

ENVIRONMENTAL ASSESSMENT

**Anclothe River, Florida Project and Gulf
Intracoastal Waterway (GIWW) Cut P-41
Pinellas & Pasco Counties**

MAINTENANCE DREDGING AND DREDGED MATERIAL PLACEMENT

NEPA ID: EAXX-202-00-K3P-1765294248

APPENDIX F

Air Quality

U.S. ARMY CORPS OF ENGINEERS

JACKSONVILLE DISTRICT



**U.S. Army Corps of Engineers
JACKSONVILLE DISTRICT**

Summary Tables

Table 1. Gross Emissions for Anclote River Alternatives 2A/2B, 3B, 3C and 3D

GHG	Fuel (gal)	Emissions Factor (g/gal)	Total Produced (MT)	CO₂e (MT)
CO₂	1,210,000	10,210.00	12,354.10	12,354
CH₄	1,210,000	6.51	7.88	197
N₂O	1,210,000	0.17	0.21	61
			Total	12,612

Anclote River, Florida Project, Pinellas & Pasco Counties
 Maintenance Dredging and Dredged Material Placement
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Calculation of O&M Emissions Using Fuel Volumes					
	GHG	Fuel Volume ¹ (Gallons)	Emissions Factor ² (Grams of Emissions/ Gallons of Fuel)	Emissions ³ (grams)	Fuel Volumes Debugging - Error Message
No Action Alternative (No Dredging)	CO ₂	0	10,210.00	0.00	Input Fuel Volume Data
	CH ₄	0	1.01	0.00	Input Fuel Volume Data
	N ₂ O	0	0.94	0.00	Input Fuel Volume Data

Calculation of O&M Emissions Using Fuel Volumes					
	GHG	Fuel Volume ¹ (Gallons)	Emissions Factor ² (Grams of Emissions/ Gallons of Fuel)	Emissions ³ (grams)	Fuel Volumes Debugging - Error Message
Alternative 2A/2B + 3B, 3C + 3D	CO ₂	110,000	10,210.00	1,123,100,000.00	Sufficient Data Has Been Input
	CH ₄	110,000	6.51	716,100.00	Sufficient Data Has Been Input
	N ₂ O	110,000	0.17	18,700.00	Sufficient Data Has Been Input

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Total O&M Emissions from Fuel and Miles

		Emissions Total (grams)	Emissions Total (pounds)	Emissions Total (Metric Tons)
No Action Alternative (No Dredging)	CO ₂	Input Data	Input Data	Input Data
	CH ₄	Input Data	Input Data	Input Data
	N ₂ O	Input Data	Input Data	Input Data

Lifetime O&M Emissions from Fuel and Miles

		Emissions Total (grams)	Emissions Total (pounds)	Emissions Total (Metric Tons)
No Action Alternative (No Dredging)	CO ₂	#VALUE!	#VALUE!	#VALUE!
	CH ₄	#VALUE!	#VALUE!	#VALUE!
	N ₂ O	#VALUE!	#VALUE!	#VALUE!

Total O&M Emissions from Fuel and Miles

		Emissions Total (grams)	Emissions Total (pounds)	Emissions Total (Metric Tons)
Alternative 2A/2B + 3B, 3C + 3D	CO ₂	1,123,100,000	2476013.686	1123.1
	CH ₄	716,100	1578.731547	0.7161
	N ₂ O	18,700	41.22647666	0.0187

Lifetime O&M Emissions from Fuel and Miles

		Emissions Total (grams)	Emissions Total (pounds)	Emissions Total (Metric Tons)
Alternative 2A/2B + 3B, 3C + 3D	CO ₂	12,354,100,000	27236150.55	12,354.10
	CH ₄	7,877,100	17366.04702	7.88
	N ₂ O	205,700	453.4912432	0.21

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Annual O&M Emissions from Fuel and Miles

		Emissions Total (grams)	Emissions Total (pounds)	Emissions Total (Metric Tons)
No Action Alternative (No Dredging)	CO ₂	#VALUE!	#VALUE!	#VALUE!
	CH ₄	#VALUE!	#VALUE!	#VALUE!
	N ₂ O	#VALUE!	#VALUE!	#VALUE!

NEAT Input ↓

		Emissions Total (grams)
Total No Action Alternative	CO ₂	#VALUE!
	CH ₄	#VALUE!
	N ₂ O	#VALUE!

Annual O&M Emissions from Fuel and Miles

		Emissions Total (grams)	Emissions Total (pounds)	Emissions Total (Metric Tons)
Alternative 2A/2B + 3B, 3C + 3D	CO ₂	247,082,000	544723.011	247.082
	CH ₄	157,542	347.32094	0.157542
	N ₂ O	4,114	9.06982486	0.004114

NEAT Input ↓

		Emissions Total (grams)	CO ₂ e (g)	CO ₂ e (MT)	CO ₂ e (MT)
			Annual	Total	
Total Alternative 2A/2B + 3B, 3C + 3D	CO ₂	247,082,000	247,082,000	247	12,354
	CH ₄	157,542	3,938,550	4	197
	N ₂ O	4,114	1,225,972	1	61
			252,246,522	252	12,612

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A model can be theoretically perfect, but the quality of the outputs are still dependent on the data that is used!

PEAT Model Step	Data Source	Assumptions
Step 1: Project Data	PD-EC (Case), PM-W (LaGrone)	Dredging Alternatives 2A and 2B generate the same emissions.
Step 2: Construction Emissions	SAJ-EN-C (Angell)	No dredging required for new cuts. Only placement areas 3B, 3C and 3D carried forward.
Step 3: O&M Emissions	SAJ-EN-C (Angell)	Dredge 5-year intervals
Step 4: Wetland and Aquatic Habitat Emissions	None	
Step 5: Embodied Carbon in Materials	N/A	
Step 6: Net Emissions	PEAT v2	O&M Events Only

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Enter the project information below, your inputs will be used for various model calculations and outputs.

Alternative Sequential Identifier	Input Names for Project Alternatives/Construction Phases:	Construction Timing			Operations & Maintenance, Monitoring and Management Timing		
		Starting Year	Ending Year	Construction Years Total	Starting Year	Ending Year	O&M Project Lifetime (default is 50 years)
1	No Action	2027	2027	1	2028	2078	50
2	Alternative 2A/2B +3B, 3C + 3D	2027	2027	1	2028	2078	50
3	Alternative 3	Choose Construction Starting Year	Choose Construction End Year	Ending year input must be equal or more than starting year value	Choose a Construction End Year First	Choose a Construction End Year First	50
4	Alternative 4	Choose Construction Starting Year	Choose Construction End Year	Ending year input must be equal or more than starting year value	Choose a Construction End Year First	Choose a Construction End Year First	50
5	Alternative 5	Choose Construction Starting Year	Choose Construction End Year	Ending year input must be equal or more than starting year value	Choose a Construction End Year First	Choose a Construction End Year First	50
6	Alternative 6	Choose Construction Starting Year	Choose Construction End Year	Ending year input must be equal or more than starting year value	Choose a Construction End Year First	Choose a Construction End Year First	50
7	Alternative 7	Choose Construction Starting Year	Choose Construction End Year	Ending year input must be equal or more than starting year value	Choose a Construction End Year First	Choose a Construction End Year First	50
8	Alternative 8	Choose Construction Starting Year	Choose Construction End Year	Ending year input must be equal or more than starting year value	Choose a Construction End Year First	Choose a Construction End Year First	50

Note - the O&M project lifetime gets used to calculate Net emissions and also carries through to the social costs which are calculated for each specific year.
 The dates of construction start and end carry through most all subsequent steps for calculations

Choose the no-action alternative from the drop down menu below:

No Action

Note: drop down menu will not automatically refresh when a new name is written for the no-action alternative above, and must be re-selected from the drop down menu after changing the name.

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No Action Years	Yearly O&M Emissions			Project Lifetime O&M Emissions		
	1			50		
	Grams	Pounds	Metric Tons	Grams	Pounds	Metric Tons
Air Quality Pollutant Emissions (Clean Air Act)						
Reactive Organic Gases aka Volatile Organic Compounds (ROG/VOC)		0.00	0.00	0.00	0.00	0.00
Carbon Monoxide (CO)		0.00	0.00	0.00	0.00	0.00
Sulfur Oxides (SOx)		0.00	0.00	0.00	0.00	0.00
Nitrous Oxides (NOx)		0.00	0.00	0.00	0.00	0.00
Particulate Matter - 2.5 micron (PM _{2.5})		0.00	0.00	0.00	0.00	0.00
Particulate Matter - 10 micron (PM ₁₀)		0.00	0.00	0.00	0.00	0.00
Lead - (Pb)		0.00	0.00	0.00	0.00	0.00
Greenhouse Gas Emissions (NEPA)						
Carbon Dioxide (CO ₂)	0.00	0.00	0.00	0.00	0.00	0.00
Methane (CH ₄)	0.00	0.00	0.00	0.00	0.00	0.00
Nitrous Oxide (N ₂ O)	0.00	0.00	0.00	0.00	0.00	0.00

Alternative 2A/2B +3B, 3C + 3D Years	Yearly O&M Emissions			Project Lifetime O&M Emissions		
	1			50		
	Grams	Pounds	Metric Tons	Grams	Pounds	Metric Tons
Air Quality Pollutant Emissions (Clean Air Act)						
Reactive Organic Gases aka Volatile Organic Compounds (ROG/VOC)		0.00	0.00	0.00	0.00	0.00
Carbon Monoxide (CO)		0.00	0.00	0.00	0.00	0.00
Sulfur Oxides (SOx)		0.00	0.00	0.00	0.00	0.00
Nitrous Oxides (NOx)		0.00	0.00	0.00	0.00	0.00
Particulate Matter - 2.5 micron (PM _{2.5})		0.00	0.00	0.00	0.00	0.00
Particulate Matter - 10 micron (PM ₁₀)		0.00	0.00	0.00	0.00	0.00
Lead - (Pb)		0.00	0.00	0.00	0.00	0.00
Greenhouse Gas Emissions (NEPA)						
Carbon Dioxide (CO ₂)	247,082,000.00	544,723.01	247.08	12,354,100,000.00	27,236,150.55	12,354.12
Methane (CH ₄)	157,542.00	347.32	0.16	7,877,100.00	17,366.05	7.88
Nitrous Oxide (N ₂ O)	4,114.00	9.07	0.00	205,700.00	453.49	0.21