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:

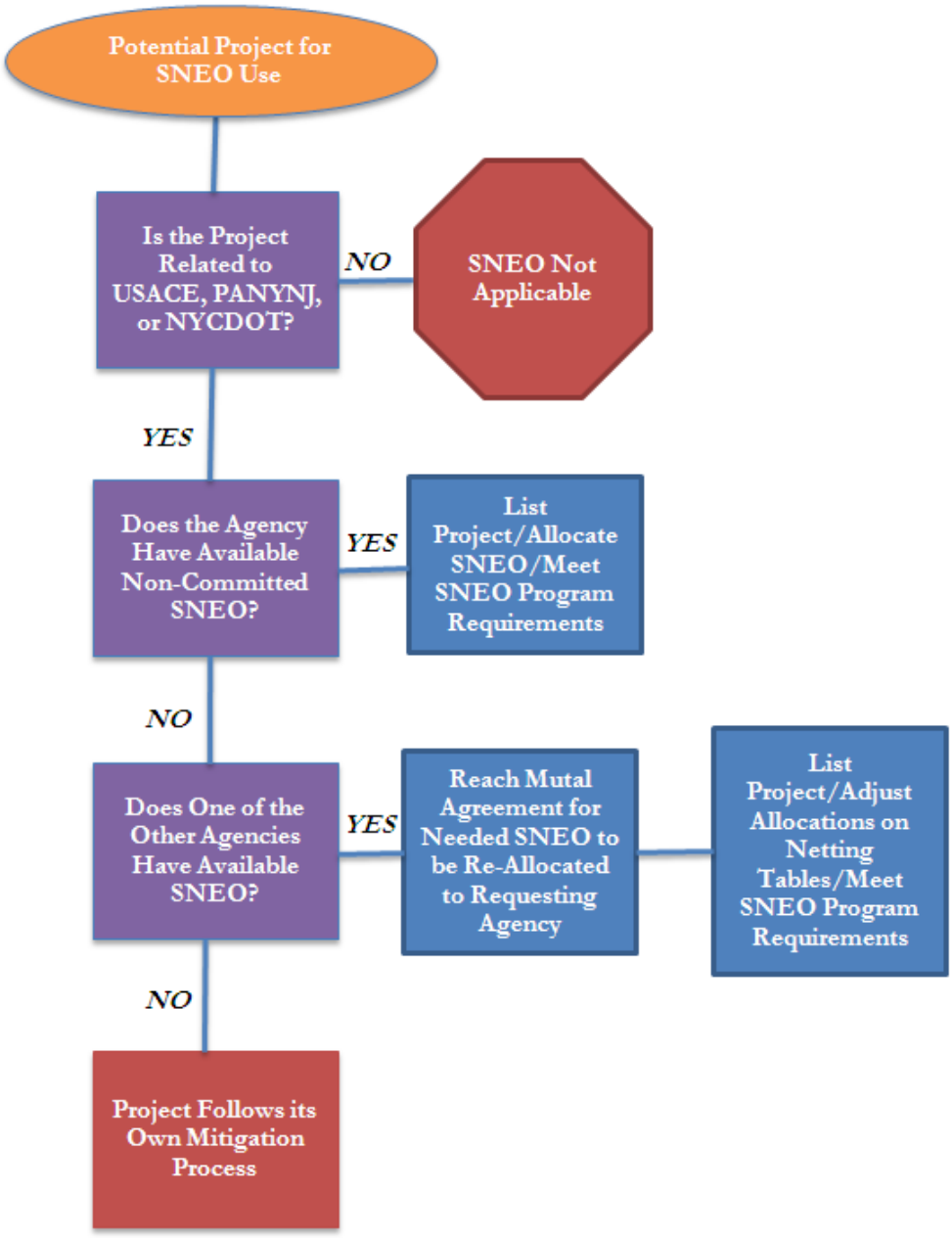
- Proposed program SNEO premise
- SNEO distribution agreement
- Project identification and inclusion
- Determination of SNEOs
- Quantification of project emissions to be offset
- Quantification of available emission offset
- Netting of emissions and offsets to generate SNEOs
- Tracking and reporting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



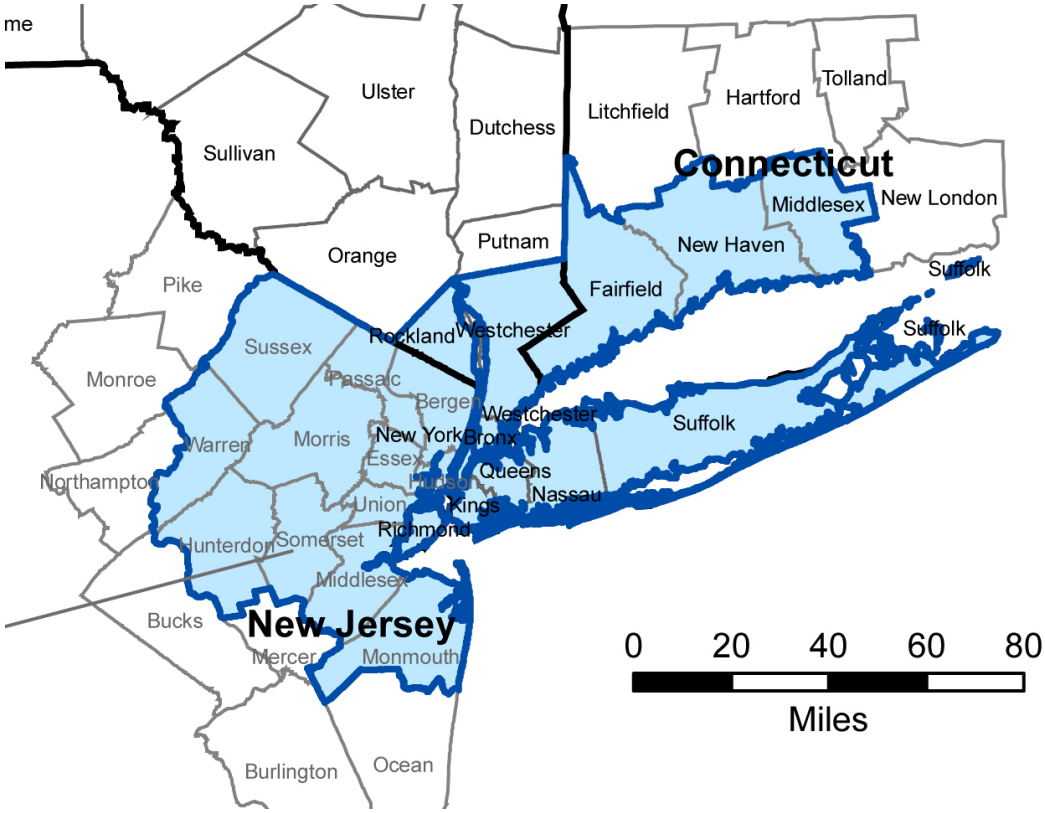
The RAT, chaired by the USACE, will continue to serve as the technical oversight group for the SNEO program by confirming that acceptable methods are employed, double counting is avoided, providing technical and regulatory expertise, and ensuring that transparency is maintained throughout the program.

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

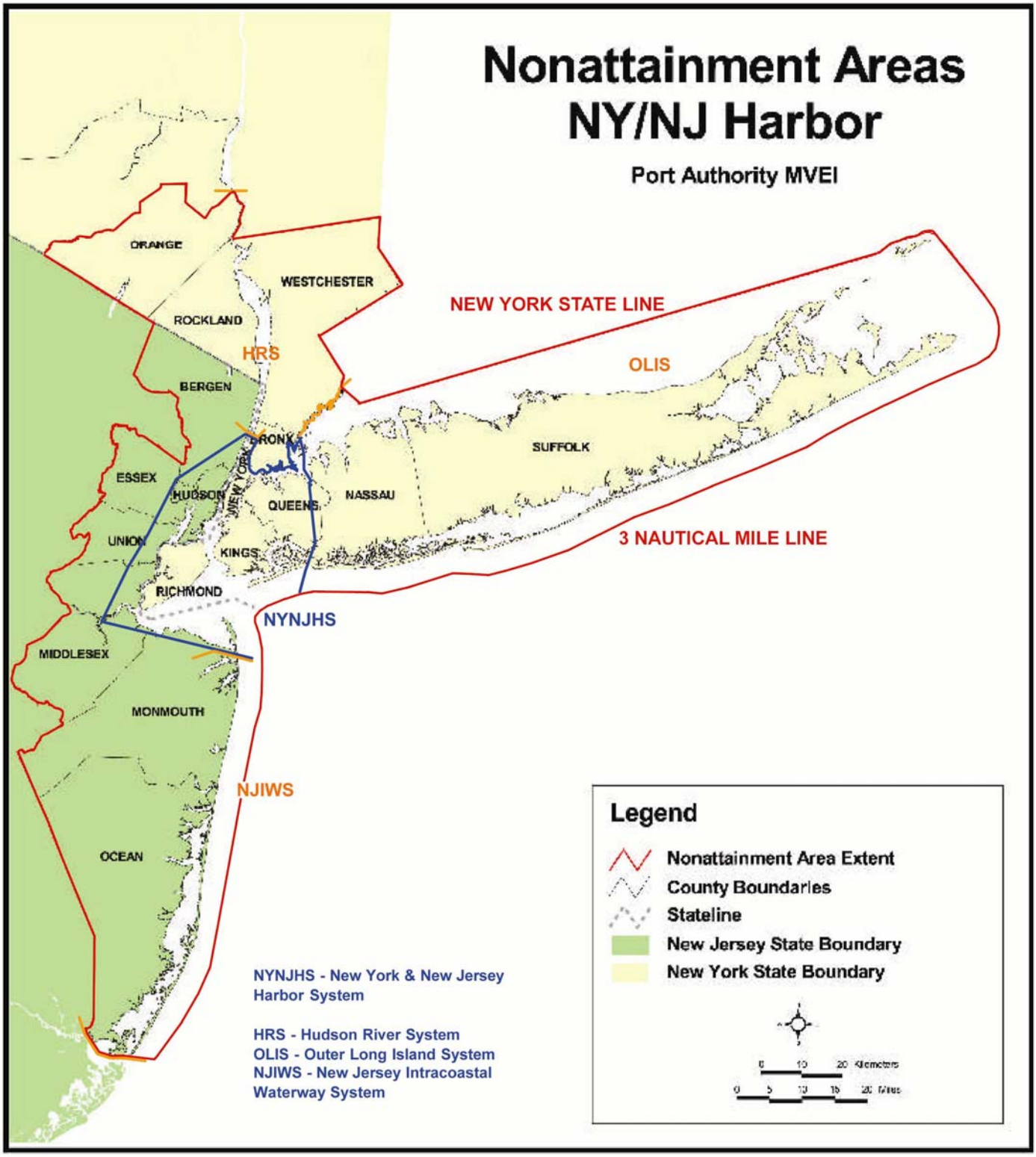
The Contractor shall cooperate with and assist the Government and its contractor(s) in obtaining measurements of emissions from the major engines powering the dredge(s) and associated equipment. The Government will be responsible for the testing program and the required equipment, while the Contractor 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

THE PORT AUTHORITY OF NY & NJ

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