
Appendix G

Air Quality

Summary Tables

Table 1. Gross Construction Emissions for IRL-S Alternative A

GHG	Fuel (gal)	Total Emissions (g)	Total Emissions (MT)	CO₂e (MT)
CO₂	45,000	459,450,000	459.45	459.45
CH₄	45,000	45,450	0.05	1.14
N₂O	45,000	42,300	0.04	12.61
Total				473.19

Table 2. Annual Construction Emissions for IRL-S Alternative A

GHG	Fuel (gal)	Total Emissions (g)	Total Emissions (MT)	CO₂e (MT)
CO₂	9,000	91,890,000	91.89	91.89
CH₄	9,000	9,090	0.01	0.23
N₂O	9,000	8,460	0.01	2.52
Total				94.64

Indian River Lagoon-South, Florida
Integrated Recreational Draft Validation Report and Environmental Assessment
Air Quality Appendix

Calculation of 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	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 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 A	CO ₂	45,000	10,210.00	459,450,000.00	Sufficient Data Has Been Input
	CH ₄	45,000	1.01	45,450.00	Sufficient Data Has Been Input
	N ₂ O	45,000	0.94	42,300.00	Sufficient Data Has Been Input

Indian River Lagoon-South, Florida
Integrated Recreational Draft Validation Report and Environmental Assessment
Air Quality Appendix

Total Emissions from Fuel and Miles

		Emissions Total (grams)	Emissions Total (pounds)	Emissions Total (Metric Tons)	CO ₂ e MT
No Action	CO ₂	Input Data	Input Data	Input Data	#VALUE!
	CH ₄	Input Data	Input Data	Input Data	#VALUE!
	N ₂ O	Input Data	Input Data	Input Data	#VALUE!
Σ					#VALUE!

Total Emissions from Fuel and Miles

		Emissions Total (grams)	Emissions Total (pounds)	Emissions Total (Metric Tons)	CO ₂ e MT
Alternative A	CO ₂	459,450,000	1012914.69	459.45	459.45
	CH ₄	45,450	100.2001799	0.05	1.14
	N ₂ O	42,300	93.25561297	0.04	12.61
Σ					473.19

PEAT Input ↓

Annual Emissions from Fuel and Miles

	Emissions Total (grams)	Emissions Total (pounds)	Emissions Total (Metric Tons)
CO ₂	#VALUE!	#VALUE!	#VALUE!
CH ₄	#VALUE!	#VALUE!	#VALUE!
N ₂ O	#VALUE!	#VALUE!	#VALUE!

Annual Emissions from Fuel and Miles

	Emissions Total (grams)	Emissions Total (pounds)	Emissions Total (Metric Tons)	CO ₂ e MT
CO ₂	91,890,000	202582.938	91.89	91.89
CH ₄	9,090	20.040036	0.01	0.23
N ₂ O	8,460	18.6511226	0.01	2.52
Σ				94.64

Indian River Lagoon-South, Florida
Integrated Recreational Draft Validation Report and Environmental Assessment
Air Quality Appendix

A model can be theoretically perfect, but the quality of the outputs are still dependent on the data that is used! Please use the space below to tra

PEAT Model Step	Data Source	Assumptions
Step 1: Project Data	IRL-S Integrated Recreation Draft Validation Report and Environmental Assessment.	No Action = No features constructed
Step 2: Construction Emissions	Nancy Hutton., EN-C	One action alternative: Alt. A
Step 3: O&M Emissions		N/A
Step 4: Wetland and Aquatic Habitat Emissions		N/A
Step 5: Embodied Carbon in Materials		N/A
Step 6: Net Emissions		Construction emissions only

Indian River Lagoon-South, Florida
Integrated Recreational Draft Validation Report and Environmental Assessment
Air Quality Appendix

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	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
2	Alternative A	2030	2035	5	2036	2086	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.

Indian River Lagoon-South, Florida
Integrated Recreational Draft Validation Report and Environmental Assessment
Air Quality Appendix

No Action	Year:	Choose Construction Start and End Years in the Project Data Sheet			Choose Construction Start and End Years in the Project Data Sheet			Choose Construction Start and End Years in the Project Data Sheet			Choose Construction Start and End Years in the Project Data Sheet			Choose Construction Start and End Years in the Project Data Sheet		
Air Quality Pollutant Emissions (Clean Air Act)		Grams	Pounds	Metric Tons	Grams	Pounds	Metric Tons	Grams	Pounds	Metric Tons	Grams	Pounds	Metric Tons	Grams	Pounds	Metric Tons
Reactive Organic Gases aka Volatile Organic Compounds (ROG/VOC)			0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00
Carbon Monoxide (CO)			0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00
Sulfur Oxides (SOx)			0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00
Nitrous Oxides (NOx)			0.00	0.00		0.00	0.00		0.00	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	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	0.00		0.00	0.00		0.00	0.00
Lead (Pb)			0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00
Greenhouse Gas Emissions (NEPA)	Year:	Choose Construction Start and End Years in the Project Data Sheet			Choose Construction Start and End Years in the Project Data Sheet			Choose Construction Start and End Years in the Project Data Sheet			Choose Construction Start and End Years in the Project Data Sheet			Choose Construction Start and End Years in the Project Data Sheet		
Carbon Dioxide (CO ₂)		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	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	0.00	0.00	0.00	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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Alternative A	Year:	2030			2031			2032			2033			2034		
Air Quality Pollutant Emissions (Clean Air Act)		Grams	Pounds	Metric Tons	Grams	Pounds	Metric Tons	Grams	Pounds	Metric Tons	Grams	Pounds	Metric Tons	Grams	Pounds	Metric Tons
Reactive Organic Gases aka Volatile Organic Compounds (ROG/VOC)			0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00
Carbon Monoxide (CO)			0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00
Sulfur Oxides (SOx)			0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00
Nitrous Oxides (NOx)			0.00	0.00		0.00	0.00		0.00	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	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	0.00		0.00	0.00		0.00	0.00
Lead (Pb)			0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00		0.00	0.00
Greenhouse Gas Emissions (NEPA)	Year:	2030			2031			2032			2033			2034		
Carbon Dioxide (CO ₂)		91,890,000.00	202,582.94	91.89	91,890,000.00	202,582.94	91.89	91,890,000.00	202,582.94	91.89	91,890,000.00	202,582.94	91.89	91,890,000.00	202,582.94	91.89
Methane (CH ₄)		9,090.00	20.04	0.01	9,090.00	20.04	0.01	9,090.00	20.04	0.01	9,090.00	20.04	0.01	9,090.00	20.04	0.01
Nitrous Oxide (N ₂ O)		8,460.00	18.65	0.01	8,460.00	18.65	0.01	8,460.00	18.65	0.01	8,460.00	18.65	0.01	8,460.00	18.65	0.01

Indian River Lagoon-South, Florida
Integrated Recreational Draft Validation Report and Environmental Assessment
Air Quality Appendix

Gross and Net Total Emissions for the project alternatives are calculated below:

				Include O&M Air Pollutant Emissions In Net Calculations			YES
No Action				Gross Emissions			Net Emissions
Pollutant Emissions (Clean Air Act)	Grams	Pounds	Metric Tons	Grams	Pounds	Metric Tons	
Reactive Organic Gases aka Volatile Organic Compounds (ROG/VOC)	0	0	0	0	0	0	
Carbon Monoxide (CO)	0	0	0	0	0	0	
Sulfur Oxides (SOx)	0	0	0	0	0	0	
Nitrous Oxides (NOx)	0	0	0	0	0	0	
Particulate Matter - 2.5 micron (PM _{2.5})	0	0	0	0	0	0	
Particulate Matter - 10 micron (PM ₁₀)	0	0	0	0	0	0	
Lead - (Pb)	0	0	0	0	0	0	
Greenhouse Gas Emissions (NEPA)							
Carbon Dioxide (CO ₂)	0	0	0	0	0	0	
Methane (CH ₄)	0	0	0	0	0	0	
Nitrous Oxide (N ₂ O)	0	0	0	0	0	0	
Carbon Dioxide Equivalents (CO ₂ e)	0	0	0	0	0	0	
Alternative A							
Pollutant Emissions (Clean Air Act)	Grams	Pounds	Metric Tons	Grams	Pounds	Metric Tons	
Reactive Organic Gases aka Volatile Organic Compounds (ROG/VOC)	0	0	0	0	0	0	
Carbon Monoxide (CO)	0	0	0	0	0	0	
Sulfur Oxides (SOx)	0	0	0	0	0	0	
Nitrous Oxides (NOx)	0	0	0	0	0	0	
Particulate Matter - 2.5 micron (PM _{2.5})	0	0	0	0	0	0	
Particulate Matter - 10 micron (PM ₁₀)	0	0	0	0	0	0	
Lead - (Pb)	0	0	0	0	0	0	
Greenhouse Gas Emissions (NEPA)							
Carbon Dioxide (CO ₂)	459,450,000	1,012,915	459	459,450,000	1,012,915	459	
Methane (CH ₄)	45,450	100	0	45,450	100	0	
Nitrous Oxide (N ₂ O)	42,300	93	0	42,300	93	0	
Carbon Dioxide Equivalents (CO ₂ e)	473,191,650	1,043,210	473	473,191,650	1,043,210	473	