LEAD*** GENERATOR
- 4 POLE / 1800 RPM
- BROAD RANGE kW RATING:
  - ***45 kW @ 80° C. TEMPERATURE RISE ON ARMATURE***
- 3 PHASE
- INSULATION CLASS: H
- .8 POWER FACTOR
- AMBIENT TEMPERATURE: 40° C.
- 12 LEAD RECONNECTABLE FOR VARIOUS VOLTAGE COMBINATIONS
- SOLID STATE VOLTAGE REGULATOR
  - *ENCAPSULATED FOR MOISTURE PROOF PROTECTION*
  - *± 1% VOLTAGE REGULATION*
  - *SENSING & POWER INPUT 190-240 VAC*
  - *OUTPUT POWER-CONTINUOUS: 75 VDC @ 3.5ADC*
  - *UNDER FREQUENCY PROTECTION*
  - *OPERATING TEMPERATURE: -40° C. TO + 60° C.*
- BRUSHLESS EXCITATION SYSTEM

LOAD BANK TESTED PRIOR TO DELIVERY
FREQUENCY & VOLTAGE PRE-SET

PRICE: $ 15,550.00 EACH
DELIVERY: 1 WEEK (PRICES ARE VALID FOR 30 DAYS.)
(2) YEAR – 2000 HOUR WARRANTY ON ENGINE
(1) YEAR WARRANTY ON GENERATOR

45MKC OPTIONS:

Day Tank Kit **$105.00**
Expansion tank pressure cap adapter flange to convert cap connection to utilize an engine room coolant day tank. Requires welding a hose bib onto the adapter.

Exhaust Connection Kit **$295.00**
Includes: (1) 4 inch NPT flange
(1) exhaust gasket, nuts, bolts, washers
(1) 4 inch x 18 inch stainless steel flex connection with 4 inch NPT male threads on each end.

Engine Service Manual **$125.00**

Engine Parts Manual **$ 75.00**

Thanks,

Sean Farrell
Memphis Diesel Powe

JOHN DEERE

ENGINE PERFORMANCE CURVE

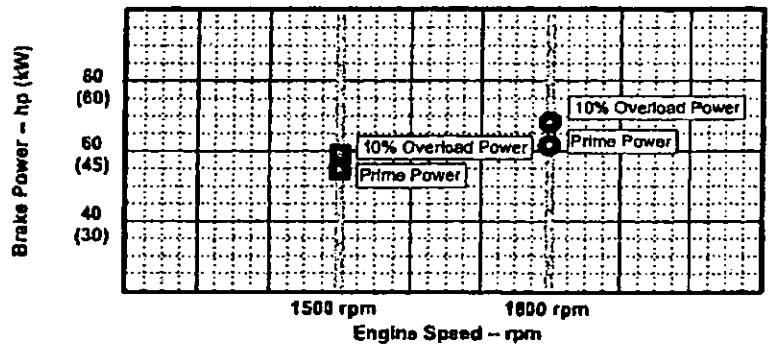
Rating: Marine

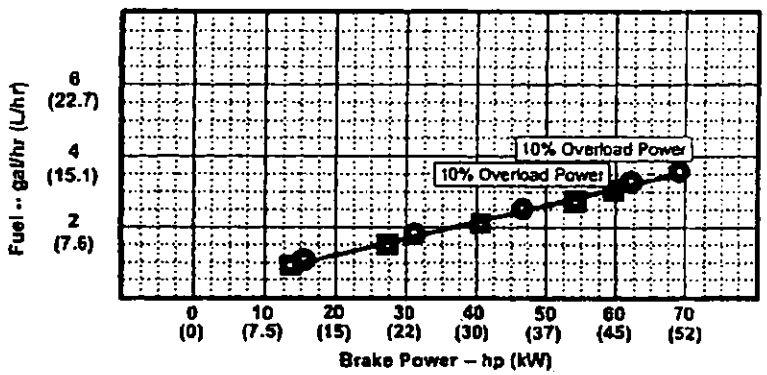
Application: Generator
Prime Power

POWERTECH 4.5 L Engine
Model: **4045DFM70**

62 hp (46 kW) @ 1800 rpm
54 hp (40 kW) @ 1500 rpm

Speed rpm (Hz)	Generator Efficiency %	Keel Cooled (no fan)		Power Factor	Calculated Gen-Set Rating	
					kW	kVA
1500 (50)	88-92	--	--	0.8	35-37	44-46
1800 (60)	88-92	--	--	0.8	40-42	50-53





Air Intake Restriction ..... 12 in.H_2O (3 kPa)
Exhaust Back Pressure ..... 30 in.H_2O (7.5 kPa)

Gross power guaranteed within + or - 5% at SAE J1995 and ISO 8665 conditions:
- 77 °F (25 °C) air inlet temperature
- 29.31 in.Hg (99 kPa) barometer
- 104 °F (40 °C) fuel inlet temperature
- 0.853 fuel specific gravity @ 60 °F (15.5 °C)

Conversion factors:
- Power: kW = hp x 0.746
- Fuel: 1 gal = 7.1 lb, 1 L = 0.85 kg
- Torque: N-m = lb-ft x 1.356

All values are from currently available data and are subject to change without notice.

Notes:

1800 RPM Emission Certifications:	1500 RPM Emission Certifications:
• EPA Commercial Marine (40 CFR Part 94) • IMO Exempt*	¥ IMO Exempt*
Ref: Engine Emission Label	Ref: Engine Emission Label

Certified by:

Neal Leeper 1 Apr 2004

* Revised Data

Curve 4045DFM7062MG ..... Sheet 1 of 2
April 2004

Engine Specification Data

General Data

Model	4045DFM70
Number of Cylinders	4
Bore and Stroke–in. (mm)	4.2 x 5.0 (106.5 x 127)
Displacement–in.^{3} (L)	275 (4.5)
Compression Ratio	17.6:1
Valves per Cylinder–Intake/Exhaust	1 / 1
Firing Order	1-3-4-2
Combustion System	Direct Injection
Engine Type	In-line, 4-Cycle
Aspiration	Natural
Engine Crankcase Vent System	Closed
Max. Crankcase Pressure–in. H_2O (kPa)	2 (0.5)

Physical Data

Length–in. (mm)	34.8 (685)
Width–in. (mm)	28.0 (712)
Height, Crank Center to Top–in. (mm)	24.4 (620)
Height, Crank Center to Bottom–in. (mm)	11.1 (282.5)
Weight, dry–lb (kg)	1019 (462)
(Includes flywheel housing, flywheel & electrics)	
Center of Gravity Location From	
Rear Face of Block (X-axis)–in. (mm)	11.0 (280)
Right of Crankshaft (Y-axis)–in. (mm)	-1.0 (-25)
Above Crankshaft (Z-axis)–in. (mm)	7.9 (200)
Max. Allow. Static Bending Moment at Rear Face of Flywhl Hsg w/ S-G Load–lb-ft (N•m)	600 (814)
Thrust Bmg. Load Limit (Forward)–lb (N)	900 (4003)
Maximum Installation Angle	
Front up–degrees	12°
Front down–degrees	0

Air System

	1800 rpm	1500 rpm
Min. Ventilation Area–In.^{2} (m^2)	34.1(0.022)	23.3(0.015)
Maximum Allowable Air Temperature Rise, Ambient to Engine Inlet–°F (°C)	30 (17)	30 (17)
Engine Air Flow–ft^3/min (m^3/min)	127 (3.6)	85 (2.4)
Maximum Air Intake Restriction		
Dirty Air Cleaner–in. H_2O (kPa)	25 (6.25)	25 (6.25)
Clean Air Cleaner–in. H_2O (kPa)	12 (3.0)	12 (3.0)

Cooling System

	1800 rpm	1500 rpm
Eng. Heat Reject.–BTU/min (kW)	2391 (42)	1793 (31.5)
Eng. Radiated Heat–BTU/min (kW)	353 (6.2)	290 (5.1)
Coolant Flow–gal/min (L/min)	32* (125*)	30* (116*)
Min. Coolant Fill Rate–gal/min (L/min)	3.2 (12)	3.2 (12)
Thermostat Start to Open–°F (°C)	180 (82)	180 (82)
Thermostat Fully Open–°F (°C)	203 (95)	203 (95)
Maximum Top Tank Temp–°F (°C)	212 (100)	212 (100)
Minimum Sea Water-to-Boil–°F (°C)	90 (32)	90 (32)
Min. Water Pump In. Press.–In. H_2O (kPa)	00 (00)	00 (00)
Rec'd. Pressure Cap–psi (kPa)	10 (70)	10 (70)
Max. Pressure Drop Across Keel Cooler–psi (kPa)	4 (30)	3 (20)
Engine Coolant Capacity–qt (L)	13 (12)	13 (12)

Electrical System

	12 Volts	24 Volts
Recommended Battery Capacity CCA @ 32 °F (0 °C)–amp	640	570
Max. Starting Circuit Resist.–Ohm	0.0012	0.002
Starter Rolling Current @ 32 °F (0 °C)–amp	780	600

Exhaust System

	1800 rpm	1500 rpm
Exhaust Temperature–°F (°C)	1089 (587)	1049 (565)
Exhaust Gas Flow–ft^3/min (m^3/min)	367 (10.4)	237 (7.0)
Min. Exhaust Pipe Dia. Dry–in. (mm)	2.0 (50)	2.0 (50)
Min. Exhaust Pipe Dia. Wet–in. (mm)	2.5 (65)	2.5 (65)
Max. Allow. Back Press.–In. H_2O (kPa)	30 (7.5)	30 (7.5)
Max. Weight on Turbo–lb (kg)	26.5(12.0)	26.5(12.0)

Fuel System

	1800 rpm	1500 rpm
Fuel Injection Pump–Stanadyne	DB-2	
Governor Type	Mech.	
Governor Regulation–percent	5	
Total Fuel Flow–lb/hr (kg/hr)	214 (97)	205 (93)
Total Fuel Flow–gal/hr (L/hr)	30 (114)	29 (109)
Min. Rec'd. Fuel Line ID–in. (mm)	0.25 (6)	
Min. Rec'd. Fuel Line Size	-5	
Fuel Cons. 'Prime' –lb/hr (kg/hr)	23.4 (10.6)	19.0 (8.6)
Fuel Cons. 'Prime' –gal/hr (L/hr)	3.3 (12.5)	2.7 (10.1)
Max Leak-off Line Press.–psi (kPa)	4 (30)	
Max. Fuel Trans. Pump Suction–ft (m)	10(3.0)	
Max. Fuel Ht. Above Inj.Pump–ft (m)	10(3.0)	
Max. Fuel Inlet Temp. w/o derate–°F (°C)	104 (40)	
Fuel Filter @ 98% Efficiency–Microns	2	

Lubrication System

	1800 rpm	1500 rpm
Oil Press. at Rated Speed–psi (kPa)	50 (345)	45 (311)
Oil Pressure at Low Idle–psi (kPa)	15 (105)	15 (105)

Sea Water System

	1800 rpm	1500 rpm
Sea Water Pump Flow–gal/min (L/min)	22 (84)	18 (70)
Max. Inlet Restriction–In. H_2O (kPa)	120 (30)	100 (25)
Max. Outlet Press–psi (kPa)	20 (135)	20 (135)
Max. Suction Lift–ft (m)	10 (3.0)	10 (3.0)

Performance Data

	1800 rpm	1500 rpm
Rated 'Prime' Power–hp (kW)	62 (46)	54 (40)
10% Overload Engine Power–hp (kW)	67 (50)	59 (44)
Low Idle Speed–rpm	1400	1400
Rated Torque–ft-lb (N•m)	178 (241)	260 (353)
BMEP–psi (kPa)	97 (669)	103 (707)
Friction Power @ Rated Speed–hp (kW)	17 (13)	13 (10)
Smoke @ Rated Speed–Bosch No.	NA	NA

Fuel Consumption

	1800 rpm	1500 rpm
Prime:		
25 % Power– gal/hr (L/hr)	1.1 (4.3)	0.9 (3.4)
50 % Power– gal/hr (L/hr)	1.9 (7.1)	1.5 (5.5)
75 % Power– gal/hr (L/hr)	2.6 (9.9)	2.1 (7.8)
100 % Power– gal/hr (L/hr)	3.3 (12.5)	2.7 (10.1)
10% Overload Power– gal/hr (L/hr)	3.6 (13.5)	3.0 (11.3)

Data based on keel-cooled engine.
All values at rated speed and power with standard options unless otherwise noted.

* Revised Data
Curve 4045DFM7062MG ..... Sheet 2 of 2
April 2004

Marine Engine Emissions Data

Propulsion (labeled, "For applications not subject to EPA or EU emission regulations.")

Engine Model	Power bhp (kW) @ rpm	NO_x g/kWhr	HC g/kWhr	CO g/kWhr	Pm g/kWhr
4045DFM50	85 (63) @ 2500	9.98	0.27	3.55	0.30
4045TFM50	135 (101) @ 2500	13.37	0.20	0.33	0.13
4045TFM50	150 (112) @ 2600	9.75	0.19	0.40	0.16
6068TFM50	175 (130) @ 2400	8.43	0.28	0.44	0.16
6068TFM50	225 (168) @ 2600	9.16	0.20	0.32	0.16
6081AFM01	235 (175) @ 2100				
6081AFM01	300 (224) @ 2200				
6081AFM01	330 (246) @ 2300				
6081AFM01	375 (280) @ 2400	8.31			
6125AFM01	340 (254) @ 1800				
6125AFM01	375 (280) @ 1900				
6125AFM01	400 (298) @ 2000				
6125AFM01	450 (336) @ 2100	9.68	0.15	0.47	0.07

Gen Set (labeled, "Tier-2 Compliant")

Engine Model	Power bhp (kW) @ rpm	NO_x g/kWhr	HC g/kWhr	CO g/kWhr	Pm g/kWhr
4045DFM70	62 (46) @ 1800	✓	✓		
4045TFM75	98 (73) @ 1800	6.33	0.39		0.17
6068TFM76	148 (110) @ 1800	6.05	0.62		0.24
6081AFM75	261 (195) @ 1800	6.45	0.26	1.27	0.12
6125AFM75	402 (300) @ 1800	6.62	0.31	1.06	0.17

Gen Set (labeled, "For applications not subject to EPA or EU emission regulations.")

Engine Model	Power bhp (kW) @ rpm	NO_x g/kWhr	HC g/kWhr	CO g/kWhr	Pm g/kWhr
4045DFM70	54 (40) @ 1500				
4045TFM75	74 (55) @ 1500	8.87	0.48	1.48	0.14
6068TFM76	119 (89) @ 1500	8.72	0.52		0.16
6081AFM75	217 (162) @ 1500	7.10	0.19	2.02	0.10

WHITE NEAR COASTAL TOWING CORP

333 JACKSON AVENUE, SYOSSET, NY 11791
RWHITE4@OPTONLINE.NET

TEL: 516 802-7126 FAX: 516 802-7125

DOLLARS PER TON EMISSIONS

Primary Proposal (#1)

$169,700 / 38.928 saved tons emissions = $4,359.33 / Ton

Primary Proposal (#2)

$180,700 / 38.928 saved tons emissions = $4,641.903 / Ton

***Cost per ton for #2 does not include the savings that would be realized with the addition of the monitoring system. As they are not immediately quantifiable we have worked with the same number of tons saved as in option #1.**

CURRY MARINE
PO BOX 610
NEWPORT OR 97365
541 265-7955

To: White Near Coastal Towing 04/15/08

Att: Jim

Fax: 631 547-0231

TOTAL

2ea Cummins QSK 19 600 HP @ 1800 RPM Marine Engine **$185,700.00**

Includes: Full authority electronic engine
Continuous Duty rating
Keel cooled configuration
24 Volt electrical, starter & alternator
Engine room & pilot house instrument panels
Extension wiring harnesses for instrument panels
Air cleaner
Front engine mount
Marine gear oil cooler
Spin on fuel, lube oil and water filters
Racor crank vent system
Ethernet connection for remote engine monitoring
Sea Command Elite monitoring system
EPA Tier 2 compliant
Standard Commercial Warranty
F.O.B. Newport OR

2ea Optional Cummins Eliminator lube oil centrifuge **$8,200.00**

Engine mounted
No spin on lube filters required

Note: Start up and sea trial at your location not included.

Thank you,

Scott Graf

PERRY H. BEEBE & ASSOCIATES, LLC

Marine Surveyors & Consultants

352 Fairfield Avenue, Gretna, LA 70056
Office & Fax (504) 348-1488
Cell (504) 343-4532, Home (504) 368-4532

SURVEY REPORT

SUBJECT:	Valuation Survey
DATE OF SURVEY:	27 April 2007
VESSEL:	M/V "CAPTAIN ZEKE"
SURVEY REPORT NUMBER:	775-427
AUTHORIZED BY:	Mark C. Shiffer on behalf of Mr. Roy White
FOR THE ACCOUNT OF:	Mark C. Shiffer Independent Marine Surveyor
LOCATION OF VESSEL:	N/A
STATUS OF VESSEL:	N/A
OWNER OF VESSEL:	Mr. Roy White (purchaser)
ATTENDING SURVEY:	Perry H. Beebe Perry H. Beebe & Associates, LLC

DESCRIPTION

TYPE OF VESSEL:	Model Bow Tug (1400 HP rated)
OFFICIAL NUMBER:	629331
GROSS TONS:	88
NET TONS:	70
BUILT:	1980
DIMENSIONS:	68' x 24' x 9' 6" draft (64.0' x 24.0' x 8.6' documented)

MARKET VALUE: $1,100,000.00

REPLACMENT: $2,100,000.00

PERRY H. BEEBE & ASSOCIATES, LLC

Marine Surveyors & Consultants

352 Fairfield Avenue, Gretna, LA 70056
Office & Fax (504) 348-1488
Cell (504) 343-4532, Home (504) 368-4532

775-427 M/V "CAPTAIN ZEKE"

On 24 April 2007, the undersigned was requested by, Mr. Mark Shiffer on behalf of Roy White, to attend the M/V "CAPTAIN ZEKE" for the purpose of determining the general condition and principal characteristics and against these to then enter an opinion as to the vessel's value and suitability for service, for consideration by Owners and for whom it may concern.

THIS IS TO CERTIFY that on 27 April 2007, the undersigned marine surveyor did conduct a **"DESK TOP"** survey.

No determination of structural integrity or inherent stability has been made and no opinion is expressed in that regard.

The undersigned attests that every reasonable effort has been expended to examine the present condition of the subject vessel and her outfit however, Owners should be aware deficiencies might exist in addition to those items detailed in this report.

It should be noted subject vessel was not seen at this time however, under signed did review numerous spec's, exhibits, photographs, diagrams, layout, documentation, and a resent General

Condition survey by Mark C. Shiffer Marine Surveyors, report dated 20 April 2007 and the following details were noted.

GENERAL

Vessel is a typical model bow twin screw tug of all welded steel construction built by Main Iron Works (reported) Houma, Louisiana. Vessel appears in accordance with original lay out, plan, arrangement & scanting without any major or significant structural alterations or damages repairs noted.

Vessel's hull profile presents a straight bow stem, elliptical stern with full bodied single chine midship section, "V" bottom and cutaway stern. Vessel's main deck is arranged with open bow, deck, center superstructure, port and starboard side passageways, open stern deck, raised decking over steering gear.

Vessel's superstructure presents a typical raised two and one half level with auxiliary pilothouse located at aft port corner of Texas Deck. Vessel's main deck perimeter protected by enclosed bulwarks. Bulwarks serviced by freeing ports, which appear to be of adequate size and number.

MACHINERY

Main Engines:

Two (2) General Motors Detroit Diesel engines, model V 16-71 NA, developing 1400 HP @ 1800 RPM, two cycle, sixteen cylinder, natural aspirated, fresh water cooled via; enclosed cooling system. (0 hours since major overhaul)

Reduction Gears:

Two (2) Twin Disc, model MG 518, ratio 648:1

Generators:

Two (2) General Motors Detroit Diesel, model 3-71, driving International generators, rated @ 40KW

Tail Shafts:

Two (2) 5.5" shafts (estimated) typically running through packing glands, strut legs and cutless bearings.

Propellers:

Two (2) 63" x 68" S/S four blade propellers

Kort Nozzles:

Two (2) Type- 37

Rudders:

Two (2) steering rudders

Winch:

One (1) General Motors Detroit Diesel, model 3-71, radiator cooled, air start, PTO, hydraulic transmission driving a double drum, 50,000# with 2000' of 1-14" cable.

Misc.:

Vessel serviced with usually pumps, piping, hydraulics, winches, electrical appliances, electronics, etc.

COMMENTS

Vessel appears to be in above average condition considering the vessel's age and service. Vessel appears to be well maintained with excellent housekeeping evident. Vessel's machinery space and equipment including main engines, auxiliary machinery, shafting, pumps, piping

arrangements, electrical system and equipment appear to be well maintained and in excellent condition. Subject vessel considered suitable for its intended purpose, coastwise and offshore towing.

VALUES

It should be noted in this survey, values were obtained from one (1) or a combination but not limited to the following sources:

- Marine and equipment brokers.
- Shipyards or contractors that construct like vessels, equipment, etc.
- Known recent sales of similar vessels.
- As advertised in Marine equipment sales periodicals.
- The depreciation method, given vessel's age and useful life left, with regards to improvements and general condition of component parts.
- As estimated by the undersigned using the method of material cost, labor cost, overhead, material mark up, total and profit margin.

MARKET VALUE:

A sum of money that a vessel should bring in a competitive and open market under all conditions requisite to a fair sale, the buyer and seller each acting prudently, knowledgeably and assuming the price is not affected by undue stimulus. Implicit in this definition is the consummation of a sale whereby title is passed from seller to buyer under conditions whereby.

- Buyer and seller are typically motivated.
- Both parties are well informed and acting in what they consider their own best interest and...

- A reasonable time is allowed for exposure in the open market and arrangements similar thereto and...
- Payment is made in terms of cash in U.S. dollars or in terms with financial arrangements similar. It should be noted in this survey, values were obtained from one (1) or a combination but not limited to and...
- The price represents the normal consideration for the property sold unaffected by special or creative financing or sales concessions granted by anyone associated with the sale.

MARKET:

In the opinion of this undersigned, subject vessel has a fair current MARKET VALUE, Gulf Coast Area, of approximately, **$1,100,000.00**

REPLACEMENT:

In the opinion of the undersigned, subject vessel has a REPLACEMENT VALUE, Gulf Coast Area, of approximately **$2,100,000.00**

CONCLUSION

I certify to the best of my knowledge and belief that the statements of fact contained in this report are true and correct.

The reported analyses and opinions are limited only by the reported assumptions and limiting conditions, and are my personal, unbiased professional analyses and opinion.

I have no present or prospective interest in the property that is the subject of this report, and I have no personal interest or bias with respect to the parties involved.

My compensation is not contingent upon the reporting of a predetermined value or direction in value that favors the cause of the client, the amount of the value estimate, the attainment of a

stipulated result or the occurrence of a subsequent event.

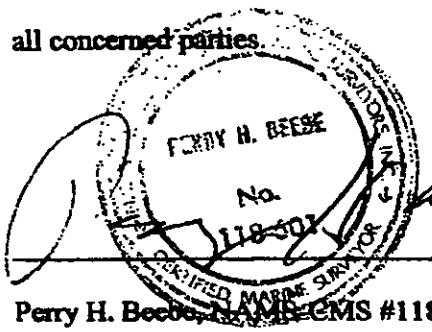
My analysis and opinions were developed, and this report has been prepared, in conformity with the **UNIFORM STANDARDS OF PROFESSIONAL APPRAISAL PRACTICE.**

I have made a personal inspection of the property that is the subject of this report.

No one provided significant professional assistance to the person signing this report.

In accepting this report, it is understood that this survey was performed for general condition purposes only and that no warrant as to the condition, seaworthiness or marketability of subject vessel is expressed or implied.

All of the above findings are actual and the survey was made without prejudice to the rights of all concerned parties.



Perry H. Beebe, NAMS-CMS #118-601

Perry H. Beebe & Associates, LLC

DHS, USCG, CG-1270 (REV. 06-04)

OMB APPROVED
1625-0027

UNITED STATES OF AMERICA

DEPARTMENT OF HOMELAND SECURITY
UNITED STATES COAST GUARD

NATIONAL VESSEL DOCUMENTATION CENTER

CERTIFICATE OF DOCUMENTATION

VESSEL NAME	OFFICIAL NUMBER	IMO OR OTHER NUMBER	YEAR COMPLETED
CAPTAIN ZEKE	629331	71	1980

HAILING PORT	HULL MATERIAL	MECHANICAL PROPULSION
NEW YORK, NY	STEEL	YES

GROSS TONNAGE	NET TONNAGE	LENGTH	BREADTH	DEPTH
88 GRT	70 NRT	64.0	24.0	8.6

PLACE BUILT
HOUMA, LA

OWNERS
WHITE NEAR COASTAL TOWING CORP

OPERATIONAL ENDORSEMENTS
COASTWISE

MANAGING OWNER
WHITE NEAR COASTAL TOWING CORP
12 DUMBARTON DR
HUNTINGTON, NY 11743

RESTRICTIONS
NONE

ENTITLEMENTS
NONE

REMARKS
NONE

ISSUE DATE
JUNE 29, 2007

THIS CERTIFICATE EXPIRES
JUNE 30, 2008

WJB
7390868

Thomas L. Willis
DIRECTOR, NATIONAL VESSEL DOCUMENTATION CENTER

PREVIOUS EDITION OBSOLETE, THIS CERTIFICATE MAY NOT BE ALTERED

WHITE NEAR COASTAL TOWING CORP.
333 JACKSON AVE SUITE 9
SYOSSET, NY 11791
PHONE: 516-802-7126 FAX: 516-802-7125

CXZ VESSEL LOG

VESSEL: CAPT ZEKE DATE: 05-15-08 Thursday TRIP NO.
CAPTAIN : Richard Canty MATE: Al Hartman
ENGINEER: JJ Hand DECKHAND: Isaiah S.
DECKHAND: TANKERMAN:

TIME	LOG ENTRY
0000	Secured at Mays Ship float. Sby for tide.
0745	U/w for Jersey City, NJ
0945	Secured at Eastern Terminal, Jersey City, NJ
2045	U/w for Erie Basin
2320	Secured at Erie Basin
2340	U/w l/t for Gowanus
2355	Made up to barge "130" at 25th st.
2400	U/w w/"130" to Hamilton Ave.

Representative Page from log. Original on file

TERRANCE J. STEVENSON

CAPTAIN'S SIGNATURE

WHEELHOUSE PRE-SAIL CHECKLIST (33 CFR 164.80)

X VHF RADIO(S)	X GPS/LORAN	X DEPTH INDICATOR	X RADAR(S)
X SEARCH LIGHTS	X NAVIGATION LIGHTS	X WHITSTLE	X COMPASS
X STEERING SYSTEM	X JOY STICKS/WHEEL	X MORSE CONTROLS	X ENGINE GUAGES
X ENGINE ALARMS	X GENERAL ALARM	X RUDDER INDICATOR	X NTM':S
X CHARTS UPDATED	X PUBLICATION UPDATED	X TOWLINES/WIRE	X AUTO PILOT/GYRO

ATTACHMENT A

AGREEMENT ON TERMS OF DISCUSSION

The Port Authority's receipt or discussion of any information (including information contained in any proposal, vendor qualification, ideas, models, drawings, or other material communicated or exhibited by us or on our behalf) shall not impose any obligations whatsoever on the Port Authority or entitle us to any compensation therefore (except to the extent specifically provided in such written agreement, if any, as may be entered into between the Port Authority and us). Any such information given to the Port Authority before, with or after this Agreement on Terms of Discussion ("Agreement"), either orally or in writing, is not given in confidence. Such information may be used, or disclosed to others, for any purpose at any time without obligation or compensation and without liability of any kind whatsoever. Any statement which is inconsistent with this Agreement, whether made as part of or in connection with this Agreement, shall be void and of no effect. This Agreement is not intended, however, to grant to the Port Authority rights to any matter, which is the subject of valid existing or potential letters patent. The foregoing applies to any information, whether or not given at the invitation of the Authority.

Notwithstanding the above, and without assuming any legal obligation, the Port Authority will employ reasonable efforts, subject to the provisions of the Authority's Freedom of Information Resolution adopted by its Committee on Operations on August 13, 1992, which may be found on the Authority website at *http://www.panynj.gov/AboutthePortAuthority/ContactInformation/foi_policy.html*, not to disclose to any competitor of the undersigned, information submitted which are trade secrets or is maintained for the regulation or supervision of commercial enterprise which, if disclosed, would cause substantial injury to the competitive position of the enterprise, and which information is identified by the Proposer as proprietary, which may be disclosed by the undersigned to the Port Authority as part of or in connection with the submission of a proposal.

White Bear Coastal
(Company)

[signature]
(Signature)

Pres.
(Title)

4/17/2008
(Date)

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DO NOT RETYPE.

Attachment 5 – Bid Package & Contract Language Examples

SECTION 01 13 55.00 18

AIR EMISSIONS REQUIREMENTS
(nyd 09)

PART 1 GENERAL

1.1 BACKGROUND

The Contractor shall comply with the air emissions requirements of this section which are intended to ensure compliance with the Federal Clean Air Act and limit the emission of Nitrogen Oxides (NOx)produced by the combustion of fossil fuels.

1.2 AIR EMISSIONS CONSULTANT (AEC)

The Contractor shall retain an independent firm having a minimum of 3 years of experience in calculating air emissions for equipment in the utility, process, construction or manufacturing industries to assist the Contractor in fulfilling the requirements of this section.

1.3 NOx EMISSIONS LIMIT

a. The Contractor shall not adversely affect the attainment plans established by the States of New York and New Jersey. The Government has allocated Air Quality Units for this contract; therefore the Contractor is limited to the following allowable NOx emissions per calendar year unless the Contractor is able to obtain additional Air Quality Units at its own expense.

	Allocated Air Quality Units (NOx Emissions Allowable Limit - Tons)
Calendar Year	
2010	20.2
2011	34.6

b. NOx emissions shall be calculated for all marine based equipment, with a maximum horsepower output of greater than or equal to **25**, operated in the area as shown on the map at the end of this Section. Emissions from the following equipment, including their auxiliary engines, shall be calculated: dredges, tugs, scows, drill boats, survey boats, supply boats, crew boats, tenders and other water based equipment associated with the Contractor's dredging operation. **Emissions shall be calculated for activities directly related to the performance of the contract.**

c. The Contractor is responsible for ensuring that contract emissions do not exceed the calendar year Allocated Air Quality Units (NOx Emissions Allowable Limit - Tons) for NOx in a given calendar year. Once the Contractor reaches Allocated Air Quality Units (NOx Emissions Allowable

Limit - Tons) in a given calendar year, all water based equipment must cease operations for the remainder of the calendar year unless the Contractor is able to obtain additional Air Quality Units at its own expense. The Contractor will not be entitled to additional time or money in the event that the Contractor exhausts the Allocated Air Quality Units (NOx Emissions Allowable Limit - Tons) made available by the Government and must stop work.

d. The Government has developed an Air Emissions Calculator that must be used by the Bidder during the preparation of its bid to ensure that NOx emissions of all equipment associated with the contract are within the calendar year Allocated Air Quality Units (NOx Emissions Allowable Limit - Tons). The calculator may be downloaded from fedteds.gov web site with the plans and specs.

1.4 AIR EMISSIONS SUBMITTAL REQUIREMENTS

1.4.1 The Contractor shall submit ten (10) copies of the following information within **Five (5) calendar days** of being notified of being the apparent low bidder.

A. The qualifications of the Contractor's Air Emissions Consultant (AEC).

B. Air Emissions Calculator

The Contractor **shall** use the air emissions calculator to estimate the emissions of NOx and provide printed versions of all emission calculation tabs.

The following is provided to describe the calculator and the input data required.

List all engines to be used on the contract on a separate line.

The calculator requires knowledge of the equipment to be used on the project, including the engine horsepower, year of manufacture (its model year), and its regulatory "Tier" level (i.e., Tier 1, Tier 2).

The calculator consists of **four** worksheets within a Microsoft® Excel workbook.
The **four** worksheets are:

- Instructions
- **Dredge Inputs and Calcs**
- **Vessel Input and Calcs**
- Emission Summary

The Instruction Worksheet provides for descriptions of the field names and the action required to input data on the Input and Calculations Worksheet.

Input and Calculations Worksheet: **These worksheet are** where the Contractor inputs information about the equipment that is or will be operating for this contract, such as the dredge engine type and name, "Tier" level, horsepower, NOx Control Method and expected number of hours of operation. Operating hours are those hours that the diesel engine is actually running or operating (not the total time spent onsite) and will be entered for each month of work. Each engine shall be entered on a separate line. Data is only entered on this worksheet; no entries are to be made on the Emission

Summary worksheet.

If an emission control technology such as a fuel emulsion or a catalytic converter is used, or will be used, to reduce NOx emissions, there is a column on the worksheet, entitled NOx Control Method, to incorporate the reduction that the technology is recognized to achieve. The NOx emission control systems effectiveness must be approved by the U.S. Environmental Protection Agency (EPA).

This worksheet also calculates the estimated emissions from the equipment information entered.

The Emission Summary worksheet presents the emission estimates by year. This worksheet is provided to help the Contractor adjust the technology or timing of their dredging operations to ensure that the estimated NOx emissions do not exceed the Allocated Air Quality Units in a given calendar year, thereby indicating whether the projected emissions are at an acceptable level.

C. Certification from the independent Air Emissions Consultant stating the following:

1)That the information provided in 1.4.1.A and 1.4.1.B is accurate;

2)That the construction schedule developed by the Contractor with its' associated marine equipment is within the calendar year Allocated Air Quality Units (NOx Emissions Allowable Limit - Tons); and

3)That any technologies, techniques, or methods identified to reduce emissions are approved by the U.S. Environmental Protection Agency (EPA).

D. Information as identified in Section 00 80 00.00 18, paragraph 1.45.**C**, Air Emissions Information to be submitted by the Contractor.

E. Should the Contractor choose to provide additional Air Quality Units at its own expense for this contract, the Contractor must provide evidence that these additional Air Quality Units are available to the Contractor, are appropriate for use on this contract for the calendar year they are to be used and can be obtained by the Contractor within 35 calendar days of being notified of being the apparent low bidder.

1.4.2 The Contractor shall submit the following information within 35 calendar days of being notified of being the apparent low bidder. If there are no changes to Contractor's 5 calendar day submission, the Contractor shall resubmit the information noting on the cover letter that there were no changes to the respective items.

A. Air Emissions Calculator (described in 1.4.1.B above).

B. Certification from an independent Air Emissions Consultant stating the following:

1)That the information provided in 1.4.2.A is accurate;

2)That the construction schedule developed by the Contractor with its' associated equipment is within the calendar year Allocated Air Quality Units (NOx Emissions Allowable Limit - Tons); and

3)That any technologies, techniques, or methods identified to reduce

emissions are approved by the U.S. Environmental Protection Agency (EPA).

C. Should the Contractor choose to provide additional Air Quality Units for this contract at its own expense, the Contractor must provide documentation that the Air Quality Units are appropriate for use on this contract for the calendar year they are to be used and provide evidence in the form of a contract or agreement, that these additional Air Quality Units are available for use by the Contractor by the 35th calendar day after being notified of being the apparent low bidder.

1.4.3 Information to be provided monthly during the execution of the contract.

A.Air Emissions Calculator and Narrative

1)The Air Emissions calculator and Narrative shall be updated monthly and submitted electronically. Updated calculations, narrative and other information associated with this task are due 10 days after the end of the month.

2)The Air Emissions Calculator shall be updated monthly to reflect actual hours worked, equipment actually used, **and daily runtime per reportable engine, and other applicable information, on the data logging sheet provided at the end of this section**; and actual emission control methods used during the previous month; and

3)Revise future emissions to reflect future hours of work remaining, equipment and emission control method adjustments.

4)A narrative explaining the changes from the baseline (Air Emissions Calculator submitted within 30 calendar days after award) to the updated Air Emissions Calculator shall be submitted.

B.Certification from an independent Air Emissions Consultant stating the following:

1)That the information provided in 1.4.3.A is accurate;

2)That the construction schedule developed by the Contractor with its' associated equipment is within the calendar year Allocated Air Quality Units (NOx Emissions Allowable Limit - Tons); and

3)That any technologies, techniques, or methods used to reduce emissions are approved by the U.S. Environmental Protection Agency (EPA).

C. If after the NTP is issued and during the execution of the Contract the Contractor chooses to provide additional Air Quality Units at its own expense, the Contractor must provide, **at least two weeks** prior to the use of the Air Quality Units, documentation that these additional Air Quality Units are appropriate for use on this contract for the calendar year they are to be used.

1.5 OPERATIONAL MONITORING, RECORDKEEPING, AND REPORTING

The Contractor shall be required to install appropriate instrumentation (data loggers) on the dredges to record and measure as a minimum engine hours of operation, , engine speed, engine temperature, and fuel use rates. The Contractor shall download data from the data loggers and

provide the information to the COR on a quarterly basis. The Contractor shall provide access to the Government and its contractors to observe the installation, operation, and download of data from the data loggers. The Contractor shall maintain the data loggers. Should a data logger fail, the Contractor shall notify the COR and maintain records manually on an hourly basis until the data logger is repaired.

The Contractor shall maintain daily records on engines that are not equipped with a data logger (i.e., engines other than dredge engines). These records will be provided to the Government on a regular basis. The records will be maintained as part of the Contractor's daily report and provided to the Government on that basis (i.e., with the same frequency as the daily report). An example of the log sheet for keeping these required records is attached at end of this section.

1.6 IN-USE TESTING OF DREDGING EQUIPMENT

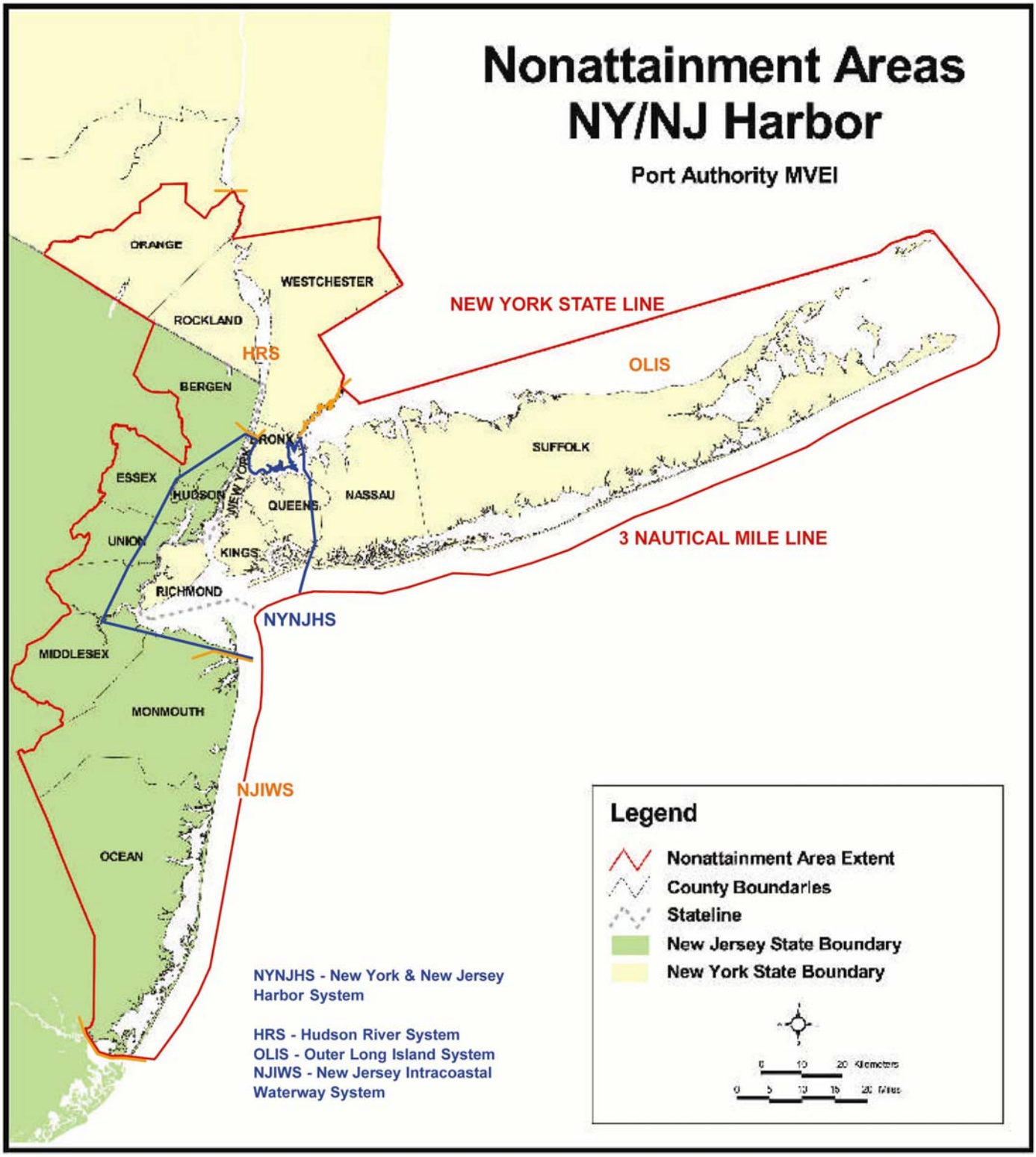
The Contractor shall cooperate with and assist the Government and its contractor(s) in obtaining measurements of emissions from the major engines powering the dredge(s) and associated equipment. The Government will be responsible for the testing program and the required equipment, while the Contractor will be responsible for making such minor physical modifications to the dredging equipment as may be necessary for successful emission testing. (Such modifications may include the installation of sampling ports on exhaust ducts or mounting brackets to support measuring equipment.) The Government and its emission testing contractor(s) will provide specific instructions on any physical modifications the Contractor is required to make after the issuance of the NTP.

The Contractor shall notify the COR of any plans to substitute or add major pieces of equipment to allow the Government to determine whether additional emission testing will be warranted. Engines with test equipment attached shall not be removed from the contract area without written consent from the COR.

1.7 MEASUREMENT AND PAYMENT

No separate payment shall be made for this item.

-- End of Section --


Nonattainment Areas
NY/NJ Harbor
Port Authority MVEI
ORANGE
WESTCHESTER
ROCKLAND
HRS
BERGEN
NEW YORK STATE LINE
OLIS
BRONX
SUFFOLK
ESSEX
HUDSON
NEW YORK
QUEENS
NASSAU
UNION
KINGS
3 NAUTICAL MILE LINE
RICHMOND
NYNJHS
MIDDLESEX
MONMOUTH
NJIWS
OCEAN
NYNJHS - New York & New Jersey Harbor System
HRS - Hudson River System
OLIS - Outer Long Island System
NJIWS - New Jersey Intracoastal Waterway System
Legend
Nonattainment Area Extent
County Boundaries
Stateline
New Jersey State Boundary
New York State Boundary
0 10 20 Kilometers
0 5 10 15 20 Miles

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SAN2 Contract 10 Vessel Data Logging Sheet Page 7

THE PORT AUTHORITY OF NY & NJ

MONTH: _____

YEAR: _____

Page: _____ of _____

Vessel Name:

	Engine Information				Activity Information			
Date	Engine Name	Engine Type (Propulsion, Auxiliary, etc.)	Daily Runtime (hours)	Daily Fuel Consumption (tons or gallons)	# of Daily Trips to HARS or Reef	Average Transit Time Within 3-Nautical Mile Line (hours)	Average Loaded Speed (knots)	Average Unloaded Speed (knots)

U.S. Army Corps of Engineers - New York District

SAN2 Contract 10 Dredge Data Logging Sheet Page 8

MONTH: ____________________

YEAR: ____________________

Page: of __________ __________

Dredge/Barge Name:

	Engine Information				**Activity Information**			
Date	Engine Name	Engine Type (Main, Aux, Pump, etc)	Daily Runtime (hours)	Daily Fuel Consumption (tons or gallons)	Sediment Type	Daily Dredged Volume (cubic yards)	Scow Capacity (cubic yards)	Daily Number of Scows Filled

Emissions have been estimated using project planning information developed by the New York District, consisting of anticipated equipment types and estimates of the horsepower and operating hours of the diesel engines powering the equipment. In addition to this planning information, conservative factors have been used to represent the average level of engine load of operating engines (load factors) and the average emissions of typical engines used to power the equipment (emission factors). The basic emission estimating equation is the following:

$$\mathbf{E = hrs \times LF \times EF}$$

Where:

E = Emissions per period of time such as a year or the entire project.
hrs = Number of operating hours in the period of time (e.g., hours per year, hours per project).
LF = Load factor, an estimate of the average percentage of full load an engine is run at in its usual operating mode.
EF = Emission factor, an estimate of the amount of a pollutant (such as NO_x) that an engine emits while performing a defined amount of work.

In these estimates, the emission factors are in units of grams of pollutant per horsepower hour (g/hphr). For each piece of equipment, the number of horsepower hours (hphr) is calculated by multiplying the engine's horsepower by the load factor assigned to the type of equipment and the number of hours that piece of equipment is anticipated to work during the year or during the project. For example, a crane with a 250-horsepower engine would have a load factor of 0.43 (meaning on average the crane's engine operates at 43% of its maximum rated power output). If the crane were anticipated to operate 1,000 hours during the course of the project, the horsepower hours would be calculated by:

$$\mathbf{250\ horsepower \times 0.43 \times 1{,}000\ hours = 107{,}500\ hphr}$$

The emissions from diesel engines vary with the age of an engine and, most importantly, with when it was built. Newer engines of a given size and function typically emit lower levels of pollutants than older engines. The NO_x emission factors used in these calculations assume that the equipment pre-dates most emission control requirements (known as Tier 0 engines in most cases), to provide a reasonable "upper bound" to the emission estimates. If newer engines are actually used in the work, then emissions will be lower than estimated for the same amount of work. In the example of the crane engine, a NO_x emission factor of 9.5 g/hphr would be used to estimate emissions from this crane on the project by the following equation:

$$\mathbf{\frac{107{,}500\ hphr \times 9.5\ g\ NO_x/hphr}{453.59\ g/lb \times 2{,}000\ lbs/ton} = 1.1\ tons\ of\ NO_x}$$

As noted above, information on the equipment types, horsepower, and hours of operation associated with the project have been obtained from the project's plans and represent current best estimates of the equipment and work that will be required. Load factors have been obtained from various sources depending on the type of equipment. Marine engine load factors are primarily from a document associated with the New York and New Jersey Harbor Deepening Project (HDP): "Marine and Land-Based Mobile Source Emission Estimates for the Consolidated Schedule of 50-Foot Deepening Project, January 2004," and from EPA's 1998 Regulatory Impact Analysis (RIA): "EPA Regulatory Impact Analysis: Control of Commercial Marine Vessels." Land-side nonroad equipment load factors are from the documentation for EPA's NONROAD emission estimating model, "Median Life, Annual Activity, and Load Factor Values for Nonroad Engine Emissions Modeling, EPA420-P-04-005, April 2004."

Emission factors have also been sourced from a variety of documents and other sources depending on engine type and pollutant. The NO_x emission factors for marine engines have been developed primarily from EPA documentation for the Category 1 and 2 standards (RIA, "Control of Emission from Marine Engines, November 1999) and are consistent with emission factors used in documenting emissions from the HDP, while the VOC emission factors for marine engines are from the Port Authority of New York and New Jersey's (PANYNJ) "2014 Multi-Facility Emissions Inventory" which represent the range of marine engines operating in the New Jersey harbor and coastal region in terms of age and regulatory tier level. Nonroad equipment NO_x emission factors have been derived from EPA emission standards and documentation, while the nonroad VOC emission factors have been based on EPA's Diesel Emissions Quantifier (DEQ, accessed at: *www.epa.gov/cleandiesel/quantifier/*), run for moderately old equipment (model year 1995). On-road vehicle emission factors have also been developed from the DEQ, assuming a mixture of Class 8, Class 6, and Class 5 (the smallest covered by the DEQ) on-road trucks.

Greenhouse gas (GHG) emissions are represented as CO_2, which makes up by far the greatest amount of GHG emitted from the diesel-fueled engines that will be used on the project. GHG emissions are calculated in the same manner as the emissions discussed above, except that GHG emissions are expressed as metric tons (tonnes) instead of short tons to be consistent with standard GHG reporting methodology. The CO_2 emission factors were obtained from the most recent emissions inventory released by the PANYNJ, using the average nonroad equipment and on-road heavy-duty diesel vehicle emission factors.

As noted above, the emission factors have been chosen to be moderately conservative so as not to underestimate project emissions. Actual project emissions will be estimated and tracked during the course of the project and will be based on the characteristics and operating hours of the specific equipment chosen by the contractor to do the work.

The following pages summarize the estimated emissions of pollutants relevant to General Conformity, NO_x, VOC, $PM_{2.5}$, SO_2, and CO_2 in sum for the project and by calendar year based on the schedule information also presented (in terms of operating months per year). Following this summary information are project details including the anticipated equipment and engine information developed by the New York District, the load factors and emission factors as discussed above, and the estimated emissions for the project by piece of equipment.

USACE - New York District
NAN - ABU Sandy-Related Projects
General Conformity-Related Emission Estimates & Greenhouse Gas Estimates
Emission Estimates & Supporting Information - FIMP 5-May-16
DRAFT

General Conformity-applicable emissions per calendar year based on project duration

	Estimated Emissions, tons per year								
Pollutant	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**
NO_x	0.0	182.8	241.3	204.8	131.6	124.3	117.0	102.4	14.6
VOC	0.0	6.9	9.1	7.7	5.0	4.7	4.4	3.9	0.6
$PM_{2.5}$	0.0	9.5	12.5	10.6	6.8	6.5	6.1	5.3	0.8
SO_2	0.0	0.11	0.14	0.12	0.08	0.07	0.07	0.06	0.01

GHG emissions per calendar year based on project duration

	Estimated Emissions, tonnes per year								
GHG	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**
CO_2	0.0	11,055	14,593	12,382	7,960	7,517	7,075	6,191	884

Supporting information and data

				Shore crew*	
	Dredge	**Auxiliary**	**Pumps**	**Dozer**	**Front-end loader**
Horsepower	8,000	600	2,000	310	25
Load factors	0.66	0.40	0.80	0.59	0.59
Emission factors					
NO_x	9.7	7.3	4.9	9.5	9.5
VOC	0.37	0.20	0.20	0.19	0.19
$PM_{2.5}$	0.51	0.29	0.29	0.16	0.16
SO_2	0.005	0.005	0.005	0.005	0.005
CO_2	1.06	1.27	1.27	1.21	1.21

* Per NYDEC finding, land-side emissions are accounted for in the applicable SIP and are therefore not considered in the General Conformity evaluation.

Project Duration and Working Months per Year

Cu yds	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**Total Months Dredging**
6,440,000	0	3	6	6	6	6	6	6	1	40

Due to environmental and ozone season windows in place for the NY projects, there will be a maximum of 6 months of dredging per year for the NY projects Shore-side work proceeds when dredging occurs. Combination of environmental and ozone season windows results in no dredging during April through September each year.

USACE - New York District

NAN - ABU Sandy-Related Projects

General Conformity Related Emission Estimates & Greenhouse Gas Estimates

Methodology

DRAFT 5-May-16

The emission estimating methodology is designed to be conservatively high in terms of calculated horsepower-hours.
Operating parameters and schedules may be revised as project plans are developed in more detail.

Equipment & Engines to be Used	Nominal horsepower	Operating hours/day	Operating days/year	Load Factor	Emission Factors NOx	VOC	$PM_{2.5}$	CO	SO_2
						g/hphr			
Dredge & related									
Dredge engines	8,000	22	assume 30 x 12	0.66	9.7	0.37	0.51	1.06	0.0050
Pump engines	2,000	22	assume 30 x 12	0.80	4.9	0.20	0.29	1.27	0.0048
Dredge auxiliary engines	600	22	assume 30 x 12	0.40	7.3	0.20	0.29	1.27	0.0048
Dozer	310	22	assume 30 x 12	0.59	9.5	0.19	0.16	1.21	0.0050
Loader (working dredged material)	25	22	assume 30 x 12	0.59	9.5	0.19	0.16	1.21	0.0050
Groin construction									
Loader (groin construction)	26	10	assume 30 x 12	0.59	9.5	0.19	0.16	1.21	0.0050
Excavator	23	10	assume 30 x 12	0.59	9.5	0.19	0.16	1.21	0.0050
Barge aux.	20	10	assume 30 x 12	0.40	7.3	0.20	0.29	1.27	0.0048

Terms

Horsepower	hp	Total horsepower of type of dredge likely to be used on projects
Operating hours per day	hrs/day	Operating hours per day based on `
Operating days per year	days/yr	Estimated number of operating days per year based on volume of work, expected production rate, and schedule limitations resulting from environmental windows
Load factor	LF	Load factors from NONROAD model tables for similar equipment
Emission factors	EF	NOx EF derived from emission standards for similar engine types, g/hp-hr
	e.g., dredge Dodge Island equipped with Tier 0 propulsion engines, Tier 2 pump engines	

Calculations

Emissions calculated using the following equation:

Emissions, tons per year = (hp x hrs/day x days/yr x LF x EF)/(453.59 g/lb x 2,000 lbs/ton)

CO_2 emissions, tonnes per year = (hp x hrs/day x days/yr x LF x EF)/1,000,000 g/tonne

USACE - New York District
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General Conformity Related Emission Estimates & Greenhouse Gas Estimates
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VOC, $PM_{2.5}$, CO emission factors:

2010 PANYNJ Emissions Inventory, marine vessel emisison factors used as a reasonable surrogate for the variety of vessels in use in the New York/New Jersey area in the absence of specific information regarding the vessels to be used on any specific project.

		VOC	$PM_{2.5}$	CO
Propulsion (g/kWhr)	Table 5.35	0.50	0.68	1.42
Propulsion (g/hphr)		0.37	0.51	1.06
Auxiliary (g/kWhr)	Table 5.35	0.27	0.39	1.70
Auxiliary (g/hphr)		0.20	0.29	1.27

Off-road: DEQ results for representative 600 hp crawler tractor (MY 1995)

Default hrs/year: 936 Horsepower: 600

Emissions, short tons per year:	0.1925	0.1667	1.2671
Estimated EF, g/hphr:*	0.183	0.16	1.21
Conversion factor	1.053 VOC/THC		
Estimated VOC EF, g/hphr:	0.19		

* Hydrocarbons provided by DEQ converted to VOC

Assumed load factor for off-road: 0.59 (from PANYNJ Emissions Inventory)

Conversion factor 0.7457 kW/hp g/kWhr x kW/hp = g/hphr

SO_2 emission factors:

Quantification of emissions from ships associated with ship movements between ports in the European Community
Final Report, July 2002, Entec UK Limited. Chapter 2

	g/kWhr	g/hphr	g S/hphr	g SO_2/hphr
Medium and high speed auxiliary, distillate fuel (Tal	217	162	0.0024	0.0048
Medium and high speed propulsion, distillate fuel (1	223	166	0.0025	0.0050

(maneuvering)

ULSD as of 2014: 15 g S/1,000,000 g fuel

Land-side diesel engines exhibit similar fuel consumption characteristice as marine propulsion engines,* so the same SO2 EFs are used.

*Exhaust and Crankcase Emission Factors for Nonroad Engine Modeling - Compression-Ignition
EPA-420-R-10-018 NR-009d July 2010
Table C1. Average Emission Test Results for 1988 to 1995 Mod 0.367 lb fuel/hphr
From the text: "Due to lack of data, the brake-specific fuel consumption (BSFC) for the 1988-and-later pre-control (Tier 0) engines is used for all engines, both earlier pre-control engines and later engines subject to emissions standards."
Converted to g/hphr: 167 g/hphr

CO_2 emission factors

Nonroad	571 g/hphr	The nonroad engine CO2 emission factor is the average of nonroad equipment in the PANYNJ 2014 emissions inventory, representative of nonroad engines in general.
Onroad	1812 g/mi at 35 mph	Onroad emission factor is the heavy-duty truck emisison factor in the PANYNJ 2014 emissions inventory.