US Army Corps of Engineers®
New York District

FIRE ISLAND TO MONTAUK POINT (FIMP), NY CSRM

NONSTRUCTURAL PILOT PROJECT

FINAL SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT

APPENDIX B: CAA AND RONA

OCTOBER 2025

Unique Identification Number: SEAX-202-00-E3P-1751991541

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:

E = hrs x LF x 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 = Emissions factor, an estimate of the amount of a pollutant (such as NOx) 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:

250 horsepower x 0.43 x 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 most pollutants than older engines. The emission factor 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 NOx emission factor of 9.5 g/hphr would be used to estimate emissions from this crane on the project by the following equation:

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

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. 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. Nonroad equipment NOx and other emission factors have been derived from EPA emission standards and documentation. As noted above, the emission factors have been chosen to be moderately conservative so as not to underestimate project emissions. Equipment turnover by the time the project is undertaken will likely result in newer equipment performing the work than assumed in this analysis, meaning the emissions presented in this analysis are likely higher than will actually occur.

The following pages summarize the estimated emissions for the project 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.

Summary of Emissions (in tons) for all years of construction:

	NO_x	VOC	SO_2	$PM_{2.5}$	CO
2027	22.8153	0.45631	0.01201	0.38426	2.90595
2028	4.79474	0.09589	0.00252	0.08075	0.6107

Breakdown of Total Emissions (in tons) by Structure Type:

	NO_x	VOC	SO_2	$PM_{2.5}$	CO
Crawlspace Structure Type (48 total)					
2027	14.546313	0.290926	0.007656	0.244991	1.852741
2028	2.947436	0.058949	0.001551	0.049641	0.375410
Slab on Grade Structure Type (20 total)					
2027	7.519868	0.150397	0.003958	0.126650	0.957794
2028	1.347901	0.026958	0.000709	0.022701	0.171680
Basement Subgrade Structure Type (3 total)					
2027	0.749103	0.014982	0.000394	0.012616	0.095412
2028	0.499402	0.009988	0.000263	0.008411	0.063608

					Emission Factors					Calculated Emissions				
Equipment Type	Hours	Horsepower	Load Factor	hphr	NOx EF	VOC EF	SO2 EF	PM 2.5 EF	CO EF	Nox	VOC	SO2	PM 2.5	CO
Compactor	26.5	250	0.43	2848.75	9.5	0.19	0.005	0.16	1.21	0.027063	0.000541	1.42438E-05	0.000456	0.003447
Compressor	27.2	100	0.43	1169.6	9.5	0.19	0.005	0.16	1.21	0.011111	0.000222	0.000005848	0.000187	0.001415
Compressor	54.5	75	0.43	1757.625	9.5	0.19	0.005	0.16	1.21	0.016697	0.000334	8.78813E-06	0.000281	0.002127
Compressor	26.5	125	0.43	1424.375	9.5	0.19	0.005	0.16	1.21	0.013532	0.000271	7.12188E-06	0.000228	0.001723
Concrete Saw	8	50	0.59	236	9.5	0.19	0.005	0.16	1.21	0.002242	4.48E-05	0.00000118	3.78E-05	0.000286
Crane	3.1	300	0.43	399.9	9.5	0.19	0.005	0.16	1.21	0.003799	7.6E-05	1.9995E-06	6.4E-05	0.000484
Crane	1.8	300	0.43	232.2	9.5	0.19	0.005	0.16	1.21	0.002206	4.41E-05	0.000001161	3.72E-05	0.000281
Dozer	0.4	250	0.59	59	9.5	0.19	0.005	0.16	1.21	0.000561	1.12E-05	0.000000295	9.44E-06	7.14E-05
Excavator	9.4	300	0.59	1663.8	9.5	0.19	0.005	0.16	1.21	0.015806	0.000316	0.000008319	0.000266	0.002013
Generator	17.2	7.5	0.43	55.47	9.5	0.19	0.005	0.16	1.21	0.000527	1.05E-05	2.7735E-07	8.88E-06	6.71E-05
Off-road Truck	8	200	0.59	944	9.5	0.19	0.005	0.16	1.21	0.008968	0.000179	0.00000472	0.000151	0.001142
Off-road Truck	55.2	300	0.59	9770.4	9.5	0.19	0.005	0.16	1.21	0.092819	0.001856	0.000048852	0.001563	0.011822
Off-road Truck	9.4	400	0.59	2218.4	9.5	0.19	0.005	0.16	1.21	0.021075	0.000421	0.000011092	0.000355	0.002684
Off-road Truck	76.7	200	0.59	9050.6	9.5	0.19	0.005	0.16	1.21	0.085981	0.00172	0.000045253	0.001448	0.010951
Off-road Truck	1.4	200	0.59	165.2	9.5	0.19	0.005	0.16	1.21	0.001569	3.14E-05	0.000000826	2.64E-05	0.0002
Other Diesel Engine	12.1	225	0.59	1606.275	9.5	0.19	0.005	0.16	1.21	0.01526	0.000305	8.03138E-06	0.000257	0.001944
Other Diesel Engine	0.1	150	0.59	8.85	9.5	0.19	0.005	0.16	1.21	8.41E-05	1.68E-06	4.425E-08	1.42E-06	1.07E-05
Other Diesel Engine	1.8	100	0.59	106.2	9.5	0.19	0.005	0.16	1.21	0.001009	2.02E-05	0.000000531	1.7E-05	0.000129
Pump	80	50	0.43	1720	9.5	0.19	0.005	0.16	1.21	0.01634	0.000327	0.0000086	0.000275	0.002081
Pump	79.7	50	0.43	1713.55	9.5	0.19	0.005	0.16	1.21	0.016279	0.000326	8.56775E-06	0.000274	0.002073
Rubber Tired Loader	2.8	110	0.59	181.72	9.5	0.19	0.005	0.16	1.21	0.001726	3.45E-05	9.086E-07	2.91E-05	0.00022
Rubber Tired Loader	11	175	0.59	1135.75	9.5	0.19	0.005	0.16	1.21	0.01079	0.000216	5.67875E-06	0.000182	0.001374
Skid Steer Loader	4.7	175	0.21	172.725	9.5	0.19	0.005	0.16	1.21	0.001641	3.28E-05	8.63625E-07	2.76E-05	0.000209
									SUM	**0.367084**	**0.007342**	**0.000193202**	**0.006182**	**0.046755**

Table 1: Emissions for 1 crawlspace-type home elevation.

					Emission Factors					Calculated Emissions				
Equipment Type	Hours	Horsepower	Load Factor	hphr	NOx EF	VOC EF	SO2 EF	PM 2.5 EF	CO EF	Nox	VOC	SO2	PM 2.5	CO
Compactor	12.7	250	0.43	1365.25	9.5	0.19	0.005	0.16	1.21	0.01297	0.000259	6.82625E-06	0.000218	0.001652
Compressor	77.5	100	0.43	3332.5	9.5	0.19	0.005	0.16	1.21	0.031659	0.000633	1.66625E-05	0.000533	0.004032
Compressor	155	75	0.43	4998.75	9.5	0.19	0.005	0.16	1.21	0.047488	0.00095	2.49938E-05	0.0008	0.006048
Compressor	12.7	125	0.43	682.625	9.5	0.19	0.005	0.16	1.21	0.006485	0.00013	3.41313E-06	0.000109	0.000826
Concrete Saw	24	50	0.59	708	9.5	0.19	0.005	0.16	1.21	0.006726	0.000135	0.00000354	0.000113	0.000857
Crane	3	300	0.43	387	9.5	0.19	0.005	0.16	1.21	0.003677	7.35E-05	0.000001935	6.19E-05	0.000468
Crane	1.8	300	0.43	232.2	9.5	0.19	0.005	0.16	1.21	0.002206	4.41E-05	0.000001161	3.72E-05	0.000281
Dozer	0.2	250	0.59	29.5	9.5	0.19	0.005	0.16	1.21	0.00028	5.61E-06	1.475E-07	4.72E-06	3.57E-05
Excavator	4.5	300	0.59	796.5	9.5	0.19	0.005	0.16	1.21	0.007567	0.000151	3.9825E-06	0.000127	0.000964
Generator	9.4	7.5	0.43	30.315	9.5	0.19	0.005	0.16	1.21	0.000288	5.76E-06	1.51575E-07	4.85E-06	3.67E-05
Off-road Truck	24	200	0.59	2832	9.5	0.19	0.005	0.16	1.21	0.026904	0.000538	0.00001416	0.000453	0.003427
Off-road Truck	27.1	300	0.59	4796.7	9.5	0.19	0.005	0.16	1.21	0.045569	0.000911	2.39835E-05	0.000767	0.005804
Off-road Truck	5.2	400	0.59	1227.2	9.5	0.19	0.005	0.16	1.21	0.011658	0.000233	0.000006136	0.000196	0.001485
Off-road Truck	176.7	200	0.59	20850.6	9.5	0.19	0.005	0.16	1.21	0.198081	0.003962	0.000104253	0.003336	0.025229
Off-road Truck	0.8	200	0.59	94.4	9.5	0.19	0.005	0.16	1.21	0.000897	1.79E-05	0.000000472	1.51E-05	0.000114
Other Diesel Engine	6.7	225	0.59	889.425	9.5	0.19	0.005	0.16	1.21	0.00845	0.000169	4.44713E-06	0.000142	0.001076
Other Diesel Engine	0.04	150	0.59	3.54	9.5	0.19	0.005	0.16	1.21	3.36E-05	6.73E-07	1.77E-08	5.66E-07	4.28E-06
Other Diesel Engine	1.8	100	0.59	106.2	9.5	0.19	0.005	0.16	1.21	0.001009	2.02E-05	0.000000531	1.7E-05	0.000129
Pump	80	50	0.43	1720	9.5	0.19	0.005	0.16	1.21	0.01634	0.000327	0.0000086	0.000275	0.002081
Pump	40.3	50	0.43	866.45	9.5	0.19	0.005	0.16	1.21	0.008231	0.000165	4.33225E-06	0.000139	0.001048
Rubber Tired Loader	1.4	110	0.59	90.86	9.5	0.19	0.005	0.16	1.21	0.000863	1.73E-05	4.543E-07	1.45E-05	0.00011
Rubber Tired Loader	5.2	175	0.59	536.9	9.5	0.19	0.005	0.16	1.21	0.005101	0.000102	2.6845E-06	8.59E-05	0.00065
Skid Steer Loader	2.6	175	0.21	95.55	9.5	0.19	0.005	0.16	1.21	0.000908	1.82E-05	4.7775E-07	1.53E-05	0.000116
									SUM	**0.443388**	**0.008868**	**0.000233362**	**0.007468**	**0.056474**

Table 2: Emissions for 1 slab on grade type home elevation.

					Emission Factors					Calculated Emissions				
Equipment Type	Hours	Horsepower	Load Factor	hphr	NOx EF	VOC EF	SO2 EF	PM 2.5 EF	CO EF	Nox	VOC	SO2	PM 2.5	CO
Compactor	45.9	250	0.43	4934.25	9.5	0.19	0.005	0.16	1.21	0.046875	0.000938	2.46713E-05	0.000789	0.00597
Compressor	87.1	100	0.43	3745.3	9.5	0.19	0.005	0.16	1.21	0.03558	0.000712	1.87265E-05	0.000599	0.004532
Compressor	174.2	75	0.43	5617.95	9.5	0.19	0.005	0.16	1.21	0.053371	0.001067	2.80898E-05	0.000899	0.006798
Compressor	45.9	125	0.43	2467.125	9.5	0.19	0.005	0.16	1.21	0.023438	0.000469	1.23356E-05	0.000395	0.002985
Concrete Saw	8	50	0.59	236	9.5	0.19	0.005	0.16	1.21	0.002242	4.48E-05	0.00000118	3.78E-05	0.000286
Crane	1.9	300	0.43	245.1	9.5	0.19	0.005	0.16	1.21	0.002328	4.66E-05	1.2255E-06	3.92E-05	0.000297
Crane	1.8	300	0.43	232.2	9.5	0.19	0.005	0.16	1.21	0.002206	4.41E-05	0.000001161	3.72E-05	0.000281
Dozer	0.4	250	0.59	59	9.5	0.19	0.005	0.16	1.21	0.000561	1.12E-05	0.000000295	9.44E-06	7.14E-05
Excavator	8.8	300	0.59	1557.6	9.5	0.19	0.005	0.16	1.21	0.014797	0.000296	0.000007788	0.000249	0.001885
Generator	10.7	7.5	0.43	34.5075	9.5	0.19	0.005	0.16	1.21	0.000328	6.56E-06	1.72538E-07	5.52E-06	4.18E-05
Off-road Truck	8	200	0.59	944	9.5	0.19	0.005	0.16	1.21	0.008968	0.000179	0.00000472	0.000151	0.001142
Off-road Truck	48.8	300	0.59	8637.6	9.5	0.19	0.005	0.16	1.21	0.082057	0.001641	0.000043188	0.001382	0.010451
Off-road Truck	5	400	0.59	1180	9.5	0.19	0.005	0.16	1.21	0.01121	0.000224	0.0000059	0.000189	0.001428
Off-road Truck	76.7	200	0.59	9050.6	9.5	0.19	0.005	0.16	1.21	0.085981	0.00172	0.000045253	0.001448	0.010951
Off-road Truck	0.8	200	0.59	94.4	9.5	0.19	0.005	0.16	1.21	0.000897	1.79E-05	0.000000472	1.51E-05	0.000114
Other Diesel Engine	7.7	225	0.59	1022.175	9.5	0.19	0.005	0.16	1.21	0.009711	0.000194	5.11088E-06	0.000164	0.001237
Other Diesel Engine	0.05	150	0.59	4.425	9.5	0.19	0.005	0.16	1.21	4.2E-05	8.41E-07	2.2125E-08	7.08E-07	5.35E-06
Other Diesel Engine	1.8	100	0.59	106.2	9.5	0.19	0.005	0.16	1.21	0.001009	2.02E-05	0.000000531	1.7E-05	0.000129
Pump	80	50	0.43	1720	9.5	0.19	0.005	0.16	1.21	0.01634	0.000327	0.0000086	0.000275	0.002081
Pump	44.7	50	0.43	961.05	9.5	0.19	0.005	0.16	1.21	0.00913	0.000183	4.80525E-06	0.000154	0.001163
Rubber Tired Loader	3	110	0.59	194.7	9.5	0.19	0.005	0.16	1.21	0.00185	3.7E-05	9.735E-07	3.12E-05	0.000236
Rubber Tired Loader	6.5	175	0.59	671.125	9.5	0.19	0.005	0.16	1.21	0.006376	0.000128	3.35563E-06	0.000107	0.000812
Skid Steer Loader	2.5	175	0.21	91.875	9.5	0.19	0.005	0.16	1.21	0.000873	1.75E-05	4.59375E-07	1.47E-05	0.000111
									SUM	**0.416168**	**0.008323**	**0.000219036**	**0.007009**	**0.053007**

Table 3: Emissions for 1 basement subgrade type home elevation.

CENAN PL-E October 2025

RECORD OF NON-APPLICABILITY (RONA)

Project Name: Fire Island to Montauk Point (FIMP), NY CSRM Nonstructural Pilot Project

Reference: Attachment A

Project/Action Point of Contact: Peter Weppler

Begin Date: TBD

End Date: TBD

1. The project described above has been evaluated for Section 176 of the Clean Air Act. Project related emissions associated with the federal action were estimated to evaluate the applicability of General Conformity regulations (40CFR§93 Subpart B).

2. The requirements of this rule do not apply because the total direct and indirect emissions from this project are less than the 25 tons trigger levels for NOx and VOCs, and less than 100 tons of $PM_{2.5}$, CO, and SO_2 for each project year (40CFR§93.153(b)(1) & (2)). The estimated annual NOx emissions for the project are: 22.8 tons for 2027 and 4.8 tons for 2028. VOC, $PM_{2.5}$, CO, and SO_2 are significantly lower than NOx emission estimates as NOx is the primary mass criteria pollutant from diesel equipment. Total annual emissions by pollutant are provided in the attachment.

3. The project is presumed to conform with the General Conformity requirements and is exempted from Subpart B under 40CFR§93.153(c)(1).

WEPPLER.PETER.M.1228647353 Digitally signed by WEPPLER.PETER.M.1228647353 Date: 2025.10.27 10:15:16 -04'00'

27 Oct 25

Peter M. Weppler
Chief, Environmental Analyses Branch
USACE, New York District

DATE