

# Final General Conformity Determination

for

Bayport Terminal Department of the Army Permit SWG -  
1998-01818

Harris County, Texas

Prepared for: U.S. Army Corps of Engineers, Galveston  
District

Project reference: Provided by: The Port of Houston Authority

Project number: Prepared by: AECOM Technical Services, Inc and  
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Attachment A – TCEQ Concurrence Letter

# 1. Introduction

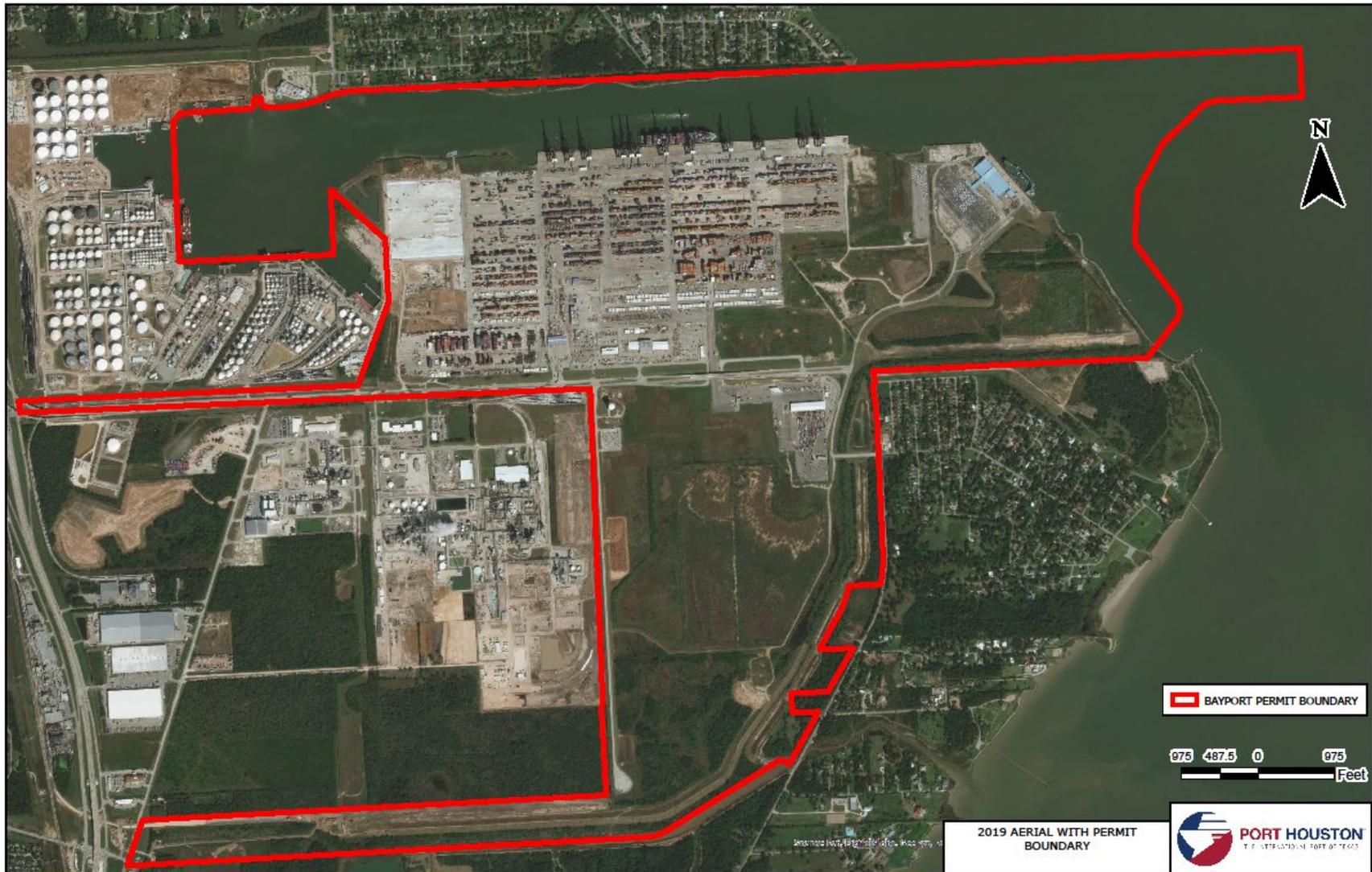
## 1.1 Project Overview

The Port of Houston Authority (PHA) will be renewing its Bayport Terminal Department of the Army (DOA) permit (SWG-1998-01818) in 2020. Currently, a special permit condition requires that PHA stay under 25 tons per year of Nitrogen Oxides (NOx) emissions for general conformity related construction emissions during the construction of the Bayport Terminal. As part of the permit renewal, PHA requests that the U.S. Army Corps of Engineers (USACE) remove this special condition because a General Conformity Determination (GCD) will be completed instead for the construction of the next three wharves and the associated berth dredging (Proposed Project).

PHA is seeking to expand its Bayport Wharf capacity by adding three new Wharves (6, 7, and 1) over the course of seven (7) years. This GCD provides details and emissions estimates to support PHA's position that this project will not interfere or hamper the State Implementation Plan (SIP) with specific regard to Ozone Attainment.

Figure 1-1 below shows the full permit boundary. The Bayport terminal is located adjacent to the Bayport Ship Channel and Galveston Bay, approximately 30 miles of downtown Houston, in the City of Pasadena and the City of Seabrook, Harris County, Texas.

Figure 1-1 Permit Boundary



## 1.2 Regulatory Background

General Conformity is a Federal regulatory program designed to ensure that actions taken by Federal entities, such as permits issued by USACE, do not hinder states' efforts to meet the national ambient air quality standards (NAAQS). The definition of a Federal action as specified in 40 CFR 93.152 includes "...a permit, license, or other approval for some aspect of a nonfederal undertaking, (and) the relevant activity is the part, portion, or phase of the nonfederal undertaking that requires the federal permit, license, or approval."

With regard to the Proposed Project, the Federal Action consists of the renewal of the USACE permit, pursuant to Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act. And, therefore, subject to General Conformity Review (GCR). Placement of dredged material is part of the proposed Federal Action and is subject to General Conformity. Maintenance dredging is not subject to GCR.

The U.S. Environmental Protection Agency (USEPA) has established a series of steps to determine whether a given Federal Action is subject to GCR as follows (USEPA 2010b).

1. Whether the action will occur in a nonattainment or maintenance area (see **Table 1-1** below for the attainment status of the project area);
2. Whether one or more of the specific exemptions apply to the action;
3. Whether the federal agency has included the action on its list of "presumed to conform" actions;
4. Whether the total direct and indirect emissions are below or above the *de minimis* levels (see **Table 1-2** below for the *de minimis* levels); and/or
5. Where the facility has an emission-budget approved by the state as part of the SIP, the federal agency determines if the emissions from the proposed action are within the budget.

Regarding the proposed Federal action to renew the Permit;

1. The action will be occurring in the Houston-Galveston-Brazoria (HGB) ozone nonattainment area, which is designated as serious nonattainment for the 2008 ozone standard and marginal nonattainment of the 2015 ozone standard;
2. None of the specific exemptions apply to the action, except to the extent that any of the dredging to be carried out is maintenance dredging, which is specifically exempt;
3. The USACE has not included dredging or wharf construction projects on a list of "presumed to conform" actions;
4. Total direct and indirect emissions, as currently estimated, will exceed the *de minimis* level of 50 tons of oxides of nitrogen (NOx) in a serious nonattainment area (NAA). (see Table 2-5 in Section 2 for estimated project related emissions); and
5. The USACE does not possess an emissions budget approved as part of the HGB area SIP.

Based on the discussion presented above and the emissions presented below in Sections 2 and 3, a General Conformity determination is required for NOx emissions from the Proposed Project. To demonstrate conformity, one or more of the following conditions must be met (EPA 2010b).

1. Demonstrating that the total direct and indirect emissions are specifically identified and accounted for in the applicable SIP;
2. Obtaining a written statement from the state documenting that the total direct and indirect emissions from the action, along with all other emissions in the area, will not exceed the SIP emission budget;
3. Obtaining a written commitment from the state to revise the SIP to include the emissions from the action;

4. Obtaining a statement from the metropolitan planning organization (MPO) for the area documenting that any on-road motor vehicle emissions are included in the current regional emission analysis for the area's transportation plan or transportation improvement program;
5. Fully offsetting the total direct and indirect emissions by reducing emissions of the same pollutant or precursor in the same nonattainment or maintenance area.

A sixth potential demonstration method, conducting air quality modeling that demonstrates that the emissions will not cause or contribute to new violations of the standards, or increase the frequency or severity of any existing violations of the standards, is not available for the Proposed Project, because modeling is not acceptable for ozone nonattainment areas due to the complexity of ozone formation from precursor pollutants and the limitations of current air quality models.

Of the options detailed above, the USACE elected to utilize the second option, obtaining concurrence from the Texas Commission on Environmental Quality (TCEQ) that the total direct and indirect NO<sub>x</sub> emissions from the action will not exceed the applicable SIP emissions budget, because of the low level of emissions compared with the SIP budget, and the temporary nature of the emissions.

**Table 1-1 Attainment Status of Houston-Galveston-Brazoria Area**

Pollutant	Primary NAAQS	Averaging Period	Designation	Counties	Attainment Deadline
Ozone (O <sub>3</sub> )	0.070 ppm (2015 standard)	8-hour	Marginal Nonattainment	Brazoria, Chambers, Fort Bend, Galveston, Harris, Montgomery	August 3, 2021
	0.075 ppm (2008 standard)	8-hour	Serious Nonattainment	Brazoria, Chambers, Fort Bend, Galveston, Harris, Liberty, Montgomery, Waller	July 20, 2021
Lead (Pb)	0.15 µg/m <sup>3</sup> (2008 std)	Rolling 3-Month Avg.	Attainment/ Unclassifiable		
	1.5 µg/m <sup>3</sup> (1978 std)	Quarterly Average	Attainment/ Unclassifiable		
Carbon Monoxide (CO)	9 ppm	8-hour	Attainment/ Unclassifiable		
	(10 mg/m <sup>3</sup> )				
	35 ppm	1-hour	Attainment/ Unclassifiable		
	(40 mg/m <sup>3</sup> )				
Nitrogen Dioxide (NO <sub>2</sub> )	0.053 ppm (100 µg/m <sup>3</sup> )	Annual	Attainment/ Unclassifiable		
	100 ppb	1-hour	Pending		
Particulate Matter (PM <sub>10</sub> )	150 µg/m <sup>3</sup>	24-hour	Attainment/ Unclassifiable		
Particulate Matter (PM <sub>2.5</sub> )	15.0 µg/m <sup>3</sup>	Annual (Arith. Mean)	Attainment/ Unclassifiable		
	35 µg/m <sup>3</sup>	24-hour	Attainment/ Unclassifiable		
Sulfur Dioxide (SO <sub>2</sub> )	0.03 ppm	Annual (Arith. Mean)	Standard Revoked August 23, 2010		
	0.14 ppm	24-hour	Standard Revoked August 23, 2010		
	75 ppb	1-hour	Pending		

**Table 1-2 Significant Action Thresholds in Nonattainment Areas**

Ambient Pollutant	Nonattainment Status	Tons/yr
<b>Ozone (VOCs or NO<sub>x</sub>):</b>		
	<b>Serious NAA's</b>	<b>50</b>
	Severe NAA's	25
	Extreme NAA's	10
	Other ozone NAA's outside an ozone transport region	100
	Other ozone NAA's inside an ozone transport region	
	VOC	50
	NO <sub>x</sub>	100
Carbon monoxide:	All NAA's	100
SO <sub>2</sub> or NO <sub>2</sub>	All NAA's	100
PM-10:		
	Moderate NAA's	100
	Serious NAA's	70
PM-2.5:		
	Direct emissions	100
	SO <sub>2</sub>	100
	NO <sub>x</sub> (unless determined not to be a significant precursor)	100
	VOC or ammonia (if determined to be significant precursors)	100
Pb:	All NAA's	25

Source of table: 40 CFR §93.153 Applicability. (Amended to include PM2.5)

## 2. Project Construction Emissions

The GCR requires that potential emissions generated by any project-related activity and/or increased operational activities be determined on an annual basis and compared to the annual *de minimis* levels for those pollutants (or their precursors) for which the area is classified as nonattainment or maintenance. Emissions attributable to the proposed wharf in water construction activities were analyzed for NO<sub>x</sub> and VOC from construction and dredging activities. Construction and dredging activities would involve various equipment operations during construction years.

### 2.1 Wharf Construction Emissions

Construction period emissions were estimated based on the construction activity data and emission estimate tools discussed below.

#### 2.1.1 Proposed Activity Resource Data Input

An estimate of equipment requirements for the construction associated with the proposed Wharves 1, 6 and 7 at the Port of Houston Authority's Bayport Terminal in Pasadena, Texas has been performed with the assumptions made in developing the list of equipment, crew and equipment requirements, and productivity necessary to complete the construction are based on data presented in

"2003 RSMMeans Facilities Construction Cost Data", R.S. Means Co., Inc., 2002

"2011 RSMMeans Facilities Construction Cost Data", R.S. Means Co., Inc., 2010

The cost estimate completed for the Wharf 6 project by Jacobs Engineering (formerly CH2M Hill) was also used for purposes of establishing required construction items and quantities. The resulting estimate included both labor and equipment hours and the estimated labor hours resulting from the estimated quantities were used as a check to ensure this emission estimate is consistent with the basis of the cost estimate. It is assumed that Wharves 1 and 7 will have the same equipment requirements as Wharf 6.

Based on the estimate and plan for Wharf 6, there is a structural deck concrete volume of 6,800 cubic yards (CY); based on approximate surface dimensions of 120 feet by 1,000 feet, with an approximate slab depth of 1.5 feet (18 inches).

Other major concrete items include:

- Fascias/fenders plus formwork (2,375 CY),
- Water side crane beam plus formwork (1,087 CY),
- Tangent wall base plus formwork (2,550 CY),
- Edge beam concrete (632 CY), and
- Terminal wall concrete and formwork (212 CY).

Although these are nominally different types of work, they would all require pumped concrete into forms similar to the main slab, and the various pumped concrete items all have the same or similar crew types and daily productivities. Therefore, for placement of concrete it is assumed that the same concrete line item in the Means guide used.

Foundations will consist of concrete shafts. Two different diameter shafts will be employed for on-land foundations – there will be 23,850 linear feet (LF) of 36-inch diameter shafts, and 5,733 LF of 42-inch diameter shafts; for marine shafts, there will be 42,017 LF of 42-inch diameter shafts. However, the estimate employs the same unit price for both sizes, implying the same crew will be used regardless of diameter. The Means guide does not have a 42-inch diameter item, 48-inch diameter was used as a conservative measure. Total length of drilled shaft is 71,600 LF.

For rebar, quantities are provided for all individual components of concrete and shaft work; from a practical installation standpoint it is assumed this work is continuous and the equipment and effort involved does not vary; the total quantity of rebar to be installed is 5,044 tons.

Various deck accessories will be installed, all with relatively negligible labor hours and zero or negligible equipment costs. These include bollards, grating installations, concrete barrier wall installations, etc. From the cost estimate, these items represent only 3% of the overall cost estimate. These items are also mostly steel items that require crane crews for placement (bollards, crane rails, etc.). Based on the total labor hours of 23,088 hours estimated and a typical crane crew consisting of 4 crew members, a crane, and a welding machine. These items are estimated at approximately 722 crew days.

Accordinging the Means guide, the activity data was developed for other items including:

- Anchorage wall
- Earth work, excluding dredging addressed separately in this report, including dry (land-based) excavation, and light-weight concrete placement.
- Other miscellaneous site work including various demolition items, jet grouting, stormwater controls, etc.
- Mechanical work including a variety of piping and fixture installations and electrical/communication work primarily including conduit installation and manholes.

## 2.1.2 Equipment Operations and Emissions

The quantity and type of equipment necessary were determined based on the activities necessary to implement the proposed action as described above. All equipment was assumed to be diesel-powered unless otherwise noted. Pieces of equipment to be used include, but are not limited to:

- Compressor
- Paver
- Crane
- Loader
- Excavator
- Dewatering pump
- Diesel hammer (pile driver)
- Gas welding machine
- Gas engine vibrators

The U.S. Environmental Protection Agency (USEPA) recommends the following formula to calculate hourly emissions from nonroad engine sources such as cranes, front end loaders, etc.:

$$M_i = N \times HP \times LF \times EF_i$$

where:

- $M_i$  = mass of emissions of  $i^{\text{th}}$  pollutants during inventory period;
- $N$  = source population (units);
- $HP$  = average rated horsepower;
- $LF$  = typical load factor; and
- $EF_i$  = average emissions of  $i^{\text{th}}$  pollutant per unit of use (e.g., grams per horsepower-hour).

Estimates of equipment emissions were based on the estimated hours of usage and emission factors for each mobile source for the project. The most recent USEPA Motor Vehicle Emission Simulator (MOVES, Version 2014b) emission factor model was used to estimate construction equipment emission factors in association with the national default input parameters applicable to Harris County where the project is located. Typical engine load factor values have been incorporated into the MOVES2014b model. Estimated total emissions from operation of on-site equipment are presented in Table 2-1.

**Table 2-1 Single Wharf Construction Total Equipment Emissions**

Equipment Type	Number of Units	Days	Hours	Horsepower <sup>2</sup> (hp)	Emission Factor <sup>1</sup> (grams/hp-hour)		Emission Rate (tons)	
					VOC	NOx	VOC	NOx
Backhoe loader	1	25	150	104	0.38	2.41	0.01	0.04
Cement mixer, 2 CY	1	540	3240	18	0.57	4.51	0.04	0.29
Water pump, 6"	1	1302	7812	33	0.27	3.37	0.08	0.96
Compressor, 160 cfm	1	540	3240	60	0.16	3.08	0.03	0.66
Compressor, 250 cfm	1	16	96	122	0.08	1.46	0.00	0.02
Concrete pump, small	1	303	1818	58	0.36	4.09	0.04	0.48
Crane, hydraulic, 33 ton	1	1302	7812	300	0.10	1.59	0.25	4.10
Crane, SP, 12 ton	1	15	90	100	0.05	0.93	0.00	0.01
Crane, SP, 5 ton	1	4	24	49	0.11	2.62	0.00	0.00
Crane, 40 ton	1	743	4458	300	0.10	1.59	0.14	2.34
Vibratory hammer and generator	1	21	126	500	0.17	2.74	0.01	0.19
Drill rig & augers	1	1302	7812	115	0.22	2.83	0.22	2.80
Front end loader, 2.5 CY	1	10	60	104	0.38	2.41	0.00	0.02
Gas engine vibrator	1	606	3636	6	5.52	1.62	0.13	0.04
Gas welding machine	1	722	4332	9	6.84	1.69	0.29	0.07
Hydraulic excavator, 3.5 CY	1	27	162	417	0.04	0.71	0.00	0.05
Hydraulic hammer, 1200 lb	1	10	60	21	0.40	3.90	0.00	0.01
Loader, skid steer	1	540	3240	42	0.38	3.45	0.06	0.52
Pavement removal bucket	1	10	60	142	0.07	1.18	0.00	0.01
Power shovel, 0.5 CY	1	6	36	93	0.03	1.27	0.00	0.00
<b>Total</b>							<b>1.31</b>	<b>12.60</b>

## Sources:

1. MOVES2014b, non-road module for Harris County.
2. USACE Construction Equipment Ownership and Operating Expense Schedule

### 2.1.3 Construction Vehicle Operations and Emissions

On-road construction truck trips were also estimated based on the Means guide discussed above. Truck operations would result in indirect emissions. It is assumed each truck trip associated with the wharf construction would take a 20-mile round trip to and from the site through urban unrestricted roads with an average travel speed of 25 miles per hour. It is also conservatively assumed that during each 722 crew days, there would be an average of truck running on site at a 5-mile per hour speed during an 8-hour day. The same MOVES2014b model was used to predict on- and off-site truck running emission factors for NOx and VOC. Estimated total emissions from operation of trucks are presented in Table 2-2.

**Table 2-2 Single Wharf Construction Total On-road Truck Emissions**

Site	Miles Travelled	Days	Hours/day	Emission Factor <sup>1</sup> (pounds/mile or pounds/hp-hour)		Emission Rate (tons)	
				VOC	NOx	VOC	NOx
Off-site	150,981	--	--	0.0005	0.0039	0.04	0.29
On-site	--	722	8	0.010	0.061	0.03	0.18
<b>Total</b>						<b>0.07</b>	<b>0.47</b>

Sources:

1. MOVES2014b, on-road module for Harris County.

### 2.1.4 Construction Support Vessel Emissions

Emissions from vessels used in support of construction activities were estimated from vessel activity reported by the contractor during the construction of Wharf 2. The vessel included tug boats and personnel (crew) boats. The information includes the following:

6. Vessel/equipment type (tug, personnel boat)
7. Engine horsepower and load factor (% of full load)
8. Hours of operation for each vessel or piece of equipment
9. Linear feet of wharf constructed (667 LF)

Emissions were estimated using emission factors derived from Tier 1 marine emission standards and the Wharf 2 activity information scaled to the linear feet of wharf to be constructed for Wharves 1, 6, and 7 (at 1,000 LF each). These emissions for a single wharf are presented in Table 2-3.

**Table 2-3 Single Wharf Construction Total Support Vessel Emissions**

Vessel Type	Number of Units	Horsepower hours/unit	Emission Factor (grams/hp-hour)		Emission Rate (tons)	
			VOC	NOx	VOC	NOx
Personnel Boats	2	9,445	0.10	8.70	0.00	0.18
Tug Boat	3	295,952	0.10	8.70	0.10	8.51
<b>Total</b>					<b>0.10</b>	<b>8.70</b>

## 2.2 Dredging Emissions

Project emission estimates for water-based emission sources (dredges, support vessels) associated with the construction of Berths 1, 6, and 7 are based on equipment and activity reports provided by the contractor during the construction of Berth 2, and emission factors and other information from published sources, including the PHA's most recent air emissions inventory, 2013 Goods Movement Air Emissions Inventory (Eastern Research Group, 2017) and published emission standards. The emission factors and other assumptions are consistent with estimates produced for the Houston Ship Channel - Expansion Channel Improvements Project (HSC ECIP).

The Berth 2 information includes the following:

10. Vessel/equipment type (dredge, barge, tug, tender, etc.)
11. Engine horsepower and load factor (% of full load)
12. Hours of operation for each vessel or piece of equipment
13. Volume of material dredged (CY)

### 2.2.1 Dredging Equipment and Supporting Vessel Emissions

Based on the information provided, the dredge is expected to be a 24-inch conventional clamshell dredge equipped with a 3,200-horsepower main engine. The dredging operation will also require various support vessels such as anchor barges, crew boats, tugs, and survey boats.

The information reported by the Berth 2 contractor includes characteristics of the diesel engines on board the dredge and support vessels such as horsepower, operating hours, and average operating loads. While the contractor-provided information includes the emission tier level of each engine, it is unlikely that the same vessels and equipment will be used on the future construction of Wharves 1, 6, and 7. To prepare conservative (reasonably worst case) emission estimates, emission factors representing Tier 1 diesel engines were used in the emission calculations. The emission factors are based on emission standards for the appropriately sized engines.

Operating hours for dredging of each berth were scaled relative to the volume dredged for Berth 2 (380,609 CY). Total planned dredged volumes for berth 1, 6, and 7 are 225,000, 385,600, and 418,800 CY, respectively.

### 2.2.2 Emission Calculations and Results

Estimates of VOC and NO<sub>x</sub> emissions from each vessel and dredge engine have been based on horsepower hours (hp-hrs), calculated by multiplying horsepower by load factor by operating hours, multiplied by emission factors in units of grams per horsepower hour (g/hp-hr). As noted above, emission factors have been chosen to be relatively conservative (i.e., to be relatively high so as to calculate reasonably worst-case emission levels). Emission factors for marine engines are based on the Tier 1 emission standards stratified by horsepower. The Tier 1 standards have been applicable since the late 1990s (specific year depending on horsepower) and so reflect the oldest equipment likely to be in use when the project elements take place and likely overestimate the age of equipment that will actually be used because of the introduction of Tier 2 and Tier 3 engines into the equipment that may be used on the project, consequently overestimating prospective emissions.

Estimated emissions from dredging for each berth are provided in Table 2-4.

**Table 2-4 Wharf Dredging and Support Vessel Emissions, Each Wharf**

Vessel Type	Number of Units	Horsepower hours/unit	Emission Factor (grams/hp-hour)		Emission Rate (tons)	
			VOC	NOx	VOC	NOx
Wharf 1						
Anchor Barge	2	14,470	0.10	8.70	0.00	0.28
Crewboat	1	20,005	0.10	8.70	0.00	0.19
Skiff	2	15,614	0.10	8.70	0.00	0.30
Survey Boat	1	18,621	0.10	8.70	0.00	0.18
Tender	3	176,367	0.10	8.70	0.06	5.07
Dredge, 24"	1	661,491	0.10	9.3	0.07	6.78
Wharf 1 Total					0.14	12.80
Wharf 6						
Anchor Barge	2	24,799	0.10	8.70	0.01	0.48
Crewboat	1	34,284	0.10	8.70	0.00	0.33
Skiff	2	26,758	0.10	8.70	0.01	0.51
Survey Boat	1	31,913	0.10	8.70	0.00	0.31
Tender	3	302,254	0.10	8.70	0.10	8.70
Dredge, 24"	1	1,133,649	0.10	9.3	0.12	11.62
Wharf 6 Total					0.24	21.94
Wharf 7						
Anchor Barge	2	26,934	0.10	8.70	0.01	0.52
Crewboat	1	37,236	0.10	8.70	0.00	0.36
Skiff	2	29,062	0.10	8.70	0.01	0.56
Survey Boat	1	34,661	0.10	8.70	0.00	0.33
Tender	3	328,277	0.10	8.70	0.11	9.44
Dredge, 24"	1	1,231,256	0.10	9.3	0.14	12.62
Wharf 7 Total					0.26	23.83

### 2.3 Annual Emissions from Wharves 1, 6 and 7 Construction and Dredging

Based on the construction schedule for three wharves with each occurring within a 2-year duration in 2021-2022, 2023-2024, and 2027-2028, respectively, the total emissions presented in Table 2-1 through Table 2-3 for single wharf construction were evenly distributed over the construction months within the 2-calendar year schedule for each wharf. However, the dredging schedule will not follow the same schedule as the construction of the wharves. To reduce project cost, dredging equipment that will be deployed around the same time for the Houston Ship Channel expansion will be used for this project as well. This means that most of the dredging will occur in the first year (2021). The remaining emissions from the dredge and supporting vessels are evenly distributed over the construction months within the 2-calendar year schedule for each wharf. The wharf construction and dredging annual emissions are summarized in Table 2-5.

**Table 2-5 Wharf and Berth Construction Annual Emissions**

Year	Wharf Construction		Const. Support Vessels		Dredging & Related		Total Emissions (tons)	
	VOC	NOx	VOC	NOx	VOC	NOx	VOC	NOx
2021	0.83	7.84	0.06	5.22	0.46	41.50	1.35	54.56
2022	0.55	5.23	0.04	3.48	0.03	2.85	0.62	11.55
2023	--	--	--	--	--	--	--	--
2024	0.83	7.84	0.06	5.22	0.06	5.69	0.95	18.75
2025	0.55	5.23	0.04	3.48	0.02	1.42	0.61	10.13
2026	--	--	--	--	--	--	--	--
2027	0.83	7.84	0.06	5.22	0.06	5.69	0.95	18.75
2028	0.55	5.23	0.04	3.48	0.02	1.42	0.61	10.13

## 3. General Conformity Evaluation

### 3.1 Regional SIP Emissions Inventory Comparison

Since the overall estimated annual NO<sub>x</sub> emissions are projected to exceed the 50 TPY GCR *de minimis* level during 2021 with a total of just under 55 tons for the year, a General Conformity determination is required. This section provides a NO<sub>x</sub> emission comparison with the applicable SIP established for comparable source categories. In consideration of the definition and conformity determination requirements for the most recent revisions to the SIP in 40 CFR §93.152 and §93.158(a)(5)(i)(A) respectively, the latest approved revision to the SIP is the HGB 2008 Eight Hour Ozone RFP SIP Revision, approved by EPA on February 13, 2019 (TCEQ 2016). This SIP revision provides emissions inventory for various mobile source categories including nonroad equipment and on-road vehicles.

This SIP RFP demonstration was reviewed to determine the various activity categories of emissions in which the Proposed Project's construction activities will fall. While the SIP evaluates NO<sub>x</sub> emissions from all sources, including biogenic (non-human-caused) emission sources, this evaluation focuses on the categories most relevant to the Proposed Project construction emissions, specifically the Non-Road Mobile and On-Road Mobile source categories.

The NO<sub>x</sub> emissions budgets for Non-Road and On-Road categories were obtained from Table 2-4 of the RFP SIP. Table 3-1 below provides the controlled emissions inventories excerpted from Table 2.4 of the RFP SIP for 2017 (the most recent year estimated). Controlled emissions represent the projected emissions inventories with all federal and state control measures implemented.

**Table 3-1 2017 HGB Non-Road and On-Road NO<sub>x</sub> Emissions (tpd)**

Source	Emissions (tons per day)
Non-Road Mobile	86.97
On-Road Mobile	98.15

Table 3-2 provides the Proposed Project emissions for 2021 (the only year that exceeds the 50 tons per year *de minimis* threshold) are compared to the HGB SIP projections in Table 3-1 above. Note, for presentation, these SIP budgets are shown as tons per year instead of tons per day. As shown in the tables, project emissions represent no more than 0.17% of the Non-Road SIP emission budget and 0.001% of the On-Road SIP emission budget.

**Table 3-2 2021 Proposed Project NO<sub>x</sub> Emissions (tpy)**

Source	Construction Emissions	SIP Budget	% of SIP Budget
Non-Road Mobile	54.09	31,744	0.17%
On-Road Mobile	0.47	35,825	0.001%

### 3.2 General Conformity Determination

Total project construction-related temporary NO<sub>x</sub> emissions were estimated to slightly exceed the 50 TPY *de minimis* threshold during 2021 (54.56 TPY) in the HGB NAA. However, as compared with the available regional emissions inventory, the maximum project-induced temporary construction NO<sub>x</sub> emissions are considered minimal and would be a small percentage of the emissions inventory available for the respective source categories as described previously.

The USACE believes that Proposed Project emissions constitute a small percentage of the applicable SIP budgets and that the emissions from this project can clearly be accommodated in the HGB SIP emission budgets. The USACE has preliminarily determined that the project construction emissions can conform to the applicable HGB SIP. Therefore, USACE seeks TCEQ's concurrence with this assertion.

## 4. DRAFT General Conformity Determination Comments and Responses

The USACE submitted the Draft GCD and issued a public notice announcing the availability of the Draft GCD for the Proposed Project for a 30-day comment period. The Draft GCD was posted on the USACE website and the public notice was published in the Houston Chronicle. Availability of the public notice and Draft GCD was communicated to TCEQ, EPA Region 6, and the Houston-Galveston Area Council (H-GAC), which is the MPO for the HGB NAA.

### 4.1 TCEQ, EPA, and MPO Comments

The TCEQ issues a concurrence letter on August 10, 2020 (provided in Attachment A) agreeing with the USACE determination that the total direct and indirect emissions from the proposed action will not exceed the emission budgets specified in the applicable SIP.

No agency comments were received on the draft GCD during the comment period.

### 4.2 Individual and Organized Groups Comments

No individual/organized group comments were received on the draft GCD during the comment period.

## 5. FINAL General Conformity Determination

Sections 2 and 3 presented the estimated emissions from construction of the project and compared the NO<sub>x</sub> emissions from 2021 (the only year that exceeds the 50 tons per day de minimis threshold) to the latest EPA approved SIP emissions budgets for the relevant emissions categories. In summary, 2021 project construction emissions represent no more than 0.17% of the Non-Road SIP emission budget and 0.001% of the On-Road SIP emission budget. Though the emissions in 2021 exceeded the de minimis conformity threshold for NO<sub>x</sub>, they were determined in coordination with the TCEQ to be emissions that can be accommodated in the currently approved SIP.

The PHA and its consultants, on behalf of the USACE, presented a preliminary draft General Conformity determination to TCEQ in April 2020 which contained preliminary NO<sub>x</sub> and VOC project construction emissions and a comparison with the emissions budgets in the SIP. PHA indicated that the estimated NO<sub>x</sub> project construction emissions were above the de minimis thresholds in 2021 but were a small percentage of the SIP budget, and that the emissions would be anticipated to be accommodated in the latest approved EPA SIP. USACE followed with a formal submittal of a Draft General Conformity Determination in July 2020 and requested concurrence with the determination that the estimated construction NO<sub>x</sub> emissions represented a low percentage of the SIP budget and that the emissions can be accommodated in the SIP.

The TCEQ Air Quality Division issued a letter of concurrence, dated August 10, 2020. TCEQ concurred that general conformity was demonstrated pursuant to 40 CFR §93.158(a)(5)(i)(A) which requires that the state determine and document that the total direct and indirect emissions from the proposed action will not exceed the emissions budget specified in the applicable SIP. The emissions budget used for to demonstrate conformity was allocated from the Reasonable Further Progress SIP Revision for the HGB 2008 Eight-Hour Ozone Nonattainment Area, adopted by the TCEQ December 15, 2016 and approved by the EPA February 13, 2019 (84 FR 3708). Based on this budget, the TCEQ concurred with the USACE's draft determination that the project will conform to the Texas SIP.

The USACE has determined that this project will conform to the applicable state implementation plan pursuant to the General Conformity Regulations in 40 CFR Part 93, Subpart B, which specifies at 40 CFR §93.158(a)(5)(i)(A) that the state must make a determination and document that the total of direct and indirect emissions from the action, or portion thereof, would result in a level of emissions which, together with all other emissions in the HGB NAA, would not exceed the emissions budgets specified in the SIP. The determination was made considering the coordination of the project emissions in the July 2020 Draft GCD, and the concurrence of the TCEQ that these emissions could be accommodated in the currently approved SIP. Therefore, it is determined that the project emissions resulting from the Federal action will result in a level of emissions, which, together with all other emissions in the HGB NAA, would not exceed the emissions budgets specified in the SIP, and the action can be considered to conform with the HGB NAA SIP. The determination and the availability of this Final General Conformity Determination will be advertised in a public notice within 30 days of its issuance, in accordance with the requirements in 40 CFR Part 93.

## 6. References

U.S. Environmental Protection Agency (EPA). 2010a. Title 40: Protection of Environment, Part 93 – Determining Conformity of Federal Actions to State or Federal Implementation Plans, Subpart B – Determining Conformity of General Federal Actions to State or Federal Implementation Plans.

EPA. 2010b. Revisions to the General Conformity Regulations. EPA-HQ-OAR-2006-0669. Available at:  
<https://www.epa.gov/sites/production/files/2016-03/documents/20100324fs.pdf>

Attachment A

TCEQ Concurrence Letter

Jon Niermann, *Chairman*  
Emily Lindley, *Commissioner*  
Bobby Janecka, *Commissioner*  
Toby Baker, *Executive Director*



## TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

*Protecting Texas by Reducing and Preventing Pollution*

August 10, 2020

Colonel Timothy Vail  
Commander and District Engineer  
USACE Galveston District  
P.O. Box 1229  
Galveston, TX 77553-1229

Via Email

Subject: General Conformity Concurrence for the Bayport Terminal Project, Department of the Army Permit SWG 1998-01818

Dear Colonel Vail:

The Texas Commission on Environmental Quality (TCEQ) completed its review of the General Conformity Determination for the Bayport Terminal Project received July 28, 2020. The TCEQ reviewed the action in accordance with the general conformity requirements established in Title 40 Code of Federal Regulations (CFR) Part 93 Subpart B and concurs with the determination submitted by the United States Army Corp of Engineers (USACE) that the project conforms to the Texas State Implementation Plan (SIP).

The proposed action is located in the Houston-Galveston-Brazoria ozone nonattainment area, which is currently classified by the United States Environmental Protection Agency (EPA) as serious for the 2008 eight-hour ozone National Ambient Air Quality Standard (NAAQS) and marginal for the 2015 eight-hour ozone NAAQS. General conformity requirements apply according to the serious classification. The USACE presented data demonstrating that the proposed action would result in nitrogen oxides (NO<sub>x</sub>) emissions of 54.09 tons per year (tpy) in 2021, which is above the 50 tpy *de minimis* threshold for general conformity.

The general conformity demonstration for this action relies on 40 CFR §93.158(a)(5)(i)(a), which requires that the state determine and document that the total direct and indirect emissions from the proposed action will not exceed the emissions budget specified in the applicable SIP. The general conformity emissions budget used for this determination was allocated from the *Reasonable Further Progress SIP Revision for the HGB 2008 Eight-Hour Ozone Nonattainment Area*, adopted December 15, 2016 and approved by the EPA February 13, 2019 (84 FR 3708). Based on the allocated general conformity emissions budget, the TCEQ concurs with the USACE's determination.

Although the USACE sufficiently demonstrated conformity for this project, the TCEQ suggests adoption of pollution prevention and/or reduction measures, such as those listed below, in conjunction with this and future projects:

- Encourage construction contractors to apply for Texas Emissions Reduction Plan grants;
- Establish bidding conditions that give preference to contractors who proactively limit air pollutant emissions and idling of construction vehicles;

Colonel Vail  
August 10, 2020  
Page 2

- Direct construction contractors to exercise air quality best management practices such as fueling vehicles late in the day during ozone season;
- Direct contractors and operators to use newer, lower emissions vehicles and equipment whenever possible;
- Select equipment based on lowest NO<sub>x</sub> emissions instead of lowest price; and
- Purchase and permanently retire surplus NO<sub>x</sub> offsets prior to commencement of operations.

Thank you for providing the information necessary to evaluate the proposed action. We will appreciate any appropriate updates as this project progresses, and we look forward to working with you on any upcoming projects affecting air quality in Texas. If you require further assistance on this matter, please contact Jamie Zech of the Air Quality Division at 512-239-3935 or [jamie.zech@tceq.texas.gov](mailto:jamie.zech@tceq.texas.gov).

Sincerely,



Donna F. Huff, Director  
Air Quality Division

cc: David Garcia, Air and Radiation Division Director, EPA Region 6