APPENDIX L
AIR QUALITY SUPPORTING INFORMATION

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ACRONYMS AND ABBREVIATIONS

ACAM	Air Conformity Applicability Model
CFR	Code of Federal Regulations
NAAQS	National Ambient Air Quality Standards
ROAA	record of air analysis
RONA	Record of Non-Applicability
USACE	U.S. Army Corps of Engineers

L.1 Introduction

This appendix provides the Air Conformity Applicability Model (ACAM) report and record of air analysis (ROAA) for the various measures proposed under the C&SF Section 203 Study's final array of alternatives (Alternatives A, B, C, and RO).

The U.S. Army Corps of Engineers (USACE) used Air Force's ACAM to analyze a net change in emissions and assess the potential air quality impacts associated with Alternatives A, B, C, and RO. The analysis was performed in accordance with Air Force Manual (AFMAN) 32-7002, *Environmental Compliance and Pollution Prevention*; the Department of the Air Force (DAF) Environmental Impact Analysis Process (EIAP) (Title 32 of the Code of Federal Regulations [CFR] Part 989); and the General Conformity Rule (40 CFR §§ 93.150–93.165). This report provides a summary of the ACAM analysis.

Total combined direct and indirect emissions associated with Alternatives A, B, C, and RO, were estimated through ACAM on a calendar-year basis for the "worst case" and "steady state" (net gain/loss upon action fully implemented) emissions. Steady state emissions are based on the worst-case emissions operating year. Construction and operational emissions from Alternatives A, B, C, and RO, are presented in **Table L.3-1** and **Table L.3-3**, respectively. General Conformity under Section 1.76 of the Clean Air Act has been evaluated for the action described above according to the requirements of 40 CFR 93 Subpart B.

L.2 Air Impact Analysis

Based on the attainment status at the action location, the requirements of the General Conformity Rule are not applicable. Total reasonably foreseeable net direct and indirect emissions associated with the action were estimated through ACAM on a calendar-year basis for the start of the action through achieving steady-state emissions (i.e., no net gain/loss in emission stabilized once the action is fully implemented). The ACAM analysis uses the latest and most accurate emission estimation techniques available; all algorithms, emission factors, and methodologies used are described in detail in *Air Emissions Guide for Air Force Stationary Sources*, *Air Emissions Guide for Air Force Mobile Sources*, and *Air Emissions Guide for Air Force Transitory Sources* (AFCEC 2025a,b,c).

"Insignificance indicators" were used in the analysis to provide an indication of the significance of the potential impact of Alternatives A, B, C, and RO, on local air quality. The insignificant indicators are trivial (de minimis) rate thresholds that have been demonstrated to have little to no impact on air quality. The insignificance indicators are the 250-ton-per-year Prevention of Significant Deterioration major source threshold and 25 tons per year for lead (Pb) for actions occurring in areas that are in attainment (not exceeding any of the National Ambient Air Quality Standards [NAAQS]). The indicators do not define a significant impact; however, they do provide a threshold to use in identifying actions that are insignificant. Any action with net emissions below the insignificance indicators for all criteria pollutants is considered so insignificant that the action will not cause or contribute to an exceedance of any NAAQS.

L.3 Air Impact Analysis Results Summary

None of the estimated annual net emissions associated with Alternatives A, B, C, and RO, are above the insignificance indicators; therefore, the alternatives will not cause or contribute to an exceedance of one or more of the NAAQS and will have an insignificant impact on air quality. No further air assessment is

needed. The alternatives' net emissions for every year through achieving steady state were compared against the insignificance indicators and are summarized in **Table L.3-1**, **Table L.3-2**, and **Table L.3-3**. The full ACAM reports are provided in Annex A.

Table L.3-1. ROAA ACAM and Summary Report–Estimated Construction Emissions for Alternatives A, B, C, and RO.

Alternative	VOC	NH3	SOx	NOx	CO	PM10	PM2.5	Pb	Exceedance
De minimis threshold	250.00	250.00	250.00	250.00	250.00	250.00	250.00	25.00	No
Alternative A (5-year annual)	0.321	0.008	0.033	2.560	2.847	62.97	0.111	0	No
Alternative B (5-year annual)	1.8554	0.008	0.0024	1.0212	1.253	22.8602	0.0358	0	No
Alternative C (5-year annual)	1.497	0.044	0.0044	1.9788	2.2852	32.9318	0.01	0	No
Alternative RO (5-year annual)	0.299	0.005	0.00	0.777	1.332	46.892	0.010	0	No

Source: ACAM reports (Annex A).

Notes: Alternative A includes minor canal profile changes. All values are provided as tons per year. VOC = volatile organic compound; NH_3 = ammonia; SO_x = sulfur oxides; NO_x = nitrogen oxides; CO = carbon monoxide; PM_{10} = inhalable particulate matter with a diameter generally 10 µm or smaller; $PM_{2.5}$ = fine inhalable particulate matter with a diameter generally 2.5 micrometers (µm) or smaller; Pb = lead

Table L.3-2. Five Year Average Report–Emissions from Dredging.

Alternative	VOC	NH3	SOx	NOx	CO	PM10	PM2.5	Pb	Exceedance
De minimis threshold	250.00	250.00	250.00	250.00	250.00	250.00	250.00	25.00	No
Alternative B (5-year annual)	0.732	0.69	0.69	44.98	17.03	1.616	1.568	0	No
Alternative C (5-year annual)	1.70	1.61	1.70	98.81	29.88	3.58	3.47	0	No
Alternative RO (5-year annual)	0.732	0.69	0.69	44.98	17.03	1.616	1.568	0	No

Source: Bureau of Ocean Energy Management dredging emission calculator (ENVIRON International Corp. and Woods Hole Group 2013)
Notes: All values are provided as tons per year. VOC = volatile organic compound; NH3 = ammonia; SOx = sulfur oxides; NOx = nitrogen oxides; CO = carbon monoxide; PM10 = inhalable particulate matter with a diameter generally 10 µm or smaller; PM2.5 = fine inhalable particulate matter with a diameter generally 2.5 micrometers (µm) or smaller; Pb = lead

Table L.3-3. ROAA ACAM Summary Report–Estimated Operations Emissions for Alternatives A, B, C, and RO.

Alternative	VOC	NH3	SOx	NOx	CO	PM10	PM2.5	Pb	Exceedance
De minimis threshold	250.00	250.00	250.00	250.00	250.00	250.00	250.00	25.00	No
Alternative A	-0.460	0	-0.480	1.775	-0,481	-0.380	0	0	No
Alternative B (annual)	0.050	0	-0.135	7.092	1.611	0.095	0.095	0	No
Alternative C (annual)	0.172	0	-0.091	9.889	2.437	02.20	0.220	0	No
Alternative RO (annual)	0.064	0	-0.040	3.937	0.963	0.084	0.084	0	No

Source: ACAM reports (Annex A).
Notes: Alternative A includes minor canal profile changes. All values are provided as tons per year. VOC = volatile organic compound; NH3 = ammonia; SOx = sulfur oxides; NOx = nitrogen oxides; CO = carbon monoxide; PM10 = inhalable particulate matter with a diameter generally 10 µm or smaller; PM2.5 = fine inhalable particulate matter with a diameter generally 2.5 micrometers (µm) or smaller; Pb = lead

L.4 Assumptions

L.4.1 Alternative A

Table L.4-1 outlines the scope and scale of various construction and site preparation activities proposed under Alternative A. Work would occur across seven specified locations (G-56 Gated Spillway, G-57 Gated Spillway, S-37B Gated Spillway, S-37A Gated Spillway, S-36 Gated Spillway, S-33 Gated Spillway, and S-13 Pump Station and Gated Spillway). Activities include soil removal, demolition, land disturbance, tree removal, new building construction, dewatering, riprap installation, structural backfill, asphalt pavement removal, and topsoil stripping. Dewatering is the most voluminous activity, with 2.5 million units consistently reported across nearly all locations, excluding S-37A Gated Spillway and G-56 Gated Spillway. Land disturbance and new construction also represent large-scale efforts, particularly at S-33 Gated Spillway and G-57 Gated Spillway. Demolition activities are prominent at S-13 Pump Station and Gated Spillway, S-33 Gated Spillway, and S-37B Gated Spillway. In contrast, tree removal is minimal and largely confined to S-13 Pump Station and Gated Spillway, S-33 Gated Spillway, S-36 Gated Spillway, and S-37B Gated Spillway. Riprap and backfill installation, along with pavement removal and topsoil stripping, show varied implementation across locations, reflecting localized needs for erosion control, structural support, and surface preparation.

Table L.4-1. ROAA Worse case Assumptions under Alternatives.

				Volume/Area by Location					
Activity	Description	Units	S-13 Pump Station and Gated Spillway	S-33 Gated Spillway	S-37B Gated Spillway	S-36 Gated Spillway	G-54 Gated Spillway	G-56 Gated Spillway	G-57 Gated Spillway
Soil Removal	General	CY	10,000	3,000	1,700	14,000	600	600	1,600
Demolition (Cofferdam and Structures)	General (unspecified)	CF	135,000	152,000	90,000	94,500	3,000	3,000	0
Land Disturbance	General	SF	282,500	1,200,000	310,000	223,000	86,000	86,000	339,000
Tree Removal	General	CY	145	100	100	100	0	0	0
New Construction/ Buildings	New Construction	SF	300,000	207,000	68,300	82,000	8,000	8,000	250,000
Dewatering	Canal and excavation areas	gal	2,500,000	2,500,000	2,500,000	2,500,000	0	0	2,500,000
Riprap Installation	Downstream channel banks	SF	147,000	60,000	132,000	49,500	122,000	122,000	0
Structural Backfill	Around new pump station structures	CY	3,300	1,100	1,100	4,500	1,000	1,000	0
Asphalt Pavement Removal	Access roads near pump system	SF	37,400	11,000	88,000	27,000	54,000	54,000	54,000
Topsoil Stripping	Vegetated areas within disturbance zone	SF	252,000	207,000	80,000	180,000	8,000	8,000	339,000

Source: Estimated Using Soil Disturbance Area in Cost Estimates (UFC 1-200-01, UFC 1-200-02); Army Cost Analysis Manual 2020; and Independent Government Cost Estimate Handbook Feb 2023.
Notes: CY = cubic yards; SF = square feet; gal = gallons

L.4.2 Alternatives B, C, and RO

Table L.4-2 outlines the scope and scale of various construction and site preparation activities proposed under Alternatives B and C and RO. These encompass a range of activities spread across several general and site-specific locations, each varying in scale and scope. Soil removal and pile operations cover significant areas, with the largest volumes occurring at the G-57 Gated Spillway (853,500 square feet), followed by S-37A Gated Spillway (294,000 square feet) and S-36 Gated Spillway (210,000 square feet), indicating concentrated remediation or preparation activities. Demolition of coffer dams and associated structures also spans large areas, particularly at G-54 Gated Spillway (301,650 square feet), S-36 Gated Spillway (187,800 square feet), and S-33 Gated Spillway (152,000 square feet), reflecting extensive infrastructure removal. Land disturbance, a major component of site development, is most intensive at S-33 Gated Spillway (1,200,000 square feet) and G-57 Gated Spillway (341,500 square feet), with all locations exceeding 282,500 square feet. Tree removal is relatively limited in volume but consistently required at nearly all locations, averaging about 100 cubic yards per site, with the highest volumes at S-13 Pump Station and Gated Spillway and G-57 Gated Spillway (145 cubic yards each). New building

construction is prominent at G-57 Gated Spillway (733,900 square feet), G-56 Gated Spillway (626,200 square feet), and G-54 Gated Spillway (613,000 square feet), pointing to substantial development phases in those locations. A large-scale dewatering operation is uniform across all locations, with each requiring approximately 2.5 million gallons, underscoring high groundwater or water table management needs. Riprap installation, focused on downstream channel banks, is notably extensive at S-13 Pump Station and Gated Spillway (147,000 square feet) and S-37A Gated Spillway (174,000 square feet), essential for erosion control. Structural backfill activities are uniformly distributed, with each location requiring 3,300 cubic yards, indicating standard construction around pump station infrastructure. Asphalt pavement removal and replacement occurs primarily at S-37A Gated Spillway (369,560 square feet) and S-13 Pump Station and Gated Spillway (37,400 square feet), representing major access road improvements or upgrades. Finally, topsoil stripping, vital for site preparation, reaches peak volumes at S-37A Gated Spillway and G-57 Gated Spillway (300,000 square feet each), reflecting significant earthworks across the project footprint. The same emission models and assumptions applied under Alternative B and RO were used for operation, maintenance, repair, replacement, and rehabilitation, but using inputs based on the WCS improvements proposed under these alternatives.

Table L.4-2. ROAA ACAM Assumptions Alternatives B, C, and RO.

			Volume/Area by Location							
Activity	Description	Units	S-13 Pump Station and Gated Spillway	S-33 Gated Spillway	S-37B Gated Spillway	S-37A Gated Spillway	S-36 Gated Spillway	G-54 Gated Spillway	G-56 Gated Spillway	G-57 Gated Spillway
Soil Removal	General	CY	10,000	3,000	1,700	294,000	210,000	200,000	100,000	853,500
Demolition (Cofferdam and Structures)	General (unspecified)	CF	135,000	152,000	90,000	138,000	187,800	301,650	266,000	87700
Land Disturbance	General	SF	282,500	1,200,000	310,000	602,320	292,160	326,600	273,560	341,500
Tree Removal	General	CY	145	100	100	100	100		100	145
New Construction/Buildings	New Construction	SF	300,000	207,000	68,300	273,350	307,450	613,000	626,200	733,900
Dewatering	Canal and excavation areas	gal	2,500,000	2,500,000	2,500,000	2,500,000	2,500,000	2,500,000	2,500,000	2,500,000
Riprap Installation	Downstream channel banks	SF	147,000	60,000	132,000	174,000	113,000	132,000	115,200	21000
Structural Backfill	Around new pump station structures	CY	3,300	3,300	3,300	3,300	3,300	3,300	3,300	3,300
Asphalt Pavement Removal and replacement	Access roads near pump system	SF	37,400	11,000	88,000	369,560	18,600	88,000	50,760	5,400
Topsoil Stripping	Vegetated areas within disturbance zone	SF	252,000	207,000	80,000	300,000	200,000	200,000	100,000	300,000

Source: Estimated Using Soil Disturbance Area in Cost Estimates (UFC 1-200-01, UFC 1-200-02); Army Cost Analysis Manual 2020; and Independent Government Cost Estimate Handbook Feb 2023.
Notes: CY = cubic yards; SF = square feet; gal = gallons

L.5 Dredging Projects Emission Calculator Output

Alternatives B, C, and RO, propose canal conveyance improvements (i.e., dredging). Alternative B proposes canal conveyance improvements (i.e., dredging) in the G-08 (Hillsboro) Canal, C-14 (Cypress Creek) Canal, and C-11 (South New River) Canal. Alternative C proposes canal improvements in the G-08 (Hillsboro) Canal, C-14 (Cypress Creek) Canal, C-13 (Middle River) Canal, C-12 (Plantation) Canal, G-15 (North New River), and C-11 (South New River) Canal. Alternative RO proposes canal improvements in the same canals as Alternative B but at a reduced scope. The Dredging Projects Emissions Calculator, developed in Microsoft Access 2007, was used to generate the emissions data summarized in **Table L.5-1**, **Table L.5-2**, and **Table L.5-3,** below. The calculator stores required information, provides a simple user interface for data input, performs all necessary calculations, and provides both tabular reports and spreadsheet-compatible data export. A data model was developed to satisfy emission calculation and reporting requirements while maintaining data integrity and consistency.

Table L.5-1. ROAA Dredging Calculator Output for Alternative C.

Type	Name	Subtype	Quantity	HC (tons)	VOC (tons)	CO (tons)	NOx (tons)	PM10 (tons)	PM2.5 (tons)	CO_2 (tons)
Auxiliary Vessels	Crew Boat	Crew Boat	1	0.192	0.202	1.14	7.1	0.163	0.158	483
Auxiliary	Pump	Tender	3	6.19	6.52	92.4	385	14.3	13.9	3.14e+04
Auxiliary Vessels	Tow Boat	Tow Boat	1	0.384	0.404	2.56	13.1	0.27	0.262	965
Auxiliary Vessels	Vessel	Tow Boat	1	1.03	1.09	15.4	64.2	2.39	2.32	5.23e+03
Auxiliary Vessels	BB	Tow Boat	3	0.172	0.181	34.3	22.3	0.687	0.666	1.17e+04
Shore Equipment	BB	Crawler Tractors	1	0.0222	0.0234	0.0213	0.0549	0.00199	0.00193	90
Shore Equipment	BB	Excavators	1	0.022	0.0231	0.0199	0.0493	0.00173	0.00168	89.1
Shore Equipment	BB	Off-highway Trucks	1	0.023	0.0242	0.021	0.049	0.00184	0.00178	93.3
Dredge Vessel	BB	Vessel-mounted	3	0.0174	0.0183	3.48	2.26	0.0695	0.0674	1.18e+03
		Total		**8.06**	**8.48**	**149**	**494**	**17.9**	**17.4**	**5.12e+04**
		5-year Annual Average		**1.61**	**1.7**	**29.9**	**98.8**	**3.58**	**3.47**	**1.02e+04**

Notes: CO = carbon monoxide; CO2 = carbon dioxide; HC= Hydrocarbons; NH3 = ammonia; NOx = nitrogen oxides; PM2.5 = fine inhalable particulate matter with a diameter generally 2.5 micrometers (μm) or smaller; PM10 = inhalable particulate matter with a diameter generally 10 μm or smaller; SOx = sulfur oxides; VOC = volatile organic compound

Table L.5-2. ROAA Dredging Calculator Output for Alternative B.

Type	Name	Subtype	Quantity	HC (tons)	VOC (tons)	CO (tons)	NOx (tons)	PM10 (tons)	PM2.5 (tons)	CO_2 (tons)
Auxiliary Vessel	Crew Boat	Crew Boat	1	0.191	0.201	1.136	7.104	0.163	0.158	482.645
Auxiliary Vessel	Boat	Boat	1	2.064	2.173	30.812	128.334	4.775	4.632	10467.030
Auxiliary Vessel	Vessel	Tow Boat	1	1.032	1.086	15.406	64.167	2.387	2.316	5233.515
Auxiliary Vessel	BB	Tow Boat	3	0.171	0.180	34.327	22.313	0.686	0.665	11661.226
Dredge Vessel	BB	Vessel-mounted Pump	3	0.017	0.018	3.476	2.259	0.069	0.067	1180.883
		Total		**3.477**	**3.661**	**85.159**	**224.177**	**8.083**	**7.840**	**29025.300**
		5-Year Annual Average		**0.695**	**0.732**	**17.031**	**44.835**	**1.616**	**1.568**	**5805.060**

Notes: CO = carbon monoxide; CO2 = carbon dioxide; HC= Hydrocarbons; NH3 = ammonia; NOx = nitrogen oxides; PM2.5 = fine inhalable particulate matter with a diameter generally 2.5 micrometers (µm) or smaller; PM10 = inhalable particulate matter with a diameter generally 10 µm or smaller; SOx = sulfur oxides; VOC = volatile organic compound

Table L.5-3. ROAA Dredging Calculator Output for Alternative RO.

Type	Name	Subtype	Quantity	HC (tons)	VOC (tons)	CO (tons)	NOx (tons)	PM10 (tons)	PM2.5 (tons)	CO_2 (tons)
Auxiliary Vessel	Crew Boat	Crew Boat	2	0.0383	0.040	0.227	1.420	0.032	0.031	96.529
Auxiliary Vessel	Boat	Boat	2	1.238	1.304	18.487	77.000	2.865	2.779	6,280.218
Auxiliary Vessel	BB	Tow Boat	2	0.206	0.217	3.081	12.833	0.477	0.463	1,046.703
Dredge Vessel	BB	Vessel-mounted Pump	2	0.006	0.006	1.158	0.753	0.023	0.022	393.627
		Total		**1.489**	**1.568**	**22.954**	**92.007**	**3.399**	**3.297**	**7,817.078**
		5-year Annual Average		**0.297**	**0.313**	**4.590**	**18.401**	**0.679**	**0.659**	**1,563.415**

Notes: CO = carbon monoxide; CO2 = carbon dioxide; HC= Hydrocarbons; NH3 = ammonia; NOx = nitrogen oxides; PM2.5 = fine inhalable particulate matter with a diameter generally 2.5 micrometers (µm) or smaller; PM10 = inhalable particulate matter with a diameter generally 10 µm or smaller; SOx = sulfur oxides; VOC = volatile organic compound

L.6 References

AFCEC (Air Force Civil Engineer Center). 2025a. Air Emissions Guide for Air Force Stationary Sources, Methods for Estimating Emissions of Air Pollutants for Stationary Sources at U.S. Air Force Installations. Retrieved from https://aqhelp.com/Documents/2025-June%20Stationary%20Guide.pdf. Accessed August 2025.

AFCEC. 2025b. Air Emissions Guide for Air Force Mobile Sources, Methods for Estimating Emissions of Air Pollutants for Mobile Sources at United States Air Force Installations. Retrieved from https://aqhelp.com/Documents/2025-June%20Mobile%20Guide.pdf. Accessed August 2025.

AFCEC. 2025c. Air Emissions Guide for Air Force Transitory Sources, Methods for Estimating Emissions of Air Pollutants for Transitory Sources at U.S. Air Force Installations. Retrieved from https://aqhelp.com/Documents/2025-June%20Transitory%20Guide.pdf. Accessed August 2025.

ANNEX A
AIR CONFORMITY APPLICABILITY MODEL (ACAM) REPORTS

AIR CONFORMITY APPLICABILITY MODEL REPORT
RECORD OF AIR ANALYSIS (ROAA)

1. General Information: The Air Force's Air Conformity Applicability Model (ACAM) was used to perform a net change in emissions analysis to assess the potential air quality impact/s associated with the action. The analysis was performed in accordance with the Air Force Manual 32-7002, *Environmental Compliance and Pollution Prevention*; the *Environmental Impact Analysis Process* (EIAP, 32 CFR 989); the *General Conformity Rule* (GCR, 40 CFR 93 Subpart B); and the *USAF Air Quality Environmental Impact Analysis Process (EIAP) Guide*. This report provides a summary of the ACAM analysis.

Report generated with ACAM version: 5.0.24a

a. Action Location:

State: Florida
Regulatory Area(s): NOT IN A REGULATORY AREA

b. Action Title: Section 203 Study Area

c. Project Number/s (if applicable): Upgrade of Sturctures

d. Projected Action Start Date: 1 / 2027

e. Action Description:

The project Section 203 sStudy Aarea (Study Area), also referred to as boundaries are derived from the respective watersheds and contiguous urban areas associated with Reach A in the C&SF Section 216 Flood Resiliency Study, spans approximately 420 square miles where hydrologic, hydraulic, and hydrodynamic modeling have demonstrated highly vulnerable infrastructure in the C&SF system within eastern Broward County and a small portion of southern Palm Beach County. The Section 203 Study Area includes nine upstream and six downstream watershed basins, interconnected by a network of seven primary canals managed by nine water control structures (WCS), seven of which are coastal structures, in addition to other existing water control structures not directly relevant in this Section 203 Study.The Alternative A encompasses a broad range of site development and infrastructure activities across multiple zones, notably S13, S33, S37A, S36, G56, G57 and G54 areas. Key tasks include the removal of approximately 8,600 cubic yards of soil and 445 cubic yards of trees, with land disturbance totaling over 814,000 square feet. Demolition operations, particularly of coffer dams and associated structures, account for a significant area of 400,600 square feet. New construction, including gated buildings, will occupy approximately 621,000 square feet. Site preparation includes substantial topsoil stripping (126,000 ft²), dewatering estimated at 10 million gallons, and installation of 8,800 ft² of sheet piling for excavation support. Erosion control will be managed by installing 25,000 cubic yards of riprap. Structural stability will be achieved through 11,600 cubic yards of engineered backfill. Additionally, 105,000 square feet of asphalt will be removed to facilitate access, staging, and system integration across the project footprint.Alternative B entails a significantly expanded scope of work involving comprehensive site development and construction activities across nine locations (S13, S33, S37A, S36, S37B, G57, G56, and G54). Approximately 15,600 cubic yards of soil will be removed, with land disturbance encompassing 1,353,000 square feet, reflecting extensive ground impact. Demolition of coffer dams and associated structures spans a substantial 1,074,000 square feet, while new gated construction efforts will cover 1,535,000 square feet. Dewatering requirements, projected at 22.5 million gallons, account for deep excavation in canal and structural zones. Erosion control will be managed through the installation of 85,000 cubic yards of riprap, while 19,000 cubic yards of engineered structural backfill will be used to stabilize newly constructed pump station areas.

Additional site preparation includes tree removal totaling 845 cubic yards, topsoil stripping across 144,000 square feet, and asphalt pavement removal totaling 87,000 square feet for improved construction access. The coffer dam construction footprint expands significantly under this alternative, reaching 744,000 square feet. Overall, Alternative B represents a more intensive approach than the base case, involving greater volumes of material handling, broader site disruption, and larger structural developments to support the proposed infrastructure objectives.

AIR CONFORMITY APPLICABILITY MODEL REPORT
RECORD OF AIR ANALYSIS (ROAA)

2. Air Impact Analysis: Based on the attainment status at the action location, the requirements of the GCR are:

____ applicable
__X__ not applicable

Total reasonably foreseeable net direct and indirect emissions associated with the action were estimated through ACAM on a calendar-year basis for the start of the action through achieving "steady state" (cCba.e., no net gain/loss in emission stabilized and the action is fully implemented) emissions. The ACAM analysis uses the latest and most accurate emission estimation techniques available; all algorithms, emission factors, and methodologies used are described in detail in the *USAF Air Emissions Guide for Air Force Stationary Sources*, the *USAF Air Emissions Guide for Air Force Mobile Sources*, and the *USAF Air Emissions Guide for Air Force Transitory Sources*.

"Insignificance Indicators" were used in the analysis to provide an indication of the significance of the proposed Action's potential impacts to local air quality. The insignificance indicators are trivial (de minimis) rate thresholds that have been demonstrated to have little to no impact to air quality. These insignificance indicators are the 250 ton/yr Prevention of Significant Deterioration (PSD) major source threshold and 25 ton/yr for lead for actions occurring in areas that are "Attainment" (cCba.e., not exceeding any National Ambient Air Quality Standard (NAAQS)). These indicators do not define a significant impact; however, they do provide a threshold to identify actions that are insignificant. Any action with net emissions below the insignificance indicators for all criteria pollutants is considered so insignificant that the action will not cause or contribute to an exceedance on one or more NAAQS. For further detail on insignificance indicators, refer to *Level II, Air Quality Quantitative Assessment, Insignificance Indicators*.

The action's net emissions for every year through achieving steady state were compared against the Insignificance Indicators and are summarized below.

Analysis Summary:

2027

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	1.644	250	No
NOx	13.241	250	No
CO	14.983	250	No
SOx	0.169	250	No
PM 10	314.869	250	Yes
PM 2.5	0.615	250	No
Pb	0.000	25	No
NH3	0.043	250	No

2028

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	1.605	250	No
NOx	12.801	250	No
CO	14.238	250	No
SOx	0.168	250	No
PM 10	314.850	250	Yes

AIR CONFORMITY APPLICABILITY MODEL REPORT
RECORD OF AIR ANALYSIS (ROAA)

PM 2.5	0.599	250	No
Pb	0.000	25	No
NH3	0.041	250	No

2029

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.029	250	No
NOx	0.000	250	No
CO	0.000	250	No
SOx	0.000	250	No
PM 10	0.000	250	No
PM 2.5	0.000	250	No
Pb	0.000	25	No
NH3	0.000	250	No

2030

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	-0.902	250	No
NOx	-2.615	250	No
CO	-2.246	250	No
SOx	-0.788	250	No
PM 10	-0.803	250	No
PM 2.5	-0.803	250	No
Pb	0.000	25	No
NH3	0.000	250	No

2031 - (Steady State)

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	-0.902	250	No
NOx	-2.615	250	No
CO	-2.246	250	No
SOx	-0.788	250	No
PM 10	-0.803	250	No
PM 2.5	-0.803	250	No
Pb	0.000	25	No
NH3	0.000	250	No

The estimated annual net emissions associated with this action temporarily exceeds the insignificance indicators. However, the steady state estimated annual net emissions are below the insignificance indicators showing no significant long-term impact to air quality. Therefore, the action will not cause or contribute to an exceedance on one or more NAAQSs and will have an insignificant impact on air quality. No further air quality impact assessment is needed.

Dewey Cooper, Civ — Aug 11 2025

Name, Title — **Date**

AIR CONFORMITY APPLICABILITY MODEL REPORT
RECORD OF AIR ANALYSIS (ROAA)

AIR CONFORMITY APPLICABILITY MODEL REPORT
RECORD OF AIR ANALYSIS (ROAA)

1. General Information: The Air Force's Air Conformity Applicability Model (ACAM) was used to perform a net change in emissions analysis to assess the potential air quality impact/s associated with the action. The analysis was performed in accordance with the Air Force Manual 32-7002, *Environmental Compliance and Pollution Prevention*; the *Environmental Impact Analysis Process* (EIAP, 32 CFR 989); the *General Conformity Rule* (GCR, 40 CFR 93 Subpart B); and the *USAF Air Quality Environmental Impact Analysis Process (EIAP) Guide*. This report provides a summary of the ACAM analysis.

Report generated with ACAM version: 5.0.24a

a. Action Location:
State: Florida
Regulatory Area(s): NOT IN A REGULATORY AREA

b. Action Title: Alt A Operations

c. Project Number/s (if applicable): Upgrade of Sturctures

d. Projected Action Start Date: 1 / 2030

e. Action Description:

The project Section 203 sStudy Aarea (Study Area), also referred to as boundaries are derived from the respective watersheds and contiguous urban areas associated with Reach A in the C&SF Section 216 Flood Resiliency Study, spans approximately 420 square miles where hydrologic, hydraulic, and hydrodynamic modeling have demonstrated highly vulnerable infrastructure in the C&SF system within eastern Broward County and a small portion of southern Palm Beach County. The Section 203 Study Area includes nine upstream and six downstream watershed basins, interconnected by a network of seven primary canals managed by nine water control structures (WCS), seven of which are coastal structures, in addition to other existing water control structures not directly relevant in this Section 203 Study.The Alternative A encompasses a broad range of site development and infrastructure activities across multiple zones, notably S13, S33, S37A, S36, G56, G57 and G54 areas. Key tasks include the removal of approximately 8,600 cubic yards of soil and 445 cubic yards of trees, with land disturbance totaling over 814,000 square feet. Demolition operations, particularly of coffer dams and associated structures, account for a significant area of 400,600 square feet. New construction, including gated buildings, will occupy approximately 621,000 square feet. Site preparation includes substantial topsoil stripping (126,000 ft²), dewatering estimated at 10 million gallons, and installation of 8,800 ft² of sheet piling for excavation support. Erosion control will be managed by installing 25,000 cubic yards of riprap. Structural stability will be achieved through 11,600 cubic yards of engineered backfill. Additionally, 105,000 square feet of asphalt will be removed to facilitate access, staging, and system integration across the project footprint.Alternative B entails a significantly expanded scope of work involving comprehensive site development and construction activities across nine locations (S13, S33, S37A, S36, S37B, G57, G56, and G54). Approximately 15,600 cubic yards of soil will be removed, with land disturbance encompassing 1,353,000 square feet, reflecting extensive ground impact. Demolition of coffer dams and associated structures spans a substantial 1,074,000 square feet, while new gated construction efforts will cover 1,535,000 square feet. Dewatering requirements, projected at 22.5 million gallons, account for deep excavation in canal and structural zones. Erosion control will be managed through the installation of 85,000 cubic yards of riprap, while 19,000 cubic yards of engineered structural backfill will be used to stabilize newly constructed pump station areas.

Additional site preparation includes tree removal totaling 845 cubic yards, topsoil stripping across 144,000 square feet, and asphalt pavement removal totaling 87,000 square feet for improved construction access. The coffer dam construction footprint expands significantly under this alternative, reaching 744,000 square feet. Overall, Alternative B represents a more intensive approach than the base case, involving greater volumes of material handling, broader site disruption, and larger structural developments to support the proposed infrastructure objectives.

AIR CONFORMITY APPLICABILITY MODEL REPORT
RECORD OF AIR ANALYSIS (ROAA)

2. Air Impact Analysis: Based on the attainment status at the action location, the requirements of the GCR are:

____ applicable
__X__ not applicable

Total reasonably foreseeable net direct and indirect emissions associated with the action were estimated through ACAM on a calendar-year basis for the start of the action through achieving "steady state" (cCba.e., no net gain/loss in emission stabilized and the action is fully implemented) emissions. The ACAM analysis uses the latest and most accurate emission estimation techniques available; all algorithms, emission factors, and methodologies used are described in detail in the *USAF Air Emissions Guide for Air Force Stationary Sources*, the *USAF Air Emissions Guide for Air Force Mobile Sources*, and the *USAF Air Emissions Guide for Air Force Transitory Sources*.

"Insignificance Indicators" were used in the analysis to provide an indication of the significance of the proposed Action's potential impacts to local air quality. The insignificance indicators are trivial (de minimis) rate thresholds that have been demonstrated to have little to no impact to air quality. These insignificance indicators are the 250 ton/yr Prevention of Significant Deterioration (PSD) major source threshold and 25 ton/yr for lead for actions occurring in areas that are "Attainment" (cCba.e., not exceeding any National Ambient Air Quality Standard (NAAQS)). These indicators do not define a significant impact; however, they do provide a threshold to identify actions that are insignificant. Any action with net emissions below the insignificance indicators for all criteria pollutants is considered so insignificant that the action will not cause or contribute to an exceedance on one or more NAAQS. For further detail on insignificance indicators, refer to *Level II, Air Quality Quantitative Assessment, Insignificance Indicators*.

The action's net emissions for every year through achieving steady state were compared against the Insignificance Indicators and are summarized below.

Analysis Summary:

2030

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	-0.460	250	No
NOx	1.775	250	No
CO	-0.481	250	No
SOx	-0.482	250	No
PM 10	-0.388	250	No
PM 2.5	-0.388	250	No
Pb	0.000	25	No
NH3	0.000	250	No

2031 - (Steady State)

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	-0.460	250	No
NOx	1.775	250	No
CO	-0.481	250	No
SOx	-0.482	250	No
PM 10	-0.388	250	No

AIR CONFORMITY APPLICABILITY MODEL REPORT
RECORD OF AIR ANALYSIS (ROAA)

PM 2.5	-0.388	250	No
Pb	0.000	25	No
NH3	0.000	250	No

None of the estimated annual net emissions associated with this action are above the insignificance indicators; therefore, the action will not cause or contribute to an exceedance of one or more NAAQSs and will have an insignificant impact on air quality. No further air assessment is needed.

Dewey Cooper, Civ — Aug 11 2025

Name, Title — **Date**

DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

1. General Information

- Action Location

State: Florida
Regulatory Area(s): NOT IN A REGULATORY AREA

- Action Title: Section 203 Study Area

- Project Number/s (if applicable): Upgrade of Sturctures

- Projected Action Start Date: 1 / 2027

- Action Purpose and Need:
Upgrade of Sturctures

- Action Description:
The project Section 203 sStudy Aarea (Study Area), also referred to as boundaries are derived from the respective watersheds and contiguous urban areas associated with Reach A in the C&SF Section 216 Flood Resiliency Study, spans approximately 420 square miles where hydrologic, hydraulic, and hydrodynamic modeling have demonstrated highly vulnerable infrastructure in the C&SF system within eastern Broward County and a small portion of southern Palm Beach County. The Section 203 Study Area includes nine upstream and six downstream watershed basins, interconnected by a network of seven primary canals managed by nine water control structures (WCS), seven of which are coastal structures, in addition to other existing water control structures not directly relevant in this Section 203 Study.The Alternative A encompasses a broad range of site development and infrastructure activities across multiple zones, notably S13, S33, S37A, S36, G56, G57 and G54 areas. Key tasks include the removal of approximately 8,600 cubic yards of soil and 445 cubic yards of trees, with land disturbance totaling over 814,000 square feet. Demolition operations, particularly of coffer dams and associated structures, account for a significant area of 400,600 square feet. New construction, including gated buildings, will occupy approximately 621,000 square feet. Site preparation includes substantial topsoil stripping (126,000 ft^2), dewatering estimated at 10 million gallons, and installation of 8,800 ft^2 of sheet piling for excavation support. Erosion control will be managed by installing 25,000 cubic yards of riprap. Structural stability will be achieved through 11,600 cubic yards of engineered backfill. Additionally, 105,000 square feet of asphalt will be removed to facilitate access, staging, and system integration across the project footprint.Alternative B entails a significantly expanded scope of work involving comprehensive site development and construction activities across nine locations (S13, S33, S37A, S36, S37B, G57, G56, and G54). Approximately 15,600 cubic yards of soil will be removed, with land disturbance encompassing 1,353,000 square feet, reflecting extensive ground impact. Demolition of coffer dams and associated structures spans a substantial 1,074,000 square feet, while new gated construction efforts will cover 1,535,000 square feet. Dewatering requirements, projected at 22.5 million gallons, account for deep excavation in canal and structural zones. Erosion control will be managed through the installation of 85,000 cubic yards of riprap, while 19,000 cubic yards of engineered structural backfill will be used to stabilize newly constructed pump station areas.

Additional site preparation includes tree removal totaling 845 cubic yards, topsoil stripping across 144,000 square feet, and asphalt pavement removal totaling 87,000 square feet for improved construction access. The coffer dam construction footprint expands significantly under this alternative, reaching 744,000 square feet. Overall, Alternative B represents a more intensive approach than the base case, involving greater volumes of material handling, broader site disruption, and larger structural developments to support the proposed infrastructure objectives.

- Point of Contact
Name: Dewey Cooper
Title: Civ

DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

Organization: Tetra Tech
Email:
Phone Number:

Report generated with ACAM version: 5.0.24a

- Activity List:

Activity Type		Activity Title
2.	Construction / Demolition	Alternate A
3.	Emergency Generator	Pump Engine
4.	Emergency Generator	Aux Engine
5.	Emergency Generator	300 HP
6.	Emergency Generator	Emergency Generator
7.	Emergency Generator	S-13 Removal of Diesel Primary
8.	Emergency Generator	Dewatering

Emission factors and air emission estimating methods come from the United States Air Force's Air Emissions Guide for Air Force Stationary Sources, Air Emissions Guide for Air Force Mobile Sources, and Air Emissions Guide for Air Force Transitory Sources.

2. Construction / Demolition

2.1 General Information & Timeline Assumptions

- Activity Location

Regulatory Area(s): NOT IN A REGULATORY AREA

- Activity Title: Alternate A

- Activity Description:

The proposed project encompasses a broad range of site development and infrastructure activities across multiple zones, notably S13, S33, S37A, S36, G56, G57 and G54 areas. Key tasks include the removal of approximately 8,600 cubic yards of soil and 445 cubic yards of trees, with land disturbance totaling over 814,000 square feet. Demolition operations, particularly of coffer dams and associated structures, account for a significant area of 400,600 square feet. New construction, including gated buildings, will occupy approximately 621,000 square feet. Site preparation includes substantial topsoil stripping (126,000 ft²), dewatering estimated at 10 million gallons, and installation of 8,800 ft² of sheet piling for excavation support. Erosion control will be managed by installing 25,000 cubic yards of riprap. Structural stability will be achieved through 11,600 cubic yards of engineered backfill. Additionally, 105,000 square feet of asphalt will be removed to facilitate access, staging, and system integration across the project footprint.

- Activity Start Date

Start Month: 1
Start Month: 2027

- Activity End Date

Indefinite: False
End Month: 5
End Month: 2029

- Activity Emissions:

Pollutant	Total Emissions (TONs)

Pollutant	Total Emissions (TONs)

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VOC	2.942804
SO_x	0.054798
NO_x	24.661786
CO	28.299888

PM 10	629.418174
PM 2.5	0.912923
Pb	0.000000
NH_3	0.084804

- Global Scale Activity Emissions of Greenhouse Gasses:

Pollutant	Total Emissions (TONs)
CH_4	0.239935
N_2O	0.194386

Pollutant	Total Emissions (TONs)
CO_2	6603.604821
CO_2e	6661.834654

2.1 Demolition Phase

2.1.1 Demolition Phase Timeline Assumptions

- Phase Start Date
Start Month: 1
Start Quarter: 1
Start Year: 2027

- Phase Duration
Number of Month: 24
Number of Days: 0

2.1.2 Demolition Phase Assumptions

- General Demolition Information
Area of Building to be demolished (ft^2): 500000
Height of Building to be demolished (ft): 12

- Default Settings Used: Yes

- Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Concrete/Industrial Saws Composite	1	8
Excavators Composite	3	8
Rubber Tired Dozers Composite	2	8
Tractors/Loaders/Backhoes Composite	2	6

- Vehicle Exhaust
Average Hauling Truck Capacity (yd^3): 20 (default)
Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips
Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC

POVs	50.00	50.00	0	0	0	0	0

2.1.3 Demolition Phase Emission Factor(s)

- Construction Exhaust Criteria Pollutant Emission Factors (g/hp-hour) (default)

Concrete/Industrial Saws Composite [HP: 33] [LF: 0.73]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.38980	0.00742	3.42957	4.29108	0.07071	0.06505
Excavators Composite [HP: 36] [LF: 0.38]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.37809	0.00542	3.36699	4.21640	0.08879	0.08169
Rubber Tired Dozers Composite [HP: 367] [LF: 0.4]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.34288	0.00492	3.09108	2.65644	0.13550	0.12466
Tractors/Loaders/Backhoes Composite [HP: 84] [LF: 0.37]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.17717	0.00489	1.80740	3.48712	0.05440	0.05005

- Construction Exhaust Greenhouse Gasses Pollutant Emission Factors (g/hp-hour) (default)

Concrete/Industrial Saws Composite [HP: 33] [LF: 0.73]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02330	0.00466	574.33236	576.30332
Excavators Composite [HP: 36] [LF: 0.38]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02383	0.00477	587.39431	589.41010
Rubber Tired Dozers Composite [HP: 367] [LF: 0.4]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02160	0.00432	532.55942	534.38703
Tractors/Loaders/Backhoes Composite [HP: 84] [LF: 0.37]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02148	0.00430	529.61807	531.43559

- Vehicle Exhaust & Worker Trips Criteria Pollutant Emission Factors (grams/mile)

	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**NH_3**
LDGV	0.30250	0.00278	0.10216	4.37740	0.02381	0.00738	0.04984
LDGT	0.25584	0.00352	0.15087	3.96319	0.02489	0.00829	0.04170
HDGV	0.80268	0.00758	0.53554	9.42531	0.05206	0.02398	0.08830
LDDV	0.11600	0.00133	0.17757	7.08987	0.02608	0.00873	0.01694
LDDT	0.11871	0.00132	0.20883	3.52458	0.02453	0.00897	0.01663
HDDV	0.10536	0.00421	2.35450	1.64049	0.17368	0.08066	0.06684
MC	2.90332	0.00331	0.53638	11.52717	0.03290	0.02177	0.05245

- Vehicle Exhaust & Worker Trips Greenhouse Gasses Emission Factors (grams/mile)

	CH_4	**N_2O**	**CO_2**	**CO_2e**
LDGV	0.01413	0.00493	331.23691	332.93781
LDGT	0.01514	0.00719	419.65142	421.98105
HDGV	0.04771	0.02469	904.41092	912.28839
LDDV	0.04390	0.00074	393.54551	394.96998
LDDT	0.02222	0.00109	393.93490	394.84539
HDDV	0.02015	0.16469	1252.74971	1296.95643
MC	0.10508	0.00322	390.91110	394.70550

2.1.4 Demolition Phase Formula(s)

DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

- Fugitive Dust Emissions per Phase
$PM10_{FD}$ = (0.00042 * BA * BH) / 2000

$PM10_{FD}$: Fugitive Dust PM 10 Emissions (TONs)
0.00042: Emission Factor (lb/ft^3)
BA: Area of Building to be demolished (ft^2)
BH: Height of Building to be demolished (ft)
2000: Conversion Factor pounds to tons

- Construction Exhaust Emissions per Phase
CEE_{POL} = (NE * WD * H * HP * LF * EF_{POL}* 0.002205) / 2000

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
HP: Equipment Horsepower
LF: Equipment Load Factor
EF_{POL}: Emission Factor for Pollutant (g/hp-hour)
0.002205: Conversion Factor grams to pounds
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase
VMT_{VE} = BA * BH * (1 / 27) * 0.25 * (1 / HC) * HT

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
BA: Area of Building being demolish (ft^2)
BH: Height of Building being demolish (ft)
(1 / 27): Conversion Factor cubic feet to cubic yards (1 yd^3 / 27 ft^3)
0.25: Volume reduction factor (material reduced by 75% to account for air space)
HC: Average Hauling Truck Capacity (yd^3)
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Vehicle Exhaust On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase
VMT_{WT} = WD * WT * 1.25 * NE

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000

V_{POL}: Vehicle Emissions (TONs)

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

2.2 Site Grading Phase

2.2.1 Site Grading Phase Timeline Assumptions

- Phase Start Date
Start Month: 1
Start Quarter: 1
Start Year: 2027

- Phase Duration
Number of Month: 24
Number of Days: 0

2.2.2 Site Grading Phase Assumptions

- General Site Grading Information
Area of Site to be Graded (ft^2): 2526500
Amount of Material to be Hauled On-Site (yd^3): 8500
Amount of Material to be Hauled Off-Site (yd^3): 25000

- Site Grading Default Settings
Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Excavators Composite	1	8
Graders Composite	2	8
Other Construction Equipment Composite	2	8
Rollers Composite	1	8
Rubber Tired Dozers Composite	2	8
Scrapers Composite	4	8
Tractors/Loaders/Backhoes Composite	2	8

- Vehicle Exhaust
Average Hauling Truck Capacity (yd^3): 20 (default)
Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips
Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

2.2.3 Site Grading Phase Emission Factor(s)

- Construction Exhaust Criteria Pollutant Emission Factors (g/hp-hour) (default)

Excavators Composite [HP: 36] [LF: 0.38]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.37809	0.00542	3.36699	4.21640	0.08879	0.08169
Graders Composite [HP: 148] [LF: 0.41]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.29535	0.00490	2.28401	3.40565	0.12705	0.11688
Other Construction Equipment Composite [HP: 82] [LF: 0.42]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.25231	0.00487	2.49971	3.48392	0.13245	0.12186
Rollers Composite [HP: 36] [LF: 0.38]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.52865	0.00542	3.57666	4.10537	0.14602	0.13434
Rubber Tired Dozers Composite [HP: 367] [LF: 0.4]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.34288	0.00492	3.09108	2.65644	0.13550	0.12466
Scrapers Composite [HP: 423] [LF: 0.48]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.19058	0.00488	1.60937	1.52212	0.06336	0.05829
Tractors/Loaders/Backhoes Composite [HP: 84] [LF: 0.37]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.17717	0.00489	1.80740	3.48712	0.05440	0.05005

- Construction Exhaust Greenhouse Gasses Pollutant Emission Factors (g/hp-hour) (default)

Excavators Composite [HP: 36] [LF: 0.38]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02383	0.00477	587.39431	589.41010
Graders Composite [HP: 148] [LF: 0.41]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02155	0.00431	531.25291	533.07604
Other Construction Equipment Composite [HP: 82] [LF: 0.42]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02140	0.00428	527.44206	529.25211
Rollers Composite [HP: 36] [LF: 0.38]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02382	0.00476	587.12246	589.13732
Rubber Tired Dozers Composite [HP: 367] [LF: 0.4]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02160	0.00432	532.55942	534.38703
Scrapers Composite [HP: 423] [LF: 0.48]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02145	0.00429	528.70476	530.51914
Tractors/Loaders/Backhoes Composite [HP: 84] [LF: 0.37]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02148	0.00430	529.61807	531.43559

- Vehicle Exhaust & Worker Trips Criteria Pollutant Emission Factors (grams/mile)

	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**NH_3**
LDGV	0.30250	0.00278	0.10216	4.37740	0.02381	0.00738	0.04984
LDGT	0.25584	0.00352	0.15087	3.96319	0.02489	0.00829	0.04170
HDGV	0.80268	0.00758	0.53554	9.42531	0.05206	0.02398	0.08830

LDDV	0.11600	0.00133	0.17757	7.08987	0.02608	0.00873	0.01694
LDDT	0.11871	0.00132	0.20883	3.52458	0.02453	0.00897	0.01663
HDDV	0.10536	0.00421	2.35450	1.64049	0.17368	0.08066	0.06684
MC	2.90332	0.00331	0.53638	11.52717	0.03290	0.02177	0.05245

- Vehicle Exhaust & Worker Trips Greenhouse Gasses Emission Factors (grams/mile)

	CH_4	N_2O	CO_2	CO_2e
LDGV	0.01413	0.00493	331.23691	332.93781
LDGT	0.01514	0.00719	419.65142	421.98105
HDGV	0.04771	0.02469	904.41092	912.28839
LDDV	0.04390	0.00074	393.54551	394.96998
LDDT	0.02222	0.00109	393.93490	394.84539
HDDV	0.02015	0.16469	1252.74971	1296.95643
MC	0.10508	0.00322	390.91110	394.70550

2.2.4 Site Grading Phase Formula(s)

- Fugitive Dust Emissions per Phase

$PM10_{FD} = (20 * ACRE * WD) / 2000$

$PM10_{FD}$: Fugitive Dust PM 10 Emissions (TONs)
20: Conversion Factor Acre Day to pounds (20 lb / 1 Acre Day)
ACRE: Total acres (acres)
WD: Number of Total Work Days (days)
2000: Conversion Factor pounds to tons

- Construction Exhaust Emissions per Phase

$CEE_{POL} = (NE * WD * H * HP * LF * EF_{POL} * 0.002205) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
HP: Equipment Horsepower
LF: Equipment Load Factor
EF_{POL}: Emission Factor for Pollutant (g/hp-hour)
0.002205: Conversion Factor grams to pounds
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase

$VMT_{VE} = (HA_{OnSite} + HA_{OffSite}) * (1 / HC) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
HA_{OnSite}: Amount of Material to be Hauled On-Site (yd^3)
$HA_{OffSite}$: Amount of Material to be Hauled Off-Site (yd^3)
HC: Average Hauling Truck Capacity (yd^3)
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)

VM: Vehicle Exhaust On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase

$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

2.3 Trenching/Excavating Phase

2.3.1 Trenching / Excavating Phase Timeline Assumptions

- Phase Start Date

Start Month: 1
Start Quarter: 1
Start Year: 2027

- Phase Duration

Number of Month: 24
Number of Days: 0

2.3.2 Trenching / Excavating Phase Assumptions

- General Trenching/Excavating Information

Area of Site to be Trenched/Excavated (ft^2): 100000
Amount of Material to be Hauled On-Site (yd^3): 632000
Amount of Material to be Hauled Off-Site (yd^3): 1000

- Trenching Default Settings

Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Excavators Composite	2	8
Other General Industrial Equipmen Composite	1	8
Tractors/Loaders/Backhoes Composite	1	8

- Vehicle Exhaust

Average Hauling Truck Capacity (yd^3): 20 (default)
Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips

Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

2.3.3 Trenching / Excavating Phase Emission Factor(s)

- Construction Exhaust Criteria Pollutant Emission Factors (g/hp-hour) (default)

Excavators Composite [HP: 36] [LF: 0.38]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.37809	0.00542	3.36699	4.21640	0.08879	0.08169
Other General Industrial Equipmen Composite [HP: 35] [LF: 0.34]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.43579	0.00542	3.52468	4.59651	0.09918	0.09125
Tractors/Loaders/Backhoes Composite [HP: 84] [LF: 0.37]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.17717	0.00489	1.80740	3.48712	0.05440	0.05005

- Construction Exhaust Greenhouse Gasses Pollutant Emission Factors (g/hp-hour) (default)

Excavators Composite [HP: 36] [LF: 0.38]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02383	0.00477	587.39431	589.41010
Other General Industrial Equipmen Composite [HP: 35] [LF: 0.34]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02385	0.00477	587.92708	589.94470
Tractors/Loaders/Backhoes Composite [HP: 84] [LF: 0.37]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02148	0.00430	529.61807	531.43559

- Vehicle Exhaust & Worker Trips Criteria Pollutant Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	NH_3
LDGV	0.30250	0.00278	0.10216	4.37740	0.02381	0.00738	0.04984
LDGT	0.25584	0.00352	0.15087	3.96319	0.02489	0.00829	0.04170
HDGV	0.80268	0.00758	0.53554	9.42531	0.05206	0.02398	0.08830
LDDV	0.11600	0.00133	0.17757	7.08987	0.02608	0.00873	0.01694
LDDT	0.11871	0.00132	0.20883	3.52458	0.02453	0.00897	0.01663
HDDV	0.10536	0.00421	2.35450	1.64049	0.17368	0.08066	0.06684
MC	2.90332	0.00331	0.53638	11.52717	0.03290	0.02177	0.05245

- Vehicle Exhaust & Worker Trips Greenhouse Gasses Emission Factors (grams/mile)

	CH_4	N_2O	CO_2	CO_2e
LDGV	0.01413	0.00493	331.23691	332.93781
LDGT	0.01514	0.00719	419.65142	421.98105
HDGV	0.04771	0.02469	904.41092	912.28839
LDDV	0.04390	0.00074	393.54551	394.96998
LDDT	0.02222	0.00109	393.93490	394.84539
HDDV	0.02015	0.16469	1252.74971	1296.95643

MC	0.10508	0.00322	390.91110	394.70550

2.3.4 Trenching / Excavating Phase Formula(s)

- Fugitive Dust Emissions per Phase
$PM10_{FD} = (20 * ACRE * WD) / 2000$

$PM10_{FD}$: Fugitive Dust PM 10 Emissions (TONs)
20: Conversion Factor Acre Day to pounds (20 lb / 1 Acre Day)
ACRE: Total acres (acres)
WD: Number of Total Work Days (days)
2000: Conversion Factor pounds to tons

- Construction Exhaust Emissions per Phase
$CEE_{POL} = (NE * WD * H * HP * LF * EF_{POL} * 0.002205) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
HP: Equipment Horsepower
LF: Equipment Load Factor
EF_{POL}: Emission Factor for Pollutant (g/hp-hour)
0.002205: Conversion Factor grams to pounds
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase
$VMT_{VE} = (HA_{OnSite} + HA_{OffSite}) * (1 / HC) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
HA_{OnSite}: Amount of Material to be Hauled On-Site (yd^3)
$HA_{OffSite}$: Amount of Material to be Hauled Off-Site (yd^3)
HC: Average Hauling Truck Capacity (yd^3)
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Vehicle Exhaust On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase
$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

2.4 Building Construction Phase

2.4.1 Building Construction Phase Timeline Assumptions

- Phase Start Date
Start Month: 1
Start Quarter: 1
Start Year: 2027

- Phase Duration
Number of Month: 24
Number of Days: 0

2.4.2 Building Construction Phase Assumptions

- General Building Construction Information
Building Category: Commercial or Retail
Area of Building (ft^2): 621000
Height of Building (ft): 20
Number of Units: N/A

- Building Construction Default Settings
Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Cranes Composite	1	7
Forklifts Composite	3	8
Generator Sets Composite	1	8
Tractors/Loaders/Backhoes Composite	3	7
Welders Composite	1	8

- Vehicle Exhaust
Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips
Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

- Vendor Trips

Average Vendor Round Trip Commute (mile): 40 (default)

- Vendor Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

2.4.3 Building Construction Phase Emission Factor(s)

- Construction Exhaust Criteria Pollutant Emission Factors (g/hp-hour) (default)

Cranes Composite [HP: 367] [LF: 0.29]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.19464	0.00487	1.74774	1.62852	0.07179	0.06605
Forklifts Composite [HP: 82] [LF: 0.2]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.22849	0.00487	2.15229	3.56761	0.09240	0.08501
Generator Sets Composite [HP: 14] [LF: 0.74]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.53730	0.00793	4.30480	2.85227	0.17170	0.15796
Tractors/Loaders/Backhoes Composite [HP: 84] [LF: 0.37]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.17717	0.00489	1.80740	3.48712	0.05440	0.05005
Welders Composite [HP: 46] [LF: 0.45]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.43501	0.00735	3.46616	4.46084	0.07894	0.07263

- Construction Exhaust Greenhouse Gasses Pollutant Emission Factors (g/hp-hour) (default)

Cranes Composite [HP: 367] [LF: 0.29]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02140	0.00428	527.45492	529.26501
Forklifts Composite [HP: 82] [LF: 0.2]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02138	0.00428	527.06992	528.87869
Generator Sets Composite [HP: 14] [LF: 0.74]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02305	0.00461	568.30624	570.25652
Tractors/Loaders/Backhoes Composite [HP: 84] [LF: 0.37]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02148	0.00430	529.61807	531.43559
Welders Composite [HP: 46] [LF: 0.45]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02305	0.00461	568.29664	570.24689

- Vehicle Exhaust & Worker Trips Criteria Pollutant Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	NH_3
LDGV	0.30250	0.00278	0.10216	4.37740	0.02381	0.00738	0.04984
LDGT	0.25584	0.00352	0.15087	3.96319	0.02489	0.00829	0.04170
HDGV	0.80268	0.00758	0.53554	9.42531	0.05206	0.02398	0.08830
LDDV	0.11600	0.00133	0.17757	7.08987	0.02608	0.00873	0.01694
LDDT	0.11871	0.00132	0.20883	3.52458	0.02453	0.00897	0.01663
HDDV	0.10536	0.00421	2.35450	1.64049	0.17368	0.08066	0.06684
MC	2.90332	0.00331	0.53638	11.52717	0.03290	0.02177	0.05245

- Vehicle Exhaust & Worker Trips Greenhouse Gasses Emission Factors (grams/mile)

	CH_4	N_2O	CO_2	CO_2e
LDGV	0.01413	0.00493	331.23691	332.93781
LDGT	0.01514	0.00719	419.65142	421.98105
HDGV	0.04771	0.02469	904.41092	912.28839
LDDV	0.04390	0.00074	393.54551	394.96998
LDDT	0.02222	0.00109	393.93490	394.84539
HDDV	0.02015	0.16469	1252.74971	1296.95643
MC	0.10508	0.00322	390.91110	394.70550

2.4.4 Building Construction Phase Formula(s)

- Construction Exhaust Emissions per Phase

$CEE_{POL} = (NE * WD * H * HP * LF * EF_{POL} * 0.002205) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
HP: Equipment Horsepower
LF: Equipment Load Factor
EF_{POL}: Emission Factor for Pollutant (g/hp-hour)
0.002205: Conversion Factor grams to pounds
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase

$VMT_{VE} = BA * BH * (0.32 / 1000) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
BA: Area of Building (ft^2)
BH: Height of Building (ft)
(0.32 / 1000): Conversion Factor ft^3 to trips (0.32 trip / 1000 ft^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase

$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Vender Trips Emissions per Phase
$VMT_{VT} = BA * BH * (0.05 / 1000) * HT$

VMT_{VT}: Vender Trips Vehicle Miles Travel (miles)
BA: Area of Building (ft^2)
BH: Height of Building (ft)
(0.05 / 1000): Conversion Factor ft^3 to trips (0.05 trip / 1000 ft^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VT}: Vender Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

2.5 Architectural Coatings Phase

2.5.1 Architectural Coatings Phase Timeline Assumptions

- Phase Start Date
Start Month: 6
Start Quarter: 1
Start Year: 2027

- Phase Duration
Number of Month: 24
Number of Days: 0

2.5.2 Architectural Coatings Phase Assumptions

- General Architectural Coatings Information
Building Category: Non-Residential
Total Square Footage (ft^2): 12000
Number of Units: N/A

- Architectural Coatings Default Settings
Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Worker Trips
Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

2.5.3 Architectural Coatings Phase Emission Factor(s)

- Worker Trips Criteria Pollutant Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	NH_3
LDGV	0.30250	0.00278	0.10216	4.37740	0.02381	0.00738	0.04984
LDGT	0.25584	0.00352	0.15087	3.96319	0.02489	0.00829	0.04170
HDGV	0.80268	0.00758	0.53554	9.42531	0.05206	0.02398	0.08830
LDDV	0.11600	0.00133	0.17757	7.08987	0.02608	0.00873	0.01694
LDDT	0.11871	0.00132	0.20883	3.52458	0.02453	0.00897	0.01663
HDDV	0.10536	0.00421	2.35450	1.64049	0.17368	0.08066	0.06684
MC	2.90332	0.00331	0.53638	11.52717	0.03290	0.02177	0.05245

- Worker Trips Greenhouse Gasses Emission Factors (grams/mile)

	CH_4	N_2O	CO_2	CO_2e
LDGV	0.01413	0.00493	331.23691	332.93781
LDGT	0.01514	0.00719	419.65142	421.98105
HDGV	0.04771	0.02469	904.41092	912.28839
LDDV	0.04390	0.00074	393.54551	394.96998
LDDT	0.02222	0.00109	393.93490	394.84539
HDDV	0.02015	0.16469	1252.74971	1296.95643
MC	0.10508	0.00322	390.91110	394.70550

2.5.4 Architectural Coatings Phase Formula(s)

- Worker Trips Emissions per Phase

$VMT_{WT} = (1 * WT * PA) / 800$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
1: Conversion Factor man days to trips (1 trip / 1 man * day)
WT: Average Worker Round Trip Commute (mile)
PA: Paint Area (ft^2)
800: Conversion Factor square feet to man days (1 ft^2 / 1 man * day)

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Off-Gassing Emissions per Phase

$VOC_{AC} = (AB * 2.0 * 0.0116) / 2000.0$

VOC_{AC}: Architectural Coating VOC Emissions (TONs)
BA: Area of Building (ft^2)
2.0: Conversion Factor total area to coated area (2.0 ft^2 coated area / total area)
0.0116: Emission Factor (lb/ft^2)
2000: Conversion Factor pounds to tons

2.6 Paving Phase

2.6.1 Paving Phase Timeline Assumptions

DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

- Phase Start Date
Start Month: 6
Start Quarter: 1
Start Year: 2027

- Phase Duration
Number of Month: 6
Number of Days: 0

2.6.2 Paving Phase Assumptions

- General Paving Information
Paving Area (ft^2): 325000

- Paving Default Settings
Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Cement and Mortar Mixers Composite	4	6
Pavers Composite	1	8
Paving Equipment Composite	2	6
Rollers Composite	2	6
Tractors/Loaders/Backhoes Composite	1	7

- Vehicle Exhaust
Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips
Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

2.6.3 Paving Phase Emission Factor(s)

- Construction Exhaust Criteria Pollutant Emission Factors (g/hp-hour) (default)

Cement and Mortar Mixers Composite [HP: 10] [LF: 0.56]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.55279	0.00855	4.19775	3.25549	0.16311	0.15007
Pavers Composite [HP: 81] [LF: 0.42]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.22921	0.00486	2.45013	3.43821	0.11941	0.10986
Paving Equipment Composite [HP: 89] [LF: 0.36]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.18341	0.00488	2.01586	3.40316	0.07465	0.06867

Rollers Composite [HP: 36] [LF: 0.38]						
	VOC	SO_x	NO_x	CO	PM 10	PM 2.5
Emission Factors	0.52865	0.00542	3.57666	4.10537	0.14602	0.13434
Tractors/Loaders/Backhoes Composite [HP: 84] [LF: 0.37]						
	VOC	SO_x	NO_x	CO	PM 10	PM 2.5
Emission Factors	0.17717	0.00489	1.80740	3.48712	0.05440	0.05005

- Construction Exhaust Greenhouse Gasses Pollutant Emission Factors (g/hp-hour) (default)

Cement and Mortar Mixers Composite [HP: 10] [LF: 0.56]				
	CH_4	N_2O	CO_2	CO_2e
Emission Factors	0.02313	0.00463	570.32048	572.27767
Pavers Composite [HP: 81] [LF: 0.42]				
	CH_4	N_2O	CO_2	CO_2e
Emission Factors	0.02133	0.00427	525.80912	527.61356
Paving Equipment Composite [HP: 89] [LF: 0.36]				
	CH_4	N_2O	CO_2	CO_2e
Emission Factors	0.02142	0.00428	528.06776	529.87995
Rollers Composite [HP: 36] [LF: 0.38]				
	CH_4	N_2O	CO_2	CO_2e
Emission Factors	0.02382	0.00476	587.12246	589.13732
Tractors/Loaders/Backhoes Composite [HP: 84] [LF: 0.37]				
	CH_4	N_2O	CO_2	CO_2e
Emission Factors	0.02148	0.00430	529.61807	531.43559

- Vehicle Exhaust & Worker Trips Criteria Pollutant Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	NH_3
LDGV	0.30250	0.00278	0.10216	4.37740	0.02381	0.00738	0.04984
LDGT	0.25584	0.00352	0.15087	3.96319	0.02489	0.00829	0.04170
HDGV	0.80268	0.00758	0.53554	9.42531	0.05206	0.02398	0.08830
LDDV	0.11600	0.00133	0.17757	7.08987	0.02608	0.00873	0.01694
LDDT	0.11871	0.00132	0.20883	3.52458	0.02453	0.00897	0.01663
HDDV	0.10536	0.00421	2.35450	1.64049	0.17368	0.08066	0.06684
MC	2.90332	0.00331	0.53638	11.52717	0.03290	0.02177	0.05245

- Vehicle Exhaust & Worker Trips Greenhouse Gasses Emission Factors (grams/mile)

	CH_4	N_2O	CO_2	CO_2e
LDGV	0.01413	0.00493	331.23691	332.93781
LDGT	0.01514	0.00719	419.65142	421.98105
HDGV	0.04771	0.02469	904.41092	912.28839
LDDV	0.04390	0.00074	393.54551	394.96998
LDDT	0.02222	0.00109	393.93490	394.84539
HDDV	0.02015	0.16469	1252.74971	1296.95643
MC	0.10508	0.00322	390.91110	394.70550

2.6.4 Paving Phase Formula(s)

- Construction Exhaust Emissions per Phase

$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

- Construction Exhaust Emissions per Phase

$CEE_{POL} = (NE * WD * H * HP * LF * EF_{POL} * 0.002205) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment

WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
HP: Equipment Horsepower
LF: Equipment Load Factor
EF_{POL}: Emission Factor for Pollutant (g/hp-hour)
0.002205: Conversion Factor grams to pounds
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase

$VMT_{VE} = PA * 0.25 * (1 / 27) * (1 / HC) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
PA: Paving Area (ft^2)
0.25: Thickness of Paving Area (ft)
(1 / 27): Conversion Factor cubic feet to cubic yards (1 yd^3 / 27 ft^3)
HC: Average Hauling Truck Capacity (yd^3)
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Vehicle Exhaust On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase

$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Off-Gassing Emissions per Phase

$VOC_P = (2.62 * PA) / 43560 / 2000$

VOC_P: Paving VOC Emissions (TONs)
2.62: Emission Factor (lb/acre)
PA: Paving Area (ft^2)
43560: Conversion Factor square feet to acre (43560 ft2 / $acre)^2$ / acre)
2000: Conversion Factor square pounds to TONs (2000 lb / TON)

DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

3. Emergency Generator

3.1 General Information & Timeline Assumptions

- Add or Remove Activity from Baseline? Add

- Activity Location
County: Hillsborough
Regulatory Area(s): NOT IN A REGULATORY AREA

- Activity Title: Pump Engine

- Activity Description:
800 aux engine to drive pump

- Activity Start Date
Start Month: 1
Start Year: 2030

- Activity End Date
Indefinite: Yes
End Month: N/A
End Year: N/A

- Activity Emissions of Criteria Pollutants:

Pollutant	Emissions Per Year (TONs)
VOC	0.034368
SO_x	0.000600
NO_x	1.243200
CO	0.330240

Pollutant	Emissions Per Year (TONs)
PM 10	0.038832
PM 2.5	0.038832
Pb	0.000000
NH_3	0.000000

- Global Scale Activity Emissions of Greenhouse Gasses:

Pollutant	Emissions Per Year (TONs)
CH_4	0.002222
N_2O	0.000444

Pollutant	Emissions Per Year (TONs)
CO_2	55.200000
CO_2e	63.840000

3.2 Emergency Generator Assumptions

- Emergency Generator
Type of Fuel used in Emergency Generator: Diesel
Number of Emergency Generators: 4

- Default Settings Used: No

- Emergency Generators Consumption
Emergency Generator's Horsepower: 800
Average Operating Hours Per Year (hours): 30

3.3 Emergency Generator Emission Factor(s)

- Emergency Generators Criteria Pollutant Emission Factor (lb/hp-hr)

VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3
0.000716	0.0000125	0.0259	0.00688	0.000809	0.000809		

- Emergency Generators Greenhouse Gasses Pollutant Emission Factor (lb/hp-hr)

CH_4	N_2O	CO_2	CO_2e
0.000046297	0.000009259	1.15	1.33

3.4 Emergency Generator Formula(s)

- Emergency Generator Emissions per Year

AE_{POL}= (NGEN * HP * OT * EF_{POL}) / 2000

AE_{POL}: Activity Emissions (TONs per Year)
NGEN: Number of Emergency Generators
HP: Emergency Generator's Horsepower (hp)
OT: Average Operating Hours Per Year (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hp-hr)

4. Emergency Generator

4.1 General Information & Timeline Assumptions

- Add or Remove Activity from Baseline? Add

- Activity Location
County: Hillsborough
Regulatory Area(s): NOT IN A REGULATORY AREA

- Activity Title: Aux Engine

- Activity Description:
500 hp Pump Engine

- Activity Start Date
Start Month: 1
Start Year: 2030

- Activity End Date
Indefinite: Yes
End Month: N/A
End Year: N/A

- Activity Emissions of Criteria Pollutants:

Pollutant	Emissions Per Year (TONs)
VOC	0.104625
SO_x	0.088125
NO_x	0.431250
CO	0.288000

Pollutant	Emissions Per Year (TONs)
PM 10	0.094125
PM 2.5	0.094125
Pb	0.000000
NH_3	0.000000

- Global Scale Activity Emissions of Greenhouse Gasses:

Pollutant	Emissions Per Year (TONs)
CH_4	0.001736
N_2O	0.000347

Pollutant	Emissions Per Year (TONs)
CO_2	43.125000
CO_2e	49.875000

4.2 Emergency Generator Assumptions

DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

- Emergency Generator
Type of Fuel used in Emergency Generator: Diesel
Number of Emergency Generators: 5

- Default Settings Used: No

- Emergency Generators Consumption
Emergency Generator's Horsepower: 500
Average Operating Hours Per Year (hours): 30

4.3 Emergency Generator Emission Factor(s)

- Emergency Generators Criteria Pollutant Emission Factor (lb/hp-hr)

VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3
0.00279	0.00235	0.0115	0.00768	0.00251	0.00251		

- Emergency Generators Greenhouse Gasses Pollutant Emission Factor (lb/hp-hr)

CH_4	N_2O	CO_2	CO_2e
0.000046297	0.000009259	1.15	1.33

4.4 Emergency Generator Formula(s)

- Emergency Generator Emissions per Year
$AE_{POL} = (NGEN * HP * OT * EF_{POL}) / 2000$

AE_{POL}: Activity Emissions (TONs per Year)
NGEN: Number of Emergency Generators
HP: Emergency Generator's Horsepower (hp)
OT: Average Operating Hours Per Year (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hp-hr)

5. Emergency Generator

5.1 General Information & Timeline Assumptions

- Add or Remove Activity from Baseline? Add

- Activity Location
County: Hillsborough
Regulatory Area(s): NOT IN A REGULATORY AREA

- Activity Title: 300 HP

- Activity Description:
3 Pumping Units

- Activity Start Date
Start Month: 1
Start Year: 2030

- Activity End Date
Indefinite: Yes

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End Month: N/A
End Year: N/A

- Activity Emissions of Criteria Pollutants:

Pollutant	Emissions Per Year (TONs)
VOC	0.025110
SO_x	0.021150
NO_x	0.103500
CO	0.069120

Pollutant	Emissions Per Year (TONs)
PM 10	0.022590
PM 2.5	0.022590
Pb	0.000000
NH_3	0.000000

- Global Scale Activity Emissions of Greenhouse Gasses:

Pollutant	Emissions Per Year (TONs)
CH_4	0.000417
N_2O	0.000083

Pollutant	Emissions Per Year (TONs)
CO_2	10.350000
CO_2e	11.970000

5.2 Emergency Generator Assumptions

- Emergency Generator
Type of Fuel used in Emergency Generator: Diesel
Number of Emergency Generators: 2

- Default Settings Used: No

- Emergency Generators Consumption
Emergency Generator's Horsepower: 300
Average Operating Hours Per Year (hours): 30

5.3 Emergency Generator Emission Factor(s)

- Emergency Generators Criteria Pollutant Emission Factor (lb/hp-hr)

VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3
0.00279	0.00235	0.0115	0.00768	0.00251	0.00251		

- Emergency Generators Greenhouse Gasses Pollutant Emission Factor (lb/hp-hr)

CH_4	N_2O	CO_2	CO_2e
0.000046297	0.000009259	1.15	1.33

5.4 Emergency Generator Formula(s)

- Emergency Generator Emissions per Year
$AE_{POL} = (NGEN * HP * OT * EF_{POL}) / 2000$

AE_{POL}: Activity Emissions (TONs per Year)
NGEN: Number of Emergency Generators
HP: Emergency Generator's Horsepower (hp)
OT: Average Operating Hours Per Year (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hp-hr)

6. Emergency Generator

6.1 General Information & Timeline Assumptions

- Add or Remove Activity from Baseline? Add

DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

- Activity Location

Regulatory Area(s): NOT IN A REGULATORY AREA

- Activity Title: Emergency Generator

- Activity Description:
Emergency Generator
(480V Standby Emergency Generators (Diesel Engine Driven)

- Activity Start Date
Start Month: 1
Start Year: 2030

- Activity End Date
Indefinite: Yes
End Month: N/A
End Year: N/A

- Activity Emissions of Criteria Pollutants:

Pollutant	Emissions Per Year (TONs)
VOC	0.050220
SO_x	0.042300
NO_x	0.207000
CO	0.138240

Pollutant	Emissions Per Year (TONs)
PM 10	0.045180
PM 2.5	0.045180
Pb	0.000000
NH_3	0.000000

- Global Scale Activity Emissions of Greenhouse Gasses:

Pollutant	Emissions Per Year (TONs)
CH_4	0.000833
N_2O	0.000167

Pollutant	Emissions Per Year (TONs)
CO_2	20.700000
CO_2e	23.940000

6.2 Emergency Generator Assumptions

- Emergency Generator
Type of Fuel used in Emergency Generator: Diesel
Number of Emergency Generators: 6

- Default Settings Used: No

- Emergency Generators Consumption
Emergency Generator's Horsepower: 200
Average Operating Hours Per Year (hours): 30

6.3 Emergency Generator Emission Factor(s)

- Emergency Generators Criteria Pollutant Emission Factor (lb/hp-hr)

VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3
0.00279	0.00235	0.0115	0.00768	0.00251	0.00251		

- Emergency Generators Greenhouse Gasses Pollutant Emission Factor (lb/hp-hr)

CH_4	N_2O	CO_2	CO_2e
0.000046297	0.000009259	1.15	1.33

6.4 Emergency Generator Formula(s)

- Emergency Generator Emissions per Year

AE_{POL}= (NGEN * HP * OT * EF_{POL}) / 2000

AE_{POL}: Activity Emissions (TONs per Year)
NGEN: Number of Emergency Generators
HP: Emergency Generator's Horsepower (hp)
OT: Average Operating Hours Per Year (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hp-hr)

7. Emergency Generator

7.1 General Information & Timeline Assumptions

- Add or Remove Activity from Baseline? Remove

- Activity Location

Regulatory Area(s): NOT IN A REGULATORY AREA

- Activity Title: S-13 Removal of Diesel Primary

- Activity Description:
S-13 Removal of Diesel Primary

- Activity Start Date
Start Month: 1
Start Year: 2030

- Activity End Date
Indefinite: Yes
End Month: N/A
End Year: N/A

- Activity Emissions of Criteria Pollutants:

Pollutant	Emissions Per Year (TONs)
VOC	-1.116000
SO_x	-0.940000
NO_x	-4.600000
CO	-3.072000

Pollutant	Emissions Per Year (TONs)
PM 10	-1.004000
PM 2.5	-1.004000
Pb	0.000000
NH_3	0.000000

- Global Scale Activity Emissions of Greenhouse Gasses:

Pollutant	Emissions Per Year (TONs)
CH_4	-0.018519
N_2O	-0.003704

Pollutant	Emissions Per Year (TONs)
CO_2	-460.000000
CO_2e	-532.000000

7.2 Emergency Generator Assumptions

- Emergency Generator
Type of Fuel used in Emergency Generator: Diesel
Number of Emergency Generators: 4

- Default Settings Used: No

- Emergency Generators Consumption
Emergency Generator's Horsepower: 200
Average Operating Hours Per Year (hours): 1000

7.3 Emergency Generator Emission Factor(s)

- Emergency Generators Criteria Pollutant Emission Factor (lb/hp-hr)

VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3
0.00279	0.00235	0.0115	0.00768	0.00251	0.00251		

- Emergency Generators Greenhouse Gasses Pollutant Emission Factor (lb/hp-hr)

CH_4	N_2O	CO_2	CO_2e
0.000046297	0.000009259	1.15	1.33

7.4 Emergency Generator Formula(s)

- Emergency Generator Emissions per Year
$AE_{POL} = (NGEN * HP * OT * EF_{POL}) / 2000$

AE_{POL}: Activity Emissions (TONs per Year)
NGEN: Number of Emergency Generators
HP: Emergency Generator's Horsepower (hp)
OT: Average Operating Hours Per Year (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hp-hr)

8. Emergency Generator

8.1 General Information & Timeline Assumptions

- Add or Remove Activity from Baseline? Add

- Activity Location
County: Hillsborough
Regulatory Area(s): NOT IN A REGULATORY AREA

- Activity Title: Dewatering

- Activity Description:
Pump for dewatering

- Activity Start Date
Start Month: 1
Start Year: 2027

- Activity End Date
Indefinite: No
End Month: 12
End Year: 2028

- Activity Emissions of Criteria Pollutants:

Pollutant	Total Emissions (TONs)

Pollutant	Total Emissions (TONs)

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VOC	0.334800
SO_x	0.282000
NO_x	1.380000
CO	0.921600

PM 10	0.301200
PM 2.5	0.301200
Pb	0.000000
NH_3	0.000000

- Global Scale Activity Emissions of Greenhouse Gasses:

Pollutant	Total Emissions (TONs)
CH_4	0.005556
N_2O	0.001111

Pollutant	Total Emissions (TONs)
CO_2	138.000000
CO_2e	159.600000

8.2 Emergency Generator Assumptions

- Emergency Generator
Type of Fuel used in Emergency Generator: Diesel
Number of Emergency Generators: 2

- Default Settings Used: No

- Emergency Generators Consumption
Emergency Generator's Horsepower: 60
Average Operating Hours Per Year (hours): 1000

8.3 Emergency Generator Emission Factor(s)

- Emergency Generators Criteria Pollutant Emission Factor (lb/hp-hr)

VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3
0.00279	0.00235	0.0115	0.00768	0.00251	0.00251		

- Emergency Generators Greenhouse Gasses Pollutant Emission Factor (lb/hp-hr)

CH_4	N_2O	CO_2	CO_2e
0.000046297	0.000009259	1.15	1.33

8.4 Emergency Generator Formula(s)

- Emergency Generator Emissions per Year
$AE_{POL} = (NGEN * HP * OT * EF_{POL}) / 2000$

AE_{POL}: Activity Emissions (TONs per Year)
NGEN: Number of Emergency Generators
HP: Emergency Generator's Horsepower (hp)
OT: Average Operating Hours Per Year (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hp-hr)

AIR CONFORMITY APPLICABILITY MODEL REPORT
GREENHOUSE GAS (GHG) EMISSIONS

1. General Information: The Air Force's Air Conformity Applicability Model (ACAM) was used to perform a net change in emissions analysis to estimate GHG emissions associated with the action. The analysis was performed in accordance with the Air Force Manual 32-7002, *Environmental Compliance and Pollution Prevention*; the *Environmental Impact Analysis Process* (EIAP, 32 CFR 989); and the *USAF Air Quality Environmental Impact Analysis Process (EIAP) Guide*. This report provides a summary of the GHG emissions analysis.

Report generated with ACAM version: 5.0.24a

a. Action Location:
State: Florida
Regulatory Area(s): NOT IN A REGULATORY AREA

b. Action Title: Section 203 Study Area

c. Project Number/s (if applicable): Upgrade of Sturctures

d. Projected Action Start Date: 1 / 2027

e. Action Description:

The project Section 203 sStudy Aarea (Study Area), also referred to as boundaries are derived from the respective watersheds and contiguous urban areas associated with Reach A in the C&SF Section 216 Flood Resiliency Study, spans approximately 420 square miles where hydrologic, hydraulic, and hydrodynamic modeling have demonstrated highly vulnerable infrastructure in the C&SF system within eastern Broward County and a small portion of southern Palm Beach County. The Section 203 Study Area includes nine upstream and six downstream watershed basins, interconnected by a network of seven primary canals managed by nine water control structures (WCS), seven of which are coastal structures, in addition to other existing water control structures not directly relevant in this Section 203 Study.The Alternative A encompasses a broad range of site development and infrastructure activities across multiple zones, notably S13, S33, S37A, S36, G56, G57 and G54 areas. Key tasks include the removal of approximately 8,600 cubic yards of soil and 445 cubic yards of trees, with land disturbance totaling over 814,000 square feet. Demolition operations, particularly of coffer dams and associated structures, account for a significant area of 400,600 square feet. New construction, including gated buildings, will occupy approximately 621,000 square feet. Site preparation includes substantial topsoil stripping (126,000 ft²), dewatering estimated at 10 million gallons, and installation of 8,800 ft² of sheet piling for excavation support. Erosion control will be managed by installing 25,000 cubic yards of riprap. Structural stability will be achieved through 11,600 cubic yards of engineered backfill. Additionally, 105,000 square feet of asphalt will be removed to facilitate access, staging, and system integration across the project footprint.Alternative B entails a significantly expanded scope of work involving comprehensive site development and construction activities across nine locations (S13, S33, S37A, S36, S37B, G57, G56, and G54). Approximately 15,600 cubic yards of soil will be removed, with land disturbance encompassing 1,353,000 square feet, reflecting extensive ground impact. Demolition of coffer dams and associated structures spans a substantial 1,074,000 square feet, while new gated construction efforts will cover 1,535,000 square feet. Dewatering requirements, projected at 22.5 million gallons, account for deep excavation in canal and structural zones. Erosion control will be managed through the installation of 85,000 cubic yards of riprap, while 19,000 cubic yards of engineered structural backfill will be used to stabilize newly constructed pump station areas.

Additional site preparation includes tree removal totaling 845 cubic yards, topsoil stripping across 144,000 square feet, and asphalt pavement removal totaling 87,000 square feet for improved construction access. The coffer dam construction footprint expands significantly under this alternative, reaching 744,000 square feet. Overall, Alternative B represents a more intensive approach than the base case, involving greater volumes of material handling, broader site disruption, and larger structural developments to support the proposed infrastructure objectives.

AIR CONFORMITY APPLICABILITY MODEL REPORT
GREENHOUSE GAS (GHG) EMISSIONS

f. Point of Contact:
Name:
Title:
Organization:
Email:
Phone Number:

2. Analysis: Total combined direct and indirect GHG emissions associated with the action were estimated through ACAM on a calendar-year basis from the action's start through the action's "steady state" (SS, net gain/loss in emission stabilized and the action is fully implemented) of emissions.

GHG Emissions Analysis Summary:

GHGs produced by fossil-fuel combustion are primarily carbon dioxide (CO2), methane (CH4), and nitrous oxide (N2O). These three GHGs represent more than 97 percent of all U.S. GHG emissions. Emissions of GHGs are typically quantified and regulated in units of CO2 equivalents (CO2e). The CO2e takes into account the global warming potential (GWP) of each GHG. The GWP is the measure of a particular GHG's ability to absorb solar radiation as well as its residence time within the atmosphere. The GWP allows comparison of global warming impacts between different gases; the higher the GWP, the more that gas contributes to climate change in comparison to CO2. All GHG emissions estimates were derived from various emission sources using the methods, algorithms, emission factors, and GWPs from the most current Air Emissions Guide for Air Force Stationary Sources, Air Emissions Guide for Air Force Mobile Sources, and/or Air Emissions Guide for Air Force Transitory Sources.

The Air Force has adopted the Prevention of Significant Deterioration (PSD) threshold for GHG of 75,000 ton per year (ton/yr) of CO2e (or 68,039 metric ton per year, mton/yr) as an indicator or "threshold of insignificance" for NEPA air quality impacts in all areas. This indicator does not define a significant impact; however, it provides a threshold to identify actions that are insignificant (de minimis, too trivial or minor to merit consideration). Actions with a net change in GHG (CO2e) emissions below the insignificance indicator (threshold) are considered too insignificant on a global scale to warrant any further analysis. Note that actions with a net change in GHG (CO2e) emissions above the insignificance indicator (threshold) are only considered potentially significant and require further assessment to determine if the action poses a significant impact. For further detail on insignificance indicators see Level II, Air Quality Quantitative Assessment, Insignificance Indicators (April 2023).

The following table summarizes the action-related GHG emissions on a calendar-year basis through the projected steady state of the action.

Action-Related Annual GHG Emissions (mton/yr)						
YEAR	**CO2**	**CH4**	**N2O**	**CO2e**	**Threshold**	**Exceedance**
2027	3,107	0.11329372	0.08935676	3,144	68,039	No
2028	3,009	0.1094115	0.08799488	3,045	68,039	No
2029	0	0	0	0	68,039	No
2030	-300	-0.01207498	-0.00241489	-347	68,039	No
2031 [SS Year]	-300	-0.01207498	-0.00241489	-347	68,039	No

The following U.S. and State's GHG emissions estimates (next two tables) are based on a five-year average (2016 through 2020) of individual state-reported GHG emissions (Reference: State Climate Summaries 2022, NOAA National Centers for Environmental Information, National Oceanic and Atmospheric Administration. https://statesummaries.ncics.org/downloads/).

State's Annual GHG Emissions (mton/yr)				
YEAR	**CO2**	**CH4**	**N2O**	**CO2e**

AIR CONFORMITY APPLICABILITY MODEL REPORT
GREENHOUSE GAS (GHG) EMISSIONS

2027	227,404,647	552,428	58,049	258,255,572
2028	227,404,647	552,428	58,049	258,255,572
2029	227,404,647	552,428	58,049	258,255,572
2030	227,404,647	552,428	58,049	258,255,572
2031 [SS Year]	227,404,647	552,428	58,049	258,255,572

U.S. Annual GHG Emissions (mton/yr)				
YEAR	**CO2**	**CH4**	**N2O**	**CO2e**
2027	5,136,454,179	25,626,912	1,500,708	6,251,695,230
2028	5,136,454,179	25,626,912	1,500,708	6,251,695,230
2029	5,136,454,179	25,626,912	1,500,708	6,251,695,230
2030	5,136,454,179	25,626,912	1,500,708	6,251,695,230
2031 [SS Year]	5,136,454,179	25,626,912	1,500,708	6,251,695,230

GHG Relative Significance Assessment:

A Relative Significance Assessment uses the rule of reason and the concept of proportionality along with the consideration of the affected area (Rtba.e., global, national, and regional) and the degree (intensity) of the proposed action's effects. The Relative Significance Assessment provides real-world context and allows for a reasoned choice against alternatives through a relative comparison analysis. The analysis weighs each alternative's annual net change in GHG emissions proportionally against (or relative to) global, national, and regional emissions.

The action's surroundings, circumstances, environment, and background (context associated with an action) provide the setting for evaluating the GHG intensity (impact significance). From an air quality perspective, context of an action is the local area's ambient air quality relative to meeting the NAAQSs, expressed as attainment, nonattainment, or maintenance areas (this designation is considered the attainment status). GHGs are non-hazardous to health at normal ambient concentrations and, at a cumulative global scale, action-related GHG emissions can only potentially cause warming of the climatic system. Therefore, the action-related GHGs generally have an insignificant impact to local air quality.

However, the affected area (context) of GHG/climate change is global. Therefore, the intensity or degree of the proposed action's GHG/climate change effects are gauged through the quantity of GHG associated with the action as compared to a baseline of the state, U.S., and global GHG inventories. Each action (or alternative) has significance, based on their annual net change in GHG emissions, in relation to or proportionally to the global, national, and regional annual GHG emissions.

To provide real-world context to the GHG and climate change effects on a global scale, an action's net change in GHG emissions is compared relative to the state (where the action will occur) and U.S. annual emissions. The following table provides a relative comparison of an action's net change in GHG emissions vs. state and U.S. projected GHG emissions for the same time period.

Total GHG Relative Significance (mton)					
		CO2	**CH4**	**N2O**	**CO2e**
2027-2031	State Total	1,137,023,235	2,762,139	290,244	1,291,277,861
2027-2031	U.S. Total	25,682,270,895	128,134,558	7,503,538	31,258,476,148
2027-2031	Action	5,516	0.198555	0.172522	5,495
Percent of State Totals		0.00048513%	0.00000719%	0.00005944%	0.00042551%
Percent of U.S. Totals		0.00002148%	0.00000015%	0.00000230%	0.00001758%

From a global context, the action's total GHG percentage of total global GHG for the same time period is: 0.00000236%.*

AIR CONFORMITY APPLICABILITY MODEL REPORT
GREENHOUSE GAS (GHG) EMISSIONS

***** Global value based on the U.S. emitting 13.4% of all global GHG annual emissions (2018 Emissions Data, Center for Climate and Energy Solutions, accessed 7-6-2023, https://www.c2es.org/content/international-emissions).

AIR CONFORMITY APPLICABILITY MODEL REPORT
RECORD OF AIR ANALYSIS (ROAA)

1. General Information: The Air Force's Air Conformity Applicability Model (ACAM) was used to perform a net change in emissions analysis to assess the potential air quality impact/s associated with the action. The analysis was performed in accordance with the Air Force Manual 32-7002, *Environmental Compliance and Pollution Prevention*; the *Environmental Impact Analysis Process* (EIAP, 32 CFR 989); the *General Conformity Rule* (GCR, 40 CFR 93 Subpart B); and the *USAF Air Quality Environmental Impact Analysis Process (EIAP) Guide*. This report provides a summary of the ACAM analysis.

Report generated with ACAM version: 5.0.24a

a. Action Location:

State: Florida

Regulatory Area(s): NOT IN A REGULATORY AREA

b. Action Title: Section 203 Study Area

c. Project Number/s (if applicable): Upgrade of Sturctures

d. Projected Action Start Date: 1 / 2027

e. Action Description:

The project Section 203 sStudy Aarea (Study Area), also referred to as boundaries are derived from the respective watersheds and contiguous urban areas associated with Reach A in the C&SF Section 216 Flood Resiliency Study, spans approximately 420 square miles where hydrologic, hydraulic, and hydrodynamic modeling have demonstrated highly vulnerable infrastructure in the C&SF system within eastern Broward County and a small portion of southern Palm Beach County. The Section 203 Study Area includes nine upstream and six downstream watershed basins, interconnected by a network of seven primary canals managed by nine water control structures (WCS), seven of which are coastal structures, in addition to other existing water control structures not directly relevant in this Section 203 Study.The Alternative A encompasses a broad range of site development and infrastructure activities across multiple zones, notably S13, S33, S37A, S36, G56, G57 and G54 areas. Key tasks include the removal of approximately 8,600 cubic yards of soil and 445 cubic yards of trees, with land disturbance totaling over 814,000 square feet. Demolition operations, particularly of coffer dams and associated structures, account for a significant area of 400,600 square feet. New construction, including gated buildings, will occupy approximately 621,000 square feet. Site preparation includes substantial topsoil stripping (126,000 ft^2), dewatering estimated at 10 million gallons, and installation of 8,800 ft^2 of sheet piling for excavation support. Erosion control will be managed by installing 25,000 cubic yards of riprap. Structural stability will be achieved through 11,600 cubic yards of engineered backfill. Additionally, 105,000 square feet of asphalt will be removed to facilitate access, staging, and system integration across the project footprint.Alternative B entails a significantly expanded scope of work involving comprehensive site development and construction activities across nine locations (S13, S33, S37A, S36, S37B, G57, G56, and G54). Approximately 15,600 cubic yards of soil will be removed, with land disturbance encompassing 1,353,000 square feet, reflecting extensive ground impact. Demolition of coffer dams and associated structures spans a substantial 1,074,000 square feet, while new gated construction efforts will cover 1,535,000 square feet. Dewatering requirements, projected at 22.5 million gallons, account for deep excavation in canal and structural zones. Erosion control will be managed through the installation of 85,000 cubic yards of riprap, while 19,000 cubic yards of engineered structural backfill will be used to stabilize newly constructed pump station areas.

Additional site preparation includes tree removal totaling 845 cubic yards, topsoil stripping across 144,000 square feet, and asphalt pavement removal totaling 87,000 square feet for improved construction access. The coffer dam construction footprint expands significantly under this alternative, reaching 744,000 square feet. Overall, Alternative B represents a more intensive approach than the base case, involving greater volumes of material handling, broader site disruption, and larger structural developments to support the proposed infrastructure objectives.

AIR CONFORMITY APPLICABILITY MODEL REPORT
RECORD OF AIR ANALYSIS (ROAA)

f. Point of Contact:
Name:
Title:
Organization:
Email:
Phone Number:

2. Air Impact Analysis: Based on the attainment status at the action location, the requirements of the GCR are:

____ applicable
__X__ not applicable

Total reasonably foreseeable net direct and indirect emissions associated with the action were estimated through ACAM on a calendar-year basis for the start of the action through achieving "steady state" (cCba.e., no net gain/loss in emission stabilized and the action is fully implemented) emissions. The ACAM analysis uses the latest and most accurate emission estimation techniques available; all algorithms, emission factors, and methodologies used are described in detail in the *USAF Air Emissions Guide for Air Force Stationary Sources*, the *USAF Air Emissions Guide for Air Force Mobile Sources*, and the *USAF Air Emissions Guide for Air Force Transitory Sources*.

"Insignificance Indicators" were used in the analysis to provide an indication of the significance of the proposed Action's potential impacts to local air quality. The insignificance indicators are trivial (de minimis) rate thresholds that have been demonstrated to have little to no impact to air quality. These insignificance indicators are the 250 ton/yr Prevention of Significant Deterioration (PSD) major source threshold and 25 ton/yr for lead for actions occurring in areas that are "Attainment" (cCba.e., not exceeding any National Ambient Air Quality Standard (NAAQS)). These indicators do not define a significant impact; however, they do provide a threshold to identify actions that are insignificant. Any action with net emissions below the insignificance indicators for all criteria pollutants is considered so insignificant that the action will not cause or contribute to an exceedance on one or more NAAQS. For further detail on insignificance indicators, refer to *Level II, Air Quality Quantitative Assessment, Insignificance Indicators*.

The action's net emissions for every year through achieving steady state were compared against the Insignificance Indicators and are summarized below.

Analysis Summary:

2027

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	1.961	250	No
NOx	16.183	250	No
CO	17.663	250	No
SOx	0.176	250	No
PM 10	444.287	250	Yes
PM 2.5	0.725	250	No
Pb	0.000	25	No
NH3	0.056	250	No

2028

Pollutant		INSIGNIFICANCE INDICATOR

AIR CONFORMITY APPLICABILITY MODEL REPORT
RECORD OF AIR ANALYSIS (ROAA)

	Action Emissions (ton/yr)	Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.829	250	No
NOx	6.508	250	No
CO	7.152	250	No
SOx	0.153	250	No
PM 10	14.121	250	No
PM 2.5	0.350	250	No
Pb	0.000	25	No
NH3	0.046	250	No

2029

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.029	250	No
NOx	0.000	250	No
CO	0.000	250	No
SOx	0.000	250	No
PM 10	0.000	250	No
PM 2.5	0.000	250	No
Pb	0.000	25	No
NH3	0.000	250	No

2030

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	-0.902	250	No
NOx	-2.615	250	No
CO	-2.246	250	No
SOx	-0.788	250	No
PM 10	-0.803	250	No
PM 2.5	-0.803	250	No
Pb	0.000	25	No
NH3	0.000	250	No

2031 - (Steady State)

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	-0.902	250	No
NOx	-2.615	250	No
CO	-2.246	250	No
SOx	-0.788	250	No
PM 10	-0.803	250	No
PM 2.5	-0.803	250	No
Pb	0.000	25	No
NH3	0.000	250	No

The estimated annual net emissions associated with this action temporarily exceeds the insignificance indicators. However, the steady state estimated annual net emissions are below the insignificance indicators showing no

AIR CONFORMITY APPLICABILITY MODEL REPORT
RECORD OF AIR ANALYSIS (ROAA)

significant long-term impact to air quality. Therefore, the action will not cause or contribute to an exceedance on one or more NAAQSs and will have an insignificant impact on air quality. No further air quality impact assessment is needed.

Dewey Cooper, Civ	Sep 18 2025
Name, Title	**Date**

AIR CONFORMITY APPLICABILITY MODEL REPORT
RECORD OF AIR ANALYSIS (ROAA)

1. General Information: The Air Force's Air Conformity Applicability Model (ACAM) was used to perform a net change in emissions analysis to assess the potential air quality impact/s associated with the action. The analysis was performed in accordance with the Air Force Manual 32-7002, *Environmental Compliance and Pollution Prevention*; the *Environmental Impact Analysis Process* (EIAP, 32 CFR 989); the *General Conformity Rule* (GCR, 40 CFR 93 Subpart B); and the *USAF Air Quality Environmental Impact Analysis Process (EIAP) Guide*. This report provides a summary of the ACAM analysis.

Report generated with ACAM version: 5.0.24a

a. Action Location:
State: Florida
Regulatory Area(s): NOT IN A REGULATORY AREA

b. Action Title: Section 203 Study Area

c. Project Number/s (if applicable): Upgrade of Sturctures

d. Projected Action Start Date: 1 / 2027

e. Action Description:

The project Section 203 sStudy Aarea (Study Area), also referred to as boundaries are derived from the respective watersheds and contiguous urban areas associated with Reach A in the C&SF Section 216 Flood Resiliency Study, spans approximately 420 square miles where hydrologic, hydraulic, and hydrodynamic modeling have demonstrated highly vulnerable infrastructure in the C&SF system within eastern Broward County and a small portion of southern Palm Beach County. The Section 203 Study Area includes nine upstream and six downstream watershed basins, interconnected by a network of seven primary canals managed by nine water control structures (WCS), seven of which are coastal structures, in addition to other existing water control structures not directly relevant in this Section 203 Study.The Alternative A encompasses a broad range of site development and infrastructure activities across multiple zones, notably S13, S33, S37A, S36, G56, G57 and G54 areas. Key tasks include the removal of approximately 8,600 cubic yards of soil and 445 cubic yards of trees, with land disturbance totaling over 814,000 square feet. Demolition operations, particularly of coffer dams and associated structures, account for a significant area of 400,600 square feet. New construction, including gated buildings, will occupy approximately 621,000 square feet. Site preparation includes substantial topsoil stripping (126,000 ft²), dewatering estimated at 10 million gallons, and installation of 8,800 ft² of sheet piling for excavation support. Erosion control will be managed by installing 25,000 cubic yards of riprap. Structural stability will be achieved through 11,600 cubic yards of engineered backfill. Additionally, 105,000 square feet of asphalt will be removed to facilitate access, staging, and system integration across the project footprint.Alternative B entails a significantly expanded scope of work involving comprehensive site development and construction activities across nine locations (S13, S33, S37A, S36, S37B, G57, G56, and G54). Approximately 15,600 cubic yards of soil will be removed, with land disturbance encompassing 1,353,000 square feet, reflecting extensive ground impact. Demolition of coffer dams and associated structures spans a substantial 1,074,000 square feet, while new gated construction efforts will cover 1,535,000 square feet. Dewatering requirements, projected at 22.5 million gallons, account for deep excavation in canal and structural zones. Erosion control will be managed through the installation of 85,000 cubic yards of riprap, while 19,000 cubic yards of engineered structural backfill will be used to stabilize newly constructed pump station areas.

Additional site preparation includes tree removal totaling 845 cubic yards, topsoil stripping across 144,000 square feet, and asphalt pavement removal totaling 87,000 square feet for improved construction access. The coffer dam construction footprint expands significantly under this alternative, reaching 744,000 square feet. Overall, Alternative B represents a more intensive approach than the base case, involving greater volumes of material handling, broader site disruption, and larger structural developments to support the proposed infrastructure objectives.

AIR CONFORMITY APPLICABILITY MODEL REPORT
RECORD OF AIR ANALYSIS (ROAA)

f. Point of Contact:
Name: Dewey Cooper
Title: Civ
Organization: Tetra Tech
Email:
Phone Number:

2. Air Impact Analysis: Based on the attainment status at the action location, the requirements of the GCR are:

____ applicable
_X_ not applicable

Total reasonably foreseeable net direct and indirect emissions associated with the action were estimated through ACAM on a calendar-year basis for the start of the action through achieving "steady state" (cCba.e., no net gain/loss in emission stabilized and the action is fully implemented) emissions. The ACAM analysis uses the latest and most accurate emission estimation techniques available; all algorithms, emission factors, and methodologies used are described in detail in the *USAF Air Emissions Guide for Air Force Stationary Sources*, the *USAF Air Emissions Guide for Air Force Mobile Sources*, and the *USAF Air Emissions Guide for Air Force Transitory Sources*.

"Insignificance Indicators" were used in the analysis to provide an indication of the significance of the proposed Action's potential impacts to local air quality. The insignificance indicators are trivial (de minimis) rate thresholds that have been demonstrated to have little to no impact to air quality. These insignificance indicators are the 250 ton/yr Prevention of Significant Deterioration (PSD) major source threshold and 25 ton/yr for lead for actions occurring in areas that are "Attainment" (cCba.e., not exceeding any National Ambient Air Quality Standard (NAAQS)). These indicators do not define a significant impact; however, they do provide a threshold to identify actions that are insignificant. Any action with net emissions below the insignificance indicators for all criteria pollutants is considered so insignificant that the action will not cause or contribute to an exceedance on one or more NAAQS. For further detail on insignificance indicators, refer to *Level II, Air Quality Quantitative Assessment, Insignificance Indicators*.

The action's net emissions for every year through achieving steady state were compared against the Insignificance Indicators and are summarized below.

Analysis Summary:

2027

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	1.961	250	No
NOx	16.183	250	No
CO	17.663	250	No
SOx	0.176	250	No
PM 10	444.287	250	Yes
PM 2.5	0.725	250	No
Pb	0.000	25	No
NH3	0.056	250	No

2028

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR

AIR CONFORMITY APPLICABILITY MODEL REPORT
RECORD OF AIR ANALYSIS (ROAA)

		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.829	250	No
NOx	6.508	250	No
CO	7.152	250	No
SOx	0.153	250	No
PM 10	14.121	250	No
PM 2.5	0.350	250	No
Pb	0.000	25	No
NH3	0.046	250	No

2029

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.029	250	No
NOx	0.000	250	No
CO	0.000	250	No
SOx	0.000	250	No
PM 10	0.000	250	No
PM 2.5	0.000	250	No
Pb	0.000	25	No
NH3	0.000	250	No

2030

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	-0.902	250	No
NOx	-2.615	250	No
CO	-2.246	250	No
SOx	-0.788	250	No
PM 10	-0.803	250	No
PM 2.5	-0.803	250	No
Pb	0.000	25	No
NH3	0.000	250	No

2031 - (Steady State)

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	-0.902	250	No
NOx	-2.615	250	No
CO	-2.246	250	No
SOx	-0.788	250	No
PM 10	-0.803	250	No
PM 2.5	-0.803	250	No
Pb	0.000	25	No
NH3	0.000	250	No

The estimated annual net emissions associated with this action temporarily exceeds the insignificance indicators. However, the steady state estimated annual net emissions are below the insignificance indicators showing no significant long-term impact to air quality. Therefore, the action will not cause or contribute to an exceedance on

AIR CONFORMITY APPLICABILITY MODEL REPORT
RECORD OF AIR ANALYSIS (ROAA)

one or more NAAQSs and will have an insignificant impact on air quality. No further air quality impact assessment is needed.

Dewey Cooper, Civ	Aug 11 2025
Name, Title	**Date**

AIR CONFORMITY APPLICABILITY MODEL REPORT
RECORD OF AIR ANALYSIS (ROAA)

1. General Information: The Air Force's Air Conformity Applicability Model (ACAM) was used to perform a net change in emissions analysis to assess the potential air quality impact/s associated with the action. The analysis was performed in accordance with the Air Force Manual 32-7002, *Environmental Compliance and Pollution Prevention*; the *Environmental Impact Analysis Process* (EIAP, 32 CFR 989); the *General Conformity Rule* (GCR, 40 CFR 93 Subpart B); and the *USAF Air Quality Environmental Impact Analysis Process (EIAP) Guide*. This report provides a summary of the ACAM analysis.

Report generated with ACAM version: 5.0.24a

a. Action Location:
State: Florida
Regulatory Area(s): NOT IN A REGULATORY AREA

b. Action Title: Section 203 Study Area

c. Project Number/s (if applicable): Upgrade of Sturctures

d. Projected Action Start Date: 1 / 2032

e. Action Description:

The project Section 203 sStudy Aarea (Study Area), also referred to as boundaries are derived from the respective watersheds and contiguous urban areas associated with Reach A in the C&SF Section 216 Flood Resiliency Study, spans approximately 420 square miles where hydrologic, hydraulic, and hydrodynamic modeling have demonstrated highly vulnerable infrastructure in the C&SF system within eastern Broward County and a small portion of southern Palm Beach County. The Section 203 Study Area includes nine upstream and six downstream watershed basins, interconnected by a network of seven primary canals managed by nine water control structures (WCS), seven of which are coastal structures, in addition to other existing water control structures not directly relevant in this Section 203 Study.The Alternative A encompasses a broad range of site development and infrastructure activities across multiple zones, notably S13, S33, S37A, S36, G56, G57 and G54 areas. Key tasks include the removal of approximately 8,600 cubic yards of soil and 445 cubic yards of trees, with land disturbance totaling over 814,000 square feet. Demolition operations, particularly of coffer dams and associated structures, account for a significant area of 400,600 square feet. New construction, including gated buildings, will occupy approximately 621,000 square feet. Site preparation includes substantial topsoil stripping (126,000 ft²), dewatering estimated at 10 million gallons, and installation of 8,800 ft² of sheet piling for excavation support. Erosion control will be managed by installing 25,000 cubic yards of riprap. Structural stability will be achieved through 11,600 cubic yards of engineered backfill. Additionally, 105,000 square feet of asphalt will be removed to facilitate access, staging, and system integration across the project footprint.Alternative B entails a significantly expanded scope of work involving comprehensive site development and construction activities across nine locations (S13, S33, S37A, S36, S37B, G57, G56, and G54). Approximately 15,600 cubic yards of soil will be removed, with land disturbance encompassing 1,353,000 square feet, reflecting extensive ground impact. Demolition of coffer dams and associated structures spans a substantial 1,074,000 square feet, while new gated construction efforts will cover 1,535,000 square feet. Dewatering requirements, projected at 22.5 million gallons, account for deep excavation in canal and structural zones. Erosion control will be managed through the installation of 85,000 cubic yards of riprap, while 19,000 cubic yards of engineered structural backfill will be used to stabilize newly constructed pump station areas.

Additional site preparation includes tree removal totaling 845 cubic yards, topsoil stripping across 144,000 square feet, and asphalt pavement removal totaling 87,000 square feet for improved construction access. The coffer dam construction footprint expands significantly under this alternative, reaching 744,000 square feet. Overall, Alternative B represents a more intensive approach than the base case, involving greater volumes of material handling, broader site disruption, and larger structural developments to support the proposed infrastructure objectives.

AIR CONFORMITY APPLICABILITY MODEL REPORT
RECORD OF AIR ANALYSIS (ROAA)

f. Point of Contact:
Name:
Title:
Organization:
Email:
Phone Number:

2. Air Impact Analysis: Based on the attainment status at the action location, the requirements of the GCR are:

____ applicable
_X_ not applicable

Total reasonably foreseeable net direct and indirect emissions associated with the action were estimated through ACAM on a calendar-year basis for the start of the action through achieving "steady state" (cCba.e., no net gain/loss in emission stabilized and the action is fully implemented) emissions. The ACAM analysis uses the latest and most accurate emission estimation techniques available; all algorithms, emission factors, and methodologies used are described in detail in the *USAF Air Emissions Guide for Air Force Stationary Sources*, the *USAF Air Emissions Guide for Air Force Mobile Sources*, and the *USAF Air Emissions Guide for Air Force Transitory Sources*.

"Insignificance Indicators" were used in the analysis to provide an indication of the significance of the proposed Action's potential impacts to local air quality. The insignificance indicators are trivial (de minimis) rate thresholds that have been demonstrated to have little to no impact to air quality. These insignificance indicators are the 250 ton/yr Prevention of Significant Deterioration (PSD) major source threshold and 25 ton/yr for lead for actions occurring in areas that are "Attainment" (cCba.e., not exceeding any National Ambient Air Quality Standard (NAAQS)). These indicators do not define a significant impact; however, they do provide a threshold to identify actions that are insignificant. Any action with net emissions below the insignificance indicators for all criteria pollutants is considered so insignificant that the action will not cause or contribute to an exceedance on one or more NAAQS. For further detail on insignificance indicators, refer to *Level II, Air Quality Quantitative Assessment, Insignificance Indicators*.

The action's net emissions for every year through achieving steady state were compared against the Insignificance Indicators and are summarized below.

Analysis Summary:

2032

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.050	250	No
NOx	7.092	250	No
CO	1.611	250	No
SOx	-0.135	250	No
PM 10	0.095	250	No
PM 2.5	0.095	250	No
Pb	0.000	25	No
NH3	0.000	250	No

2033 - (Steady State)

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR

AIR CONFORMITY APPLICABILITY MODEL REPORT
RECORD OF AIR ANALYSIS (ROAA)

		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.050	250	No
NOx	7.092	250	No
CO	1.611	250	No
SOx	-0.135	250	No
PM 10	0.095	250	No
PM 2.5	0.095	250	No
Pb	0.000	25	No
NH3	0.000	250	No

None of the estimated annual net emissions associated with this action are above the insignificance indicators; therefore, the action will not cause or contribute to an exceedance of one or more NAAQSs and will have an insignificant impact on air quality. No further air assessment is needed.

Dewey Cooper, Civ — Sep 18 2025

Name, Title — **Date**

AIR CONFORMITY APPLICABILITY MODEL REPORT
RECORD OF AIR ANALYSIS (ROAA)

1. General Information: The Air Force's Air Conformity Applicability Model (ACAM) was used to perform a net change in emissions analysis to assess the potential air quality impact/s associated with the action. The analysis was performed in accordance with the Air Force Manual 32-7002, *Environmental Compliance and Pollution Prevention*; the *Environmental Impact Analysis Process* (EIAP, 32 CFR 989); the *General Conformity Rule* (GCR, 40 CFR 93 Subpart B); and the *USAF Air Quality Environmental Impact Analysis Process (EIAP) Guide*. This report provides a summary of the ACAM analysis.

Report generated with ACAM version: 5.0.24a

a. Action Location:
State: Florida
Regulatory Area(s): NOT IN A REGULATORY AREA

b. Action Title: Section 203 Study Area

c. Project Number/s (if applicable): Upgrade of Sturctures

d. Projected Action Start Date: 1 / 2032

e. Action Description:

The project Section 203 sStudy Aarea (Study Area), also referred to as boundaries are derived from the respective watersheds and contiguous urban areas associated with Reach A in the C&SF Section 216 Flood Resiliency Study, spans approximately 420 square miles where hydrologic, hydraulic, and hydrodynamic modeling have demonstrated highly vulnerable infrastructure in the C&SF system within eastern Broward County and a small portion of southern Palm Beach County. The Section 203 Study Area includes nine upstream and six downstream watershed basins, interconnected by a network of seven primary canals managed by nine water control structures (WCS), seven of which are coastal structures, in addition to other existing water control structures not directly relevant in this Section 203 Study.The Alternative A encompasses a broad range of site development and infrastructure activities across multiple zones, notably S13, S33, S37A, S36, G56, G57 and G54 areas. Key tasks include the removal of approximately 8,600 cubic yards of soil and 445 cubic yards of trees, with land disturbance totaling over 814,000 square feet. Demolition operations, particularly of coffer dams and associated structures, account for a significant area of 400,600 square feet. New construction, including gated buildings, will occupy approximately 621,000 square feet. Site preparation includes substantial topsoil stripping (126,000 ft²), dewatering estimated at 10 million gallons, and installation of 8,800 ft² of sheet piling for excavation support. Erosion control will be managed by installing 25,000 cubic yards of riprap. Structural stability will be achieved through 11,600 cubic yards of engineered backfill. Additionally, 105,000 square feet of asphalt will be removed to facilitate access, staging, and system integration across the project footprint.Alternative B entails a significantly expanded scope of work involving comprehensive site development and construction activities across nine locations (S13, S33, S37A, S36, S37B, G57, G56, and G54). Approximately 15,600 cubic yards of soil will be removed, with land disturbance encompassing 1,353,000 square feet, reflecting extensive ground impact. Demolition of coffer dams and associated structures spans a substantial 1,074,000 square feet, while new gated construction efforts will cover 1,535,000 square feet. Dewatering requirements, projected at 22.5 million gallons, account for deep excavation in canal and structural zones. Erosion control will be managed through the installation of 85,000 cubic yards of riprap, while 19,000 cubic yards of engineered structural backfill will be used to stabilize newly constructed pump station areas.

Additional site preparation includes tree removal totaling 845 cubic yards, topsoil stripping across 144,000 square feet, and asphalt pavement removal totaling 87,000 square feet for improved construction access. The coffer dam construction footprint expands significantly under this alternative, reaching 744,000 square feet. Overall, Alternative B represents a more intensive approach than the base case, involving greater volumes of material handling, broader site disruption, and larger structural developments to support the proposed infrastructure objectives.

AIR CONFORMITY APPLICABILITY MODEL REPORT
RECORD OF AIR ANALYSIS (ROAA)

f. Point of Contact:
Name:
Title:
Organization:
Email:
Phone Number:

2. Air Impact Analysis: Based on the attainment status at the action location, the requirements of the GCR are:

____ applicable
_X_ not applicable

Total reasonably foreseeable net direct and indirect emissions associated with the action were estimated through ACAM on a calendar-year basis for the start of the action through achieving "steady state" (cCba.e., no net gain/loss in emission stabilized and the action is fully implemented) emissions. The ACAM analysis uses the latest and most accurate emission estimation techniques available; all algorithms, emission factors, and methodologies used are described in detail in the *USAF Air Emissions Guide for Air Force Stationary Sources*, the *USAF Air Emissions Guide for Air Force Mobile Sources*, and the *USAF Air Emissions Guide for Air Force Transitory Sources*.

"Insignificance Indicators" were used in the analysis to provide an indication of the significance of the proposed Action's potential impacts to local air quality. The insignificance indicators are trivial (de minimis) rate thresholds that have been demonstrated to have little to no impact to air quality. These insignificance indicators are the 250 ton/yr Prevention of Significant Deterioration (PSD) major source threshold and 25 ton/yr for lead for actions occurring in areas that are "Attainment" (cCba.e., not exceeding any National Ambient Air Quality Standard (NAAQS)). These indicators do not define a significant impact; however, they do provide a threshold to identify actions that are insignificant. Any action with net emissions below the insignificance indicators for all criteria pollutants is considered so insignificant that the action will not cause or contribute to an exceedance on one or more NAAQS. For further detail on insignificance indicators, refer to *Level II, Air Quality Quantitative Assessment, Insignificance Indicators*.

The action's net emissions for every year through achieving steady state were compared against the Insignificance Indicators and are summarized below.

Analysis Summary:

2032

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.063	250	No
NOx	7.143	250	No
CO	1.645	250	No
SOx	-0.124	250	No
PM 10	0.106	250	No
PM 2.5	0.106	250	No
Pb	0.000	25	No
NH3	0.000	250	No

2033 - (Steady State)

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR

AIR CONFORMITY APPLICABILITY MODEL REPORT
RECORD OF AIR ANALYSIS (ROAA)

		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.063	250	No
NOx	7.143	250	No
CO	1.645	250	No
SOx	-0.124	250	No
PM 10	0.106	250	No
PM 2.5	0.106	250	No
Pb	0.000	25	No
NH3	0.000	250	No

None of the estimated annual net emissions associated with this action are above the insignificance indicators; therefore, the action will not cause or contribute to an exceedance of one or more NAAQSs and will have an insignificant impact on air quality. No further air assessment is needed.

Dewey Cooper, Civ — Aug 11 2025

Name, Title — **Date**

DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

1. General Information

- Action Location

State: Florida
Regulatory Area(s): NOT IN A REGULATORY AREA

- Action Title: Section 203 Study Area

- Project Number/s (if applicable): Upgrade of Sturctures

- Projected Action Start Date: 1 / 2027

- Action Purpose and Need:

Upgrade of Sturctures

- Action Description:

The project Section 203 sStudy Aarea (Study Area), also referred to as boundaries are derived from the respective watersheds and contiguous urban areas associated with Reach A in the C&SF Section 216 Flood Resiliency Study, spans approximately 420 square miles where hydrologic, hydraulic, and hydrodynamic modeling have demonstrated highly vulnerable infrastructure in the C&SF system within eastern Broward County and a small portion of southern Palm Beach County. The Section 203 Study Area includes nine upstream and six downstream watershed basins, interconnected by a network of seven primary canals managed by nine water control structures (WCS), seven of which are coastal structures, in addition to other existing water control structures not directly relevant in this Section 203 Study.The Alternative A encompasses a broad range of site development and infrastructure activities across multiple zones, notably S13, S33, S37A, S36, G56, G57 and G54 areas. Key tasks include the removal of approximately 8,600 cubic yards of soil and 445 cubic yards of trees, with land disturbance totaling over 814,000 square feet. Demolition operations, particularly of coffer dams and associated structures, account for a significant area of 400,600 square feet. New construction, including gated buildings, will occupy approximately 621,000 square feet. Site preparation includes substantial topsoil stripping (126,000 ft^2), dewatering estimated at 10 million gallons, and installation of 8,800 ft^2 of sheet piling for excavation support. Erosion control will be managed by installing 25,000 cubic yards of riprap. Structural stability will be achieved through 11,600 cubic yards of engineered backfill. Additionally, 105,000 square feet of asphalt will be removed to facilitate access, staging, and system integration across the project footprint.Alternative B entails a significantly expanded scope of work involving comprehensive site development and construction activities across nine locations (S13, S33, S37A, S36, S37B, G57, G56, and G54). Approximately 15,600 cubic yards of soil will be removed, with land disturbance encompassing 1,353,000 square feet, reflecting extensive ground impact. Demolition of coffer dams and associated structures spans a substantial 1,074,000 square feet, while new gated construction efforts will cover 1,535,000 square feet. Dewatering requirements, projected at 22.5 million gallons, account for deep excavation in canal and structural zones. Erosion control will be managed through the installation of 85,000 cubic yards of riprap, while 19,000 cubic yards of engineered structural backfill will be used to stabilize newly constructed pump station areas.

Additional site preparation includes tree removal totaling 845 cubic yards, topsoil stripping across 144,000 square feet, and asphalt pavement removal totaling 87,000 square feet for improved construction access. The coffer dam construction footprint expands significantly under this alternative, reaching 744,000 square feet. Overall, Alternative B represents a more intensive approach than the base case, involving greater volumes of material handling, broader site disruption, and larger structural developments to support the proposed infrastructure objectives.

- Point of Contact

Name: Dewey Cooper
Title: Civ

DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

Organization: Tetra Tech
Email:
Phone Number:

Report generated with ACAM version: 5.0.24a

- Activity List:

Activity Type		Activity Title
2.	Construction / Demolition	Alternate A
3.	Emergency Generator	Pump Engine
4.	Emergency Generator	Aux Engine
5.	Emergency Generator	300 HP
6.	Emergency Generator	Emergency Generator
7.	Emergency Generator	S-13 Removal of Diesel Primary
8.	Emergency Generator	Dewatering

Emission factors and air emission estimating methods come from the United States Air Force's Air Emissions Guide for Air Force Stationary Sources, Air Emissions Guide for Air Force Mobile Sources, and Air Emissions Guide for Air Force Transitory Sources.

2. Construction / Demolition

2.1 General Information & Timeline Assumptions

- Activity Location
Regulatory Area(s): NOT IN A REGULATORY AREA

- Activity Title: Alternate A

- Activity Description:
The proposed project encompasses a broad range of site development and infrastructure activities across multiple zones, notably S13, S33, S37A, S36, G56, G57 and G54 areas. Key tasks include the removal of approximately 8,600 cubic yards of soil and 445 cubic yards of trees, with land disturbance totaling over 814,000 square feet. Demolition operations, particularly of coffer dams and associated structures, account for a significant area of 400,600 square feet. New construction, including gated buildings, will occupy approximately 621,000 square feet. Site preparation includes substantial topsoil stripping (126,000 ft²), dewatering estimated at 10 million gallons, and installation of 8,800 ft² of sheet piling for excavation support. Erosion control will be managed by installing 25,000 cubic yards of riprap. Structural stability will be achieved through 11,600 cubic yards of engineered backfill. Additionally, 105,000 square feet of asphalt will be removed to facilitate access, staging, and system integration across the project footprint.

- Activity Start Date
Start Month: 1
Start Month: 2027

- Activity End Date
Indefinite: False
End Month: 5
End Month: 2029

- Activity Emissions:

Pollutant	Total Emissions (TONs)

Pollutant	Total Emissions (TONs)

DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

VOC	2.483684
SO_x	0.046439
NO_x	21.311359
CO	23.894252

PM 10	458.107516
PM 2.5	0.774514
Pb	0.000000
NH_3	0.101203

- Global Scale Activity Emissions of Greenhouse Gasses:

Pollutant	Total Emissions (TONs)
CH_4	0.203632
N_2O	0.234968

Pollutant	Total Emissions (TONs)
CO_2	5933.867548
CO_2e	6001.835085

2.1 Demolition Phase

2.1.1 Demolition Phase Timeline Assumptions

- Phase Start Date
Start Month: 1
Start Quarter: 1
Start Year: 2027

- Phase Duration
Number of Month: 24
Number of Days: 0

2.1.2 Demolition Phase Assumptions

- General Demolition Information
Area of Building to be demolished (ft^2): 1400000
Height of Building to be demolished (ft): 12

- Default Settings Used: Yes

- Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Concrete/Industrial Saws Composite	1	8
Excavators Composite	3	8
Rubber Tired Dozers Composite	2	8
Tractors/Loaders/Backhoes Composite	2	6

- Vehicle Exhaust
Average Hauling Truck Capacity (yd^3): 20 (default)
Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips
Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC

POVs	50.00	50.00	0	0	0	0	0

2.1.3 Demolition Phase Emission Factor(s)

- Construction Exhaust Criteria Pollutant Emission Factors (g/hp-hour) (default)

Concrete/Industrial Saws Composite [HP: 33] [LF: 0.73]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.38980	0.00742	3.42957	4.29108	0.07071	0.06505
Excavators Composite [HP: 36] [LF: 0.38]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.37809	0.00542	3.36699	4.21640	0.08879	0.08169
Rubber Tired Dozers Composite [HP: 367] [LF: 0.4]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.34288	0.00492	3.09108	2.65644	0.13550	0.12466
Tractors/Loaders/Backhoes Composite [HP: 84] [LF: 0.37]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.17717	0.00489	1.80740	3.48712	0.05440	0.05005

- Construction Exhaust Greenhouse Gasses Pollutant Emission Factors (g/hp-hour) (default)

Concrete/Industrial Saws Composite [HP: 33] [LF: 0.73]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02330	0.00466	574.33236	576.30332
Excavators Composite [HP: 36] [LF: 0.38]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02383	0.00477	587.39431	589.41010
Rubber Tired Dozers Composite [HP: 367] [LF: 0.4]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02160	0.00432	532.55942	534.38703
Tractors/Loaders/Backhoes Composite [HP: 84] [LF: 0.37]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02148	0.00430	529.61807	531.43559

- Vehicle Exhaust & Worker Trips Criteria Pollutant Emission Factors (grams/mile)

	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**NH_3**
LDGV	0.30250	0.00278	0.10216	4.37740	0.02381	0.00738	0.04984
LDGT	0.25584	0.00352	0.15087	3.96319	0.02489	0.00829	0.04170
HDGV	0.80268	0.00758	0.53554	9.42531	0.05206	0.02398	0.08830
LDDV	0.11600	0.00133	0.17757	7.08987	0.02608	0.00873	0.01694
LDDT	0.11871	0.00132	0.20883	3.52458	0.02453	0.00897	0.01663
HDDV	0.10536	0.00421	2.35450	1.64049	0.17368	0.08066	0.06684
MC	2.90332	0.00331	0.53638	11.52717	0.03290	0.02177	0.05245

- Vehicle Exhaust & Worker Trips Greenhouse Gasses Emission Factors (grams/mile)

	CH_4	**N_2O**	**CO_2**	**CO_2e**
LDGV	0.01413	0.00493	331.23691	332.93781
LDGT	0.01514	0.00719	419.65142	421.98105
HDGV	0.04771	0.02469	904.41092	912.28839
LDDV	0.04390	0.00074	393.54551	394.96998
LDDT	0.02222	0.00109	393.93490	394.84539
HDDV	0.02015	0.16469	1252.74971	1296.95643
MC	0.10508	0.00322	390.91110	394.70550

2.1.4 Demolition Phase Formula(s)

DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

- Fugitive Dust Emissions per Phase
$PM10_{FD}$ = (0.00042 * BA * BH) / 2000

$PM10_{FD}$: Fugitive Dust PM 10 Emissions (TONs)
0.00042: Emission Factor (lb/ft^3)
BA: Area of Building to be demolished (ft^2)
BH: Height of Building to be demolished (ft)
2000: Conversion Factor pounds to tons

- Construction Exhaust Emissions per Phase
CEE_{POL} = (NE * WD * H * HP * LF * EF_{POL}* 0.002205) / 2000

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
HP: Equipment Horsepower
LF: Equipment Load Factor
EF_{POL}: Emission Factor for Pollutant (g/hp-hour)
0.002205: Conversion Factor grams to pounds
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase
VMT_{VE} = BA * BH * (1 / 27) * 0.25 * (1 / HC) * HT

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
BA: Area of Building being demolish (ft^2)
BH: Height of Building being demolish (ft)
(1 / 27): Conversion Factor cubic feet to cubic yards (1 yd^3 / 27 ft^3)
0.25: Volume reduction factor (material reduced by 75% to account for air space)
HC: Average Hauling Truck Capacity (yd^3)
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Vehicle Exhaust On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase
VMT_{WT} = WD * WT * 1.25 * NE

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000

V_{POL}: Vehicle Emissions (TONs)

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

2.2 Site Grading Phase

2.2.1 Site Grading Phase Timeline Assumptions

- Phase Start Date
Start Month: 1
Start Quarter: 1
Start Year: 2027

- Phase Duration
Number of Month: 12
Number of Days: 0

2.2.2 Site Grading Phase Assumptions

- General Site Grading Information
Area of Site to be Graded (ft^2): 3600000
Amount of Material to be Hauled On-Site (yd^3): 12000
Amount of Material to be Hauled Off-Site (yd^3): 25000

- Site Grading Default Settings
Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Excavators Composite	1	8
Graders Composite	2	8
Other Construction Equipment Composite	2	8
Rollers Composite	1	8
Rubber Tired Dozers Composite	3	8
Scrapers Composite	6	8
Tractors/Loaders/Backhoes Composite	2	8

- Vehicle Exhaust
Average Hauling Truck Capacity (yd^3): 20 (default)
Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips
Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

2.2.3 Site Grading Phase Emission Factor(s)

- Construction Exhaust Criteria Pollutant Emission Factors (g/hp-hour) (default)

Excavators Composite [HP: 36] [LF: 0.38]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.37809	0.00542	3.36699	4.21640	0.08879	0.08169
Graders Composite [HP: 148] [LF: 0.41]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.29535	0.00490	2.28401	3.40565	0.12705	0.11688
Other Construction Equipment Composite [HP: 82] [LF: 0.42]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.25231	0.00487	2.49971	3.48392	0.13245	0.12186
Rollers Composite [HP: 36] [LF: 0.38]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.52865	0.00542	3.57666	4.10537	0.14602	0.13434
Rubber Tired Dozers Composite [HP: 367] [LF: 0.4]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.34288	0.00492	3.09108	2.65644	0.13550	0.12466
Scrapers Composite [HP: 423] [LF: 0.48]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.19058	0.00488	1.60937	1.52212	0.06336	0.05829
Tractors/Loaders/Backhoes Composite [HP: 84] [LF: 0.37]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.17717	0.00489	1.80740	3.48712	0.05440	0.05005

- Construction Exhaust Greenhouse Gasses Pollutant Emission Factors (g/hp-hour) (default)

Excavators Composite [HP: 36] [LF: 0.38]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02383	0.00477	587.39431	589.41010
Graders Composite [HP: 148] [LF: 0.41]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02155	0.00431	531.25291	533.07604
Other Construction Equipment Composite [HP: 82] [LF: 0.42]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02140	0.00428	527.44206	529.25211
Rollers Composite [HP: 36] [LF: 0.38]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02382	0.00476	587.12246	589.13732
Rubber Tired Dozers Composite [HP: 367] [LF: 0.4]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02160	0.00432	532.55942	534.38703
Scrapers Composite [HP: 423] [LF: 0.48]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02145	0.00429	528.70476	530.51914
Tractors/Loaders/Backhoes Composite [HP: 84] [LF: 0.37]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02148	0.00430	529.61807	531.43559

- Vehicle Exhaust & Worker Trips Criteria Pollutant Emission Factors (grams/mile)

	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**NH_3**
LDGV	0.30250	0.00278	0.10216	4.37740	0.02381	0.00738	0.04984
LDGT	0.25584	0.00352	0.15087	3.96319	0.02489	0.00829	0.04170
HDGV	0.80268	0.00758	0.53554	9.42531	0.05206	0.02398	0.08830

LDDV	0.11600	0.00133	0.17757	7.08987	0.02608	0.00873	0.01694
LDDT	0.11871	0.00132	0.20883	3.52458	0.02453	0.00897	0.01663
HDDV	0.10536	0.00421	2.35450	1.64049	0.17368	0.08066	0.06684
MC	2.90332	0.00331	0.53638	11.52717	0.03290	0.02177	0.05245

- Vehicle Exhaust & Worker Trips Greenhouse Gasses Emission Factors (grams/mile)

	CH_4	N_2O	CO_2	CO_2e
LDGV	0.01413	0.00493	331.23691	332.93781
LDGT	0.01514	0.00719	419.65142	421.98105
HDGV	0.04771	0.02469	904.41092	912.28839
LDDV	0.04390	0.00074	393.54551	394.96998
LDDT	0.02222	0.00109	393.93490	394.84539
HDDV	0.02015	0.16469	1252.74971	1296.95643
MC	0.10508	0.00322	390.91110	394.70550

2.2.4 Site Grading Phase Formula(s)

- Fugitive Dust Emissions per Phase

$PM10_{FD} = (20 * ACRE * WD) / 2000$

$PM10_{FD}$: Fugitive Dust PM 10 Emissions (TONs)
20: Conversion Factor Acre Day to pounds (20 lb / 1 Acre Day)
ACRE: Total acres (acres)
WD: Number of Total Work Days (days)
2000: Conversion Factor pounds to tons

- Construction Exhaust Emissions per Phase

$CEE_{POL} = (NE * WD * H * HP * LF * EF_{POL} * 0.002205) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
HP: Equipment Horsepower
LF: Equipment Load Factor
EF_{POL}: Emission Factor for Pollutant (g/hp-hour)
0.002205: Conversion Factor grams to pounds
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase

$VMT_{VE} = (HA_{OnSite} + HA_{OffSite}) * (1 / HC) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
HA_{OnSite}: Amount of Material to be Hauled On-Site (yd^3)
$HA_{OffSite}$: Amount of Material to be Hauled Off-Site (yd^3)
HC: Average Hauling Truck Capacity (yd^3)
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)

VM: Vehicle Exhaust On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase
$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

2.3 Trenching/Excavating Phase

2.3.1 Trenching / Excavating Phase Timeline Assumptions

- Phase Start Date
Start Month: 1
Start Quarter: 1
Start Year: 2027

- Phase Duration
Number of Month: 24
Number of Days: 0

2.3.2 Trenching / Excavating Phase Assumptions

- General Trenching/Excavating Information
Area of Site to be Trenched/Excavated (ft^2): 100000
Amount of Material to be Hauled On-Site (yd^3): 800000
Amount of Material to be Hauled Off-Site (yd^3): 1000

- Trenching Default Settings
Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Excavators Composite	2	8
Other General Industrial Equipmen Composite	1	8
Tractors/Loaders/Backhoes Composite	1	8

- Vehicle Exhaust
Average Hauling Truck Capacity (yd^3): 20 (default)
Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips

Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

2.3.3 Trenching / Excavating Phase Emission Factor(s)

- Construction Exhaust Criteria Pollutant Emission Factors (g/hp-hour) (default)

Excavators Composite [HP: 36] [LF: 0.38]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.37809	0.00542	3.36699	4.21640	0.08879	0.08169
Other General Industrial Equipmen Composite [HP: 35] [LF: 0.34]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.43579	0.00542	3.52468	4.59651	0.09918	0.09125
Tractors/Loaders/Backhoes Composite [HP: 84] [LF: 0.37]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.17717	0.00489	1.80740	3.48712	0.05440	0.05005

- Construction Exhaust Greenhouse Gasses Pollutant Emission Factors (g/hp-hour) (default)

Excavators Composite [HP: 36] [LF: 0.38]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02383	0.00477	587.39431	589.41010
Other General Industrial Equipmen Composite [HP: 35] [LF: 0.34]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02385	0.00477	587.92708	589.94470
Tractors/Loaders/Backhoes Composite [HP: 84] [LF: 0.37]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02148	0.00430	529.61807	531.43559

- Vehicle Exhaust & Worker Trips Criteria Pollutant Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	NH_3
LDGV	0.30250	0.00278	0.10216	4.37740	0.02381	0.00738	0.04984
LDGT	0.25584	0.00352	0.15087	3.96319	0.02489	0.00829	0.04170
HDGV	0.80268	0.00758	0.53554	9.42531	0.05206	0.02398	0.08830
LDDV	0.11600	0.00133	0.17757	7.08987	0.02608	0.00873	0.01694
LDDT	0.11871	0.00132	0.20883	3.52458	0.02453	0.00897	0.01663
HDDV	0.10536	0.00421	2.35450	1.64049	0.17368	0.08066	0.06684
MC	2.90332	0.00331	0.53638	11.52717	0.03290	0.02177	0.05245

- Vehicle Exhaust & Worker Trips Greenhouse Gasses Emission Factors (grams/mile)

	CH_4	N_2O	CO_2	CO_2e
LDGV	0.01413	0.00493	331.23691	332.93781
LDGT	0.01514	0.00719	419.65142	421.98105
HDGV	0.04771	0.02469	904.41092	912.28839
LDDV	0.04390	0.00074	393.54551	394.96998
LDDT	0.02222	0.00109	393.93490	394.84539
HDDV	0.02015	0.16469	1252.74971	1296.95643

MC	0.10508	0.00322	390.91110	394.70550

2.3.4 Trenching / Excavating Phase Formula(s)

- Fugitive Dust Emissions per Phase
$PM10_{FD} = (20 * ACRE * WD) / 2000$

$PM10_{FD}$: Fugitive Dust PM 10 Emissions (TONs)
20: Conversion Factor Acre Day to pounds (20 lb / 1 Acre Day)
ACRE: Total acres (acres)
WD: Number of Total Work Days (days)
2000: Conversion Factor pounds to tons

- Construction Exhaust Emissions per Phase
$CEE_{POL} = (NE * WD * H * HP * LF * EF_{POL} * 0.002205) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
HP: Equipment Horsepower
LF: Equipment Load Factor
EF_{POL}: Emission Factor for Pollutant (g/hp-hour)
0.002205: Conversion Factor grams to pounds
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase
$VMT_{VE} = (HA_{OnSite} + HA_{OffSite}) * (1 / HC) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
HA_{OnSite}: Amount of Material to be Hauled On-Site (yd^3)
$HA_{OffSite}$: Amount of Material to be Hauled Off-Site (yd^3)
HC: Average Hauling Truck Capacity (yd^3)
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Vehicle Exhaust On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase
$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

2.4 Building Construction Phase

2.4.1 Building Construction Phase Timeline Assumptions

- Phase Start Date
Start Month: 1
Start Quarter: 1
Start Year: 2027

- Phase Duration
Number of Month: 24
Number of Days: 0

2.4.2 Building Construction Phase Assumptions

- General Building Construction Information
Building Category: Commercial or Retail
Area of Building (ft^2): 621000
Height of Building (ft): 20
Number of Units: N/A

- Building Construction Default Settings
Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Cranes Composite	1	7
Forklifts Composite	3	8
Generator Sets Composite	1	8
Tractors/Loaders/Backhoes Composite	3	7
Welders Composite	1	8

- Vehicle Exhaust
Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips
Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

- Vendor Trips

Average Vendor Round Trip Commute (mile): 40 (default)

- Vendor Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

2.4.3 Building Construction Phase Emission Factor(s)

- Construction Exhaust Criteria Pollutant Emission Factors (g/hp-hour) (default)

Cranes Composite [HP: 367] [LF: 0.29]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.19464	0.00487	1.74774	1.62852	0.07179	0.06605
Forklifts Composite [HP: 82] [LF: 0.2]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.22849	0.00487	2.15229	3.56761	0.09240	0.08501
Generator Sets Composite [HP: 14] [LF: 0.74]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.53730	0.00793	4.30480	2.85227	0.17170	0.15796
Tractors/Loaders/Backhoes Composite [HP: 84] [LF: 0.37]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.17717	0.00489	1.80740	3.48712	0.05440	0.05005
Welders Composite [HP: 46] [LF: 0.45]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.43501	0.00735	3.46616	4.46084	0.07894	0.07263

- Construction Exhaust Greenhouse Gasses Pollutant Emission Factors (g/hp-hour) (default)

Cranes Composite [HP: 367] [LF: 0.29]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02140	0.00428	527.45492	529.26501
Forklifts Composite [HP: 82] [LF: 0.2]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02138	0.00428	527.06992	528.87869
Generator Sets Composite [HP: 14] [LF: 0.74]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02305	0.00461	568.30624	570.25652
Tractors/Loaders/Backhoes Composite [HP: 84] [LF: 0.37]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02148	0.00430	529.61807	531.43559
Welders Composite [HP: 46] [LF: 0.45]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02305	0.00461	568.29664	570.24689

- Vehicle Exhaust & Worker Trips Criteria Pollutant Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	NH_3
LDGV	0.30250	0.00278	0.10216	4.37740	0.02381	0.00738	0.04984
LDGT	0.25584	0.00352	0.15087	3.96319	0.02489	0.00829	0.04170
HDGV	0.80268	0.00758	0.53554	9.42531	0.05206	0.02398	0.08830
LDDV	0.11600	0.00133	0.17757	7.08987	0.02608	0.00873	0.01694
LDDT	0.11871	0.00132	0.20883	3.52458	0.02453	0.00897	0.01663
HDDV	0.10536	0.00421	2.35450	1.64049	0.17368	0.08066	0.06684
MC	2.90332	0.00331	0.53638	11.52717	0.03290	0.02177	0.05245

- Vehicle Exhaust & Worker Trips Greenhouse Gasses Emission Factors (grams/mile)

	CH_4	N_2O	CO_2	CO_2e
LDGV	0.01413	0.00493	331.23691	332.93781
LDGT	0.01514	0.00719	419.65142	421.98105
HDGV	0.04771	0.02469	904.41092	912.28839
LDDV	0.04390	0.00074	393.54551	394.96998
LDDT	0.02222	0.00109	393.93490	394.84539
HDDV	0.02015	0.16469	1252.74971	1296.95643
MC	0.10508	0.00322	390.91110	394.70550

2.4.4 Building Construction Phase Formula(s)

- Construction Exhaust Emissions per Phase

$CEE_{POL} = (NE * WD * H * HP * LF * EF_{POL} * 0.002205) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
HP: Equipment Horsepower
LF: Equipment Load Factor
EF_{POL}: Emission Factor for Pollutant (g/hp-hour)
0.002205: Conversion Factor grams to pounds
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase

$VMT_{VE} = BA * BH * (0.32 / 1000) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
BA: Area of Building (ft^2)
BH: Height of Building (ft)
(0.32 / 1000): Conversion Factor ft^3 to trips (0.32 trip / 1000 ft^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase

$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Vender Trips Emissions per Phase
$VMT_{VT} = BA * BH * (0.05 / 1000) * HT$

VMT_{VT}: Vender Trips Vehicle Miles Travel (miles)
BA: Area of Building (ft^2)
BH: Height of Building (ft)
(0.05 / 1000): Conversion Factor ft^3 to trips (0.05 trip / 1000 ft^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VT}: Vender Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

2.5 Architectural Coatings Phase

2.5.1 Architectural Coatings Phase Timeline Assumptions

- Phase Start Date
Start Month: 6
Start Quarter: 1
Start Year: 2027

- Phase Duration
Number of Month: 24
Number of Days: 0

2.5.2 Architectural Coatings Phase Assumptions

- General Architectural Coatings Information
Building Category: Non-Residential
Total Square Footage (ft^2): 12000
Number of Units: N/A

- Architectural Coatings Default Settings
Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Worker Trips
Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

2.5.3 Architectural Coatings Phase Emission Factor(s)

- Worker Trips Criteria Pollutant Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	NH_3
LDGV	0.30250	0.00278	0.10216	4.37740	0.02381	0.00738	0.04984
LDGT	0.25584	0.00352	0.15087	3.96319	0.02489	0.00829	0.04170
HDGV	0.80268	0.00758	0.53554	9.42531	0.05206	0.02398	0.08830
LDDV	0.11600	0.00133	0.17757	7.08987	0.02608	0.00873	0.01694
LDDT	0.11871	0.00132	0.20883	3.52458	0.02453	0.00897	0.01663
HDDV	0.10536	0.00421	2.35450	1.64049	0.17368	0.08066	0.06684
MC	2.90332	0.00331	0.53638	11.52717	0.03290	0.02177	0.05245

- Worker Trips Greenhouse Gasses Emission Factors (grams/mile)

	CH_4	N_2O	CO_2	CO_2e
LDGV	0.01413	0.00493	331.23691	332.93781
LDGT	0.01514	0.00719	419.65142	421.98105
HDGV	0.04771	0.02469	904.41092	912.28839
LDDV	0.04390	0.00074	393.54551	394.96998
LDDT	0.02222	0.00109	393.93490	394.84539
HDDV	0.02015	0.16469	1252.74971	1296.95643
MC	0.10508	0.00322	390.91110	394.70550

2.5.4 Architectural Coatings Phase Formula(s)

- Worker Trips Emissions per Phase

$VMT_{WT} = (1 * WT * PA) / 800$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
1: Conversion Factor man days to trips (1 trip / 1 man * day)
WT: Average Worker Round Trip Commute (mile)
PA: Paint Area (ft^2)
800: Conversion Factor square feet to man days (1 ft^2 / 1 man * day)

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Off-Gassing Emissions per Phase

$VOC_{AC} = (AB * 2.0 * 0.0116) / 2000.0$

VOC_{AC}: Architectural Coating VOC Emissions (TONs)
BA: Area of Building (ft^2)
2.0: Conversion Factor total area to coated area (2.0 ft^2 coated area / total area)
0.0116: Emission Factor (lb/ft^2)
2000: Conversion Factor pounds to tons

2.6 Paving Phase

2.6.1 Paving Phase Timeline Assumptions

DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

- Phase Start Date
Start Month: 6
Start Quarter: 1
Start Year: 2027

- Phase Duration
Number of Month: 6
Number of Days: 0

2.6.2 Paving Phase Assumptions

- General Paving Information
Paving Area (ft^2): 325000

- Paving Default Settings
Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Cement and Mortar Mixers Composite	4	6
Pavers Composite	1	8
Paving Equipment Composite	2	6
Rollers Composite	2	6
Tractors/Loaders/Backhoes Composite	1	7

- Vehicle Exhaust
Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips
Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

2.6.3 Paving Phase Emission Factor(s)

- Construction Exhaust Criteria Pollutant Emission Factors (g/hp-hour) (default)

Cement and Mortar Mixers Composite [HP: 10] [LF: 0.56]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.55279	0.00855	4.19775	3.25549	0.16311	0.15007
Pavers Composite [HP: 81] [LF: 0.42]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.22921	0.00486	2.45013	3.43821	0.11941	0.10986
Paving Equipment Composite [HP: 89] [LF: 0.36]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.18341	0.00488	2.01586	3.40316	0.07465	0.06867

Rollers Composite [HP: 36] [LF: 0.38]						
	VOC	SO_x	NO_x	CO	PM 10	PM 2.5
Emission Factors	0.52865	0.00542	3.57666	4.10537	0.14602	0.13434
Tractors/Loaders/Backhoes Composite [HP: 84] [LF: 0.37]						
	VOC	SO_x	NO_x	CO	PM 10	PM 2.5
Emission Factors	0.17717	0.00489	1.80740	3.48712	0.05440	0.05005

- Construction Exhaust Greenhouse Gasses Pollutant Emission Factors (g/hp-hour) (default)

Cement and Mortar Mixers Composite [HP: 10] [LF: 0.56]				
	CH_4	N_2O	CO_2	CO_2e
Emission Factors	0.02313	0.00463	570.32048	572.27767
Pavers Composite [HP: 81] [LF: 0.42]				
	CH_4	N_2O	CO_2	CO_2e
Emission Factors	0.02133	0.00427	525.80912	527.61356
Paving Equipment Composite [HP: 89] [LF: 0.36]				
	CH_4	N_2O	CO_2	CO_2e
Emission Factors	0.02142	0.00428	528.06776	529.87995
Rollers Composite [HP: 36] [LF: 0.38]				
	CH_4	N_2O	CO_2	CO_2e
Emission Factors	0.02382	0.00476	587.12246	589.13732
Tractors/Loaders/Backhoes Composite [HP: 84] [LF: 0.37]				
	CH_4	N_2O	CO_2	CO_2e
Emission Factors	0.02148	0.00430	529.61807	531.43559

- Vehicle Exhaust & Worker Trips Criteria Pollutant Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	NH_3
LDGV	0.30250	0.00278	0.10216	4.37740	0.02381	0.00738	0.04984
LDGT	0.25584	0.00352	0.15087	3.96319	0.02489	0.00829	0.04170
HDGV	0.80268	0.00758	0.53554	9.42531	0.05206	0.02398	0.08830
LDDV	0.11600	0.00133	0.17757	7.08987	0.02608	0.00873	0.01694
LDDT	0.11871	0.00132	0.20883	3.52458	0.02453	0.00897	0.01663
HDDV	0.10536	0.00421	2.35450	1.64049	0.17368	0.08066	0.06684
MC	2.90332	0.00331	0.53638	11.52717	0.03290	0.02177	0.05245

- Vehicle Exhaust & Worker Trips Greenhouse Gasses Emission Factors (grams/mile)

	CH_4	N_2O	CO_2	CO_2e
LDGV	0.01413	0.00493	331.23691	332.93781
LDGT	0.01514	0.00719	419.65142	421.98105
HDGV	0.04771	0.02469	904.41092	912.28839
LDDV	0.04390	0.00074	393.54551	394.96998
LDDT	0.02222	0.00109	393.93490	394.84539
HDDV	0.02015	0.16469	1252.74971	1296.95643
MC	0.10508	0.00322	390.91110	394.70550

2.6.4 Paving Phase Formula(s)

- Construction Exhaust Emissions per Phase

$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

- Construction Exhaust Emissions per Phase

$CEE_{POL} = (NE * WD * H * HP * LF * EF_{POL} * 0.002205) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment

WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
HP: Equipment Horsepower
LF: Equipment Load Factor
EF_{POL}: Emission Factor for Pollutant (g/hp-hour)
0.002205: Conversion Factor grams to pounds
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase

$VMT_{VE} = PA * 0.25 * (1 / 27) * (1 / HC) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
PA: Paving Area (ft^2)
0.25: Thickness of Paving Area (ft)
(1 / 27): Conversion Factor cubic feet to cubic yards (1 yd^3 / 27 ft^3)
HC: Average Hauling Truck Capacity (yd^3)
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Vehicle Exhaust On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase

$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Off-Gassing Emissions per Phase

$VOC_P = (2.62 * PA) / 43560 / 2000$

VOC_P: Paving VOC Emissions (TONs)
2.62: Emission Factor (lb/acre)
PA: Paving Area (ft^2)
43560: Conversion Factor square feet to acre (43560 ft2 / $acre)^2$ / acre)
2000: Conversion Factor square pounds to TONs (2000 lb / TON)

DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

3. Emergency Generator

3.1 General Information & Timeline Assumptions

- Add or Remove Activity from Baseline? Add

- Activity Location
County: Hillsborough
Regulatory Area(s): NOT IN A REGULATORY AREA

- Activity Title: Pump Engine

- Activity Description:
800 aux engine to drive pump

- Activity Start Date
Start Month: 1
Start Year: 2030

- Activity End Date
Indefinite: Yes
End Month: N/A
End Year: N/A

- Activity Emissions of Criteria Pollutants:

Pollutant	Emissions Per Year (TONs)
VOC	0.034368
SO_x	0.000600
NO_x	1.243200
CO	0.330240

Pollutant	Emissions Per Year (TONs)
PM 10	0.038832
PM 2.5	0.038832
Pb	0.000000
NH_3	0.000000

- Global Scale Activity Emissions of Greenhouse Gasses:

Pollutant	Emissions Per Year (TONs)
CH_4	0.002222
N_2O	0.000444

Pollutant	Emissions Per Year (TONs)
CO_2	55.200000
CO_2e	63.840000

3.2 Emergency Generator Assumptions

- Emergency Generator
Type of Fuel used in Emergency Generator: Diesel
Number of Emergency Generators: 4

- Default Settings Used: No

- Emergency Generators Consumption
Emergency Generator's Horsepower: 800
Average Operating Hours Per Year (hours): 30

3.3 Emergency Generator Emission Factor(s)

- Emergency Generators Criteria Pollutant Emission Factor (lb/hp-hr)

VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3
0.000716	0.0000125	0.0259	0.00688	0.000809	0.000809		

- Emergency Generators Greenhouse Gasses Pollutant Emission Factor (lb/hp-hr)

CH_4	N_2O	CO_2	CO_2e
0.000046297	0.000009259	1.15	1.33

3.4 Emergency Generator Formula(s)

- Emergency Generator Emissions per Year

AE_{POL}= (NGEN * HP * OT * EF_{POL}) / 2000

AE_{POL}: Activity Emissions (TONs per Year)
NGEN: Number of Emergency Generators
HP: Emergency Generator's Horsepower (hp)
OT: Average Operating Hours Per Year (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hp-hr)

4. Emergency Generator

4.1 General Information & Timeline Assumptions

- Add or Remove Activity from Baseline? Add

- Activity Location
County: Hillsborough
Regulatory Area(s): NOT IN A REGULATORY AREA

- Activity Title: Aux Engine

- Activity Description:
500 hp Pump Engine

- Activity Start Date
Start Month: 1
Start Year: 2030

- Activity End Date
Indefinite: Yes
End Month: N/A
End Year: N/A

- Activity Emissions of Criteria Pollutants:

Pollutant	Emissions Per Year (TONs)
VOC	0.104625
SO_x	0.088125
NO_x	0.431250
CO	0.288000

Pollutant	Emissions Per Year (TONs)
PM 10	0.094125
PM 2.5	0.094125
Pb	0.000000
NH_3	0.000000

- Global Scale Activity Emissions of Greenhouse Gasses:

Pollutant	Emissions Per Year (TONs)
CH_4	0.001736
N_2O	0.000347

Pollutant	Emissions Per Year (TONs)
CO_2	43.125000
CO_2e	49.875000

4.2 Emergency Generator Assumptions

DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

- Emergency Generator
Type of Fuel used in Emergency Generator: Diesel
Number of Emergency Generators: 5

- Default Settings Used: No

- Emergency Generators Consumption
Emergency Generator's Horsepower: 500
Average Operating Hours Per Year (hours): 30

4.3 Emergency Generator Emission Factor(s)

- Emergency Generators Criteria Pollutant Emission Factor (lb/hp-hr)

VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3
0.00279	0.00235	0.0115	0.00768	0.00251	0.00251		

- Emergency Generators Greenhouse Gasses Pollutant Emission Factor (lb/hp-hr)

CH_4	N_2O	CO_2	CO_2e
0.000046297	0.000009259	1.15	1.33

4.4 Emergency Generator Formula(s)

- Emergency Generator Emissions per Year
$AE_{POL} = (NGEN * HP * OT * EF_{POL}) / 2000$

AE_{POL}: Activity Emissions (TONs per Year)
NGEN: Number of Emergency Generators
HP: Emergency Generator's Horsepower (hp)
OT: Average Operating Hours Per Year (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hp-hr)

5. Emergency Generator

5.1 General Information & Timeline Assumptions

- Add or Remove Activity from Baseline? Add

- Activity Location
County: Hillsborough
Regulatory Area(s): NOT IN A REGULATORY AREA

- Activity Title: 300 HP

- Activity Description:
3 Pumping Units

- Activity Start Date
Start Month: 1
Start Year: 2030

- Activity End Date
Indefinite: Yes

DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

End Month: N/A
End Year: N/A

- Activity Emissions of Criteria Pollutants:

Pollutant	Emissions Per Year (TONs)
VOC	0.025110
SO_x	0.021150
NO_x	0.103500
CO	0.069120

Pollutant	Emissions Per Year (TONs)
PM 10	0.022590
PM 2.5	0.022590
Pb	0.000000
NH_3	0.000000

- Global Scale Activity Emissions of Greenhouse Gasses:

Pollutant	Emissions Per Year (TONs)
CH_4	0.000417
N_2O	0.000083

Pollutant	Emissions Per Year (TONs)
CO_2	10.350000
CO_2e	11.970000

5.2 Emergency Generator Assumptions

- Emergency Generator
Type of Fuel used in Emergency Generator: Diesel
Number of Emergency Generators: 2

- Default Settings Used: No

- Emergency Generators Consumption
Emergency Generator's Horsepower: 300
Average Operating Hours Per Year (hours): 30

5.3 Emergency Generator Emission Factor(s)

- Emergency Generators Criteria Pollutant Emission Factor (lb/hp-hr)

VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3
0.00279	0.00235	0.0115	0.00768	0.00251	0.00251		

- Emergency Generators Greenhouse Gasses Pollutant Emission Factor (lb/hp-hr)

CH_4	N_2O	CO_2	CO_2e
0.000046297	0.000009259	1.15	1.33

5.4 Emergency Generator Formula(s)

- Emergency Generator Emissions per Year
$AE_{POL} = (NGEN * HP * OT * EF_{POL}) / 2000$

AE_{POL}: Activity Emissions (TONs per Year)
NGEN: Number of Emergency Generators
HP: Emergency Generator's Horsepower (hp)
OT: Average Operating Hours Per Year (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hp-hr)

6. Emergency Generator

6.1 General Information & Timeline Assumptions

- Add or Remove Activity from Baseline? Add

DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

- Activity Location
County: Hillsborough
Regulatory Area(s): NOT IN A REGULATORY AREA

- Activity Title: Emergency Generator

- Activity Description:
Emergency Generator
(480V Standby Emergency Generators (Diesel Engine Driven)

- Activity Start Date
Start Month: 1
Start Year: 2030

- Activity End Date
Indefinite: Yes
End Month: N/A
End Year: N/A

- Activity Emissions of Criteria Pollutants:

Pollutant	Emissions Per Year (TONs)
VOC	0.050220
SO_x	0.042300
NO_x	0.207000
CO	0.138240

Pollutant	Emissions Per Year (TONs)
PM 10	0.045180
PM 2.5	0.045180
Pb	0.000000
NH_3	0.000000

- Global Scale Activity Emissions of Greenhouse Gasses:

Pollutant	Emissions Per Year (TONs)
CH_4	0.000833
N_2O	0.000167

Pollutant	Emissions Per Year (TONs)
CO_2	20.700000
CO_2e	23.940000

6.2 Emergency Generator Assumptions

- Emergency Generator
Type of Fuel used in Emergency Generator: Diesel
Number of Emergency Generators: 6

- Default Settings Used: No

- Emergency Generators Consumption
Emergency Generator's Horsepower: 200
Average Operating Hours Per Year (hours): 30

6.3 Emergency Generator Emission Factor(s)

- Emergency Generators Criteria Pollutant Emission Factor (lb/hp-hr)

VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3
0.00279	0.00235	0.0115	0.00768	0.00251	0.00251		

- Emergency Generators Greenhouse Gasses Pollutant Emission Factor (lb/hp-hr)

CH_4	N_2O	CO_2	CO_2e
0.000046297	0.000009259	1.15	1.33

6.4 Emergency Generator Formula(s)

- Emergency Generator Emissions per Year

AE_{POL}= (NGEN * HP * OT * EF_{POL}) / 2000

AE_{POL}: Activity Emissions (TONs per Year)
NGEN: Number of Emergency Generators
HP: Emergency Generator's Horsepower (hp)
OT: Average Operating Hours Per Year (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hp-hr)

7. Emergency Generator

7.1 General Information & Timeline Assumptions

- Add or Remove Activity from Baseline? Remove

- Activity Location
County: Hillsborough
Regulatory Area(s): NOT IN A REGULATORY AREA

- Activity Title: S-13 Removal of Diesel Primary

- Activity Description:
S-13 Removal of Diesel Primary

- Activity Start Date
Start Month: 1
Start Year: 2030

- Activity End Date
Indefinite: Yes
End Month: N/A
End Year: N/A

- Activity Emissions of Criteria Pollutants:

Pollutant	Emissions Per Year (TONs)
VOC	-1.116000
SO_x	-0.940000
NO_x	-4.600000
CO	-3.072000

Pollutant	Emissions Per Year (TONs)
PM 10	-1.004000
PM 2.5	-1.004000
Pb	0.000000
NH_3	0.000000

- Global Scale Activity Emissions of Greenhouse Gasses:

Pollutant	Emissions Per Year (TONs)
CH_4	-0.018519
N_2O	-0.003704

Pollutant	Emissions Per Year (TONs)
CO_2	-460.000000
CO_2e	-532.000000

7.2 Emergency Generator Assumptions

- Emergency Generator
Type of Fuel used in Emergency Generator: Diesel
Number of Emergency Generators: 4

- Default Settings Used: No

- Emergency Generators Consumption
Emergency Generator's Horsepower: 200
Average Operating Hours Per Year (hours): 1000

7.3 Emergency Generator Emission Factor(s)

- Emergency Generators Criteria Pollutant Emission Factor (lb/hp-hr)

VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3
0.00279	0.00235	0.0115	0.00768	0.00251	0.00251		

- Emergency Generators Greenhouse Gasses Pollutant Emission Factor (lb/hp-hr)

CH_4	N_2O	CO_2	CO_2e
0.000046297	0.000009259	1.15	1.33

7.4 Emergency Generator Formula(s)

- Emergency Generator Emissions per Year
$AE_{POL} = (NGEN * HP * OT * EF_{POL}) / 2000$

AE_{POL}: Activity Emissions (TONs per Year)
NGEN: Number of Emergency Generators
HP: Emergency Generator's Horsepower (hp)
OT: Average Operating Hours Per Year (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hp-hr)

8. Emergency Generator

8.1 General Information & Timeline Assumptions

- Add or Remove Activity from Baseline? Add

- Activity Location
County: Hillsborough
Regulatory Area(s): NOT IN A REGULATORY AREA

- Activity Title: Dewatering

- Activity Description:
Pump for dewatering

- Activity Start Date
Start Month: 1
Start Year: 2027

- Activity End Date
Indefinite: No
End Month: 12
End Year: 2028

- Activity Emissions of Criteria Pollutants:

Pollutant	Total Emissions (TONs)

Pollutant	Total Emissions (TONs)

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VOC	0.334800
SO_x	0.282000
NO_x	1.380000
CO	0.921600

PM 10	0.301200
PM 2.5	0.301200
Pb	0.000000
NH_3	0.000000

- Global Scale Activity Emissions of Greenhouse Gasses:

Pollutant	Total Emissions (TONs)
CH_4	0.005556
N_2O	0.001111

Pollutant	Total Emissions (TONs)
CO_2	138.000000
CO_2e	159.600000

8.2 Emergency Generator Assumptions

- Emergency Generator
Type of Fuel used in Emergency Generator: Diesel
Number of Emergency Generators: 2

- Default Settings Used: No

- Emergency Generators Consumption
Emergency Generator's Horsepower: 60
Average Operating Hours Per Year (hours): 1000

8.3 Emergency Generator Emission Factor(s)

- Emergency Generators Criteria Pollutant Emission Factor (lb/hp-hr)

VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3
0.00279	0.00235	0.0115	0.00768	0.00251	0.00251		

- Emergency Generators Greenhouse Gasses Pollutant Emission Factor (lb/hp-hr)

CH_4	N_2O	CO_2	CO_2e
0.000046297	0.000009259	1.15	1.33

8.4 Emergency Generator Formula(s)

- Emergency Generator Emissions per Year
$AE_{POL} = (NGEN * HP * OT * EF_{POL}) / 2000$

AE_{POL}: Activity Emissions (TONs per Year)
NGEN: Number of Emergency Generators
HP: Emergency Generator's Horsepower (hp)
OT: Average Operating Hours Per Year (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hp-hr)

AIR CONFORMITY APPLICABILITY MODEL REPORT
GREENHOUSE GAS (GHG) EMISSIONS

1. General Information: The Air Force's Air Conformity Applicability Model (ACAM) was used to perform a net change in emissions analysis to estimate GHG emissions associated with the action. The analysis was performed in accordance with the Air Force Manual 32-7002, *Environmental Compliance and Pollution Prevention*; the *Environmental Impact Analysis Process* (EIAP, 32 CFR 989); and the *USAF Air Quality Environmental Impact Analysis Process (EIAP) Guide*. This report provides a summary of the GHG emissions analysis.

Report generated with ACAM version: 5.0.24a

a. Action Location:
State: Florida
Regulatory Area(s): NOT IN A REGULATORY AREA

b. Action Title: Section 203 Study Area

c. Project Number/s (if applicable): Upgrade of Sturctures

d. Projected Action Start Date: 1 / 2027

e. Action Description:

The project Section 203 sStudy Aarea (Study Area), also referred to as boundaries are derived from the respective watersheds and contiguous urban areas associated with Reach A in the C&SF Section 216 Flood Resiliency Study, spans approximately 420 square miles where hydrologic, hydraulic, and hydrodynamic modeling have demonstrated highly vulnerable infrastructure in the C&SF system within eastern Broward County and a small portion of southern Palm Beach County. The Section 203 Study Area includes nine upstream and six downstream watershed basins, interconnected by a network of seven primary canals managed by nine water control structures (WCS), seven of which are coastal structures, in addition to other existing water control structures not directly relevant in this Section 203 Study.The Alternative A encompasses a broad range of site development and infrastructure activities across multiple zones, notably S13, S33, S37A, S36, G56, G57 and G54 areas. Key tasks include the removal of approximately 8,600 cubic yards of soil and 445 cubic yards of trees, with land disturbance totaling over 814,000 square feet. Demolition operations, particularly of coffer dams and associated structures, account for a significant area of 400,600 square feet. New construction, including gated buildings, will occupy approximately 621,000 square feet. Site preparation includes substantial topsoil stripping (126,000 ft²), dewatering estimated at 10 million gallons, and installation of 8,800 ft² of sheet piling for excavation support. Erosion control will be managed by installing 25,000 cubic yards of riprap. Structural stability will be achieved through 11,600 cubic yards of engineered backfill. Additionally, 105,000 square feet of asphalt will be removed to facilitate access, staging, and system integration across the project footprint.Alternative B entails a significantly expanded scope of work involving comprehensive site development and construction activities across nine locations (S13, S33, S37A, S36, S37B, G57, G56, and G54). Approximately 15,600 cubic yards of soil will be removed, with land disturbance encompassing 1,353,000 square feet, reflecting extensive ground impact. Demolition of coffer dams and associated structures spans a substantial 1,074,000 square feet, while new gated construction efforts will cover 1,535,000 square feet. Dewatering requirements, projected at 22.5 million gallons, account for deep excavation in canal and structural zones. Erosion control will be managed through the installation of 85,000 cubic yards of riprap, while 19,000 cubic yards of engineered structural backfill will be used to stabilize newly constructed pump station areas.

Additional site preparation includes tree removal totaling 845 cubic yards, topsoil stripping across 144,000 square feet, and asphalt pavement removal totaling 87,000 square feet for improved construction access. The coffer dam construction footprint expands significantly under this alternative, reaching 744,000 square feet. Overall, Alternative B represents a more intensive approach than the base case, involving greater volumes of material handling, broader site disruption, and larger structural developments to support the proposed infrastructure objectives.

AIR CONFORMITY APPLICABILITY MODEL REPORT
GREENHOUSE GAS (GHG) EMISSIONS

f. Point of Contact:

Name: Dewey Cooper
Title: Civ
Organization: Tetra Tech
Email:
Phone Number:

2. Analysis: Total combined direct and indirect GHG emissions associated with the action were estimated through ACAM on a calendar-year basis from the action's start through the action's "steady state" (SS, net gain/loss in emission stabilized and the action is fully implemented) of emissions.

GHG Emissions Analysis Summary:

GHGs produced by fossil-fuel combustion are primarily carbon dioxide (CO2), methane (CH4), and nitrous oxide (N2O). These three GHGs represent more than 97 percent of all U.S. GHG emissions. Emissions of GHGs are typically quantified and regulated in units of CO2 equivalents (CO2e). The CO2e takes into account the global warming potential (GWP) of each GHG. The GWP is the measure of a particular GHG's ability to absorb solar radiation as well as its residence time within the atmosphere. The GWP allows comparison of global warming impacts between different gases; the higher the GWP, the more that gas contributes to climate change in comparison to CO2. All GHG emissions estimates were derived from various emission sources using the methods, algorithms, emission factors, and GWPs from the most current Air Emissions Guide for Air Force Stationary Sources, Air Emissions Guide for Air Force Mobile Sources, and/or Air Emissions Guide for Air Force Transitory Sources.

The Air Force has adopted the Prevention of Significant Deterioration (PSD) threshold for GHG of 75,000 ton per year (ton/yr) of CO2e (or 68,039 metric ton per year, mton/yr) as an indicator or "threshold of insignificance" for NEPA air quality impacts in all areas. This indicator does not define a significant impact; however, it provides a threshold to identify actions that are insignificant (de minimis, too trivial or minor to merit consideration). Actions with a net change in GHG (CO2e) emissions below the insignificance indicator (threshold) are considered too insignificant on a global scale to warrant any further analysis. Note that actions with a net change in GHG (CO2e) emissions above the insignificance indicator (threshold) are only considered potentially significant and require further assessment to determine if the action poses a significant impact. For further detail on insignificance indicators see Level II, Air Quality Quantitative Assessment, Insignificance Indicators (April 2023).

The following table summarizes the action-related GHG emissions on a calendar-year basis through the projected steady state of the action.

Action-Related Annual GHG Emissions (mton/yr)						
YEAR	**CO2**	**CH4**	**N2O**	**CO2e**	**Threshold**	**Exceedance**
2027	3,917	0.14140515	0.1198262	3,962	68,039	No
2028	1,591	0.04836676	0.09434088	1,627	68,039	No
2029	0	0	0	0	68,039	No
2030	-300	-0.01207498	-0.00241489	-347	68,039	No
2031 [SS Year]	-300	-0.01207498	-0.00241489	-347	68,039	No

The following U.S. and State's GHG emissions estimates (next two tables) are based on a five-year average (2016 through 2020) of individual state-reported GHG emissions (Reference: State Climate Summaries 2022, NOAA National Centers for Environmental Information, National Oceanic and Atmospheric Administration. https://statesummaries.ncics.org/downloads/).

State's Annual GHG Emissions (mton/yr)				
YEAR	**CO2**	**CH4**	**N2O**	**CO2e**

AIR CONFORMITY APPLICABILITY MODEL REPORT
GREENHOUSE GAS (GHG) EMISSIONS

2027	227,404,647	552,428	58,049	258,255,572
2028	227,404,647	552,428	58,049	258,255,572
2029	227,404,647	552,428	58,049	258,255,572
2030	227,404,647	552,428	58,049	258,255,572
2031 [SS Year]	227,404,647	552,428	58,049	258,255,572

U.S. Annual GHG Emissions (mton/yr)				
YEAR	**CO2**	**CH4**	**N2O**	**CO2e**
2027	5,136,454,179	25,626,912	1,500,708	6,251,695,230
2028	5,136,454,179	25,626,912	1,500,708	6,251,695,230
2029	5,136,454,179	25,626,912	1,500,708	6,251,695,230
2030	5,136,454,179	25,626,912	1,500,708	6,251,695,230
2031 [SS Year]	5,136,454,179	25,626,912	1,500,708	6,251,695,230

GHG Relative Significance Assessment:

A Relative Significance Assessment uses the rule of reason and the concept of proportionality along with the consideration of the affected area (Rtba.e., global, national, and regional) and the degree (intensity) of the proposed action's effects. The Relative Significance Assessment provides real-world context and allows for a reasoned choice against alternatives through a relative comparison analysis. The analysis weighs each alternative's annual net change in GHG emissions proportionally against (or relative to) global, national, and regional emissions.

The action's surroundings, circumstances, environment, and background (context associated with an action) provide the setting for evaluating the GHG intensity (impact significance). From an air quality perspective, context of an action is the local area's ambient air quality relative to meeting the NAAQSs, expressed as attainment, nonattainment, or maintenance areas (this designation is considered the attainment status). GHGs are non-hazardous to health at normal ambient concentrations and, at a cumulative global scale, action-related GHG emissions can only potentially cause warming of the climatic system. Therefore, the action-related GHGs generally have an insignificant impact to local air quality.

However, the affected area (context) of GHG/climate change is global. Therefore, the intensity or degree of the proposed action's GHG/climate change effects are gauged through the quantity of GHG associated with the action as compared to a baseline of the state, U.S., and global GHG inventories. Each action (or alternative) has significance, based on their annual net change in GHG emissions, in relation to or proportionally to the global, national, and regional annual GHG emissions.

To provide real-world context to the GHG and climate change effects on a global scale, an action's net change in GHG emissions is compared relative to the state (where the action will occur) and U.S. annual emissions. The following table provides a relative comparison of an action's net change in GHG emissions vs. state and U.S. projected GHG emissions for the same time period.

Total GHG Relative Significance (mton)					
		CO2	**CH4**	**N2O**	**CO2e**
2027-2031	State Total	1,137,023,235	2,762,139	290,244	1,291,277,861
2027-2031	U.S. Total	25,682,270,895	128,134,558	7,503,538	31,258,476,148
2027-2031	Action	4,908	0.165622	0.209337	4,896
Percent of State Totals		0.00043169%	0.00000600%	0.00007212%	0.00037914%
Percent of U.S. Totals		0.00001911%	0.00000013%	0.00000279%	0.00001566%

From a global context, the action's total GHG percentage of total global GHG for the same time period is: 0.00000210%.*

AIR CONFORMITY APPLICABILITY MODEL REPORT
GREENHOUSE GAS (GHG) EMISSIONS

***** Global value based on the U.S. emitting 13.4% of all global GHG annual emissions (2018 Emissions Data, Center for Climate and Energy Solutions, accessed 7-6-2023, https://www.c2es.org/content/international-emissions).

AIR CONFORMITY APPLICABILITY MODEL REPORT
RECORD OF AIR ANALYSIS (ROAA)

1. General Information: The Air Force's Air Conformity Applicability Model (ACAM) was used to perform a net change in emissions analysis to assess the potential air quality impact/s associated with the action. The analysis was performed in accordance with the Air Force Manual 32-7002, *Environmental Compliance and Pollution Prevention*; the *Environmental Impact Analysis Process* (EIAP, 32 CFR 989); the *General Conformity Rule* (GCR, 40 CFR 93 Subpart B); and the *USAF Air Quality Environmental Impact Analysis Process (EIAP) Guide*. This report provides a summary of the ACAM analysis.

Report generated with ACAM version: 5.0.24a

a. Action Location:
State: Florida
Regulatory Area(s): NOT IN A REGULATORY AREA

b. Action Title: Section 203 Study Area

c. Project Number/s (if applicable): Upgrade of Sturctures

d. Projected Action Start Date: 1 / 2027

e. Action Description:

The project Section 203 sStudy Aarea (Study Area), also referred to as boundaries are derived from the respective watersheds and contiguous urban areas associated with Reach A in the C&SF Section 216 Flood Resiliency Study, spans approximately 420 square miles where hydrologic, hydraulic, and hydrodynamic modeling have demonstrated highly vulnerable infrastructure in the C&SF system within eastern Broward County and a small portion of southern Palm Beach County. The Section 203 Study Area includes nine upstream and six downstream watershed basins, interconnected by a network of seven primary canals managed by nine water control structures (WCS), seven of which are coastal structures, in addition to other existing water control structures not directly relevant in this Section 203 Study.The Alternative A encompasses a broad range of site development and infrastructure activities across multiple zones, notably S13, S33, S37A, S36, G56, G57 and G54 areas. Key tasks include the removal of approximately 8,600 cubic yards of soil and 445 cubic yards of trees, with land disturbance totaling over 814,000 square feet. Demolition operations, particularly of coffer dams and associated structures, account for a significant area of 400,600 square feet. New construction, including gated buildings, will occupy approximately 621,000 square feet. Site preparation includes substantial topsoil stripping (126,000 ft²), dewatering estimated at 10 million gallons, and installation of 8,800 ft² of sheet piling for excavation support. Erosion control will be managed by installing 25,000 cubic yards of riprap. Structural stability will be achieved through 11,600 cubic yards of engineered backfill. Additionally, 105,000 square feet of asphalt will be removed to facilitate access, staging, and system integration across the project footprint.Alternative B entails a significantly expanded scope of work involving comprehensive site development and construction activities across nine locations (S13, S33, S37A, S36, S37B, G57, G56, and G54). Approximately 15,600 cubic yards of soil will be removed, with land disturbance encompassing 1,353,000 square feet, reflecting extensive ground impact. Demolition of coffer dams and associated structures spans a substantial 1,074,000 square feet, while new gated construction efforts will cover 1,535,000 square feet. Dewatering requirements, projected at 22.5 million gallons, account for deep excavation in canal and structural zones. Erosion control will be managed through the installation of 85,000 cubic yards of riprap, while 19,000 cubic yards of engineered structural backfill will be used to stabilize newly constructed pump station areas.

Additional site preparation includes tree removal totaling 845 cubic yards, topsoil stripping across 144,000 square feet, and asphalt pavement removal totaling 87,000 square feet for improved construction access. The coffer dam construction footprint expands significantly under this alternative, reaching 744,000 square feet. Overall, Alternative B represents a more intensive approach than the base case, involving greater volumes of material handling, broader site disruption, and larger structural developments to support the proposed infrastructure objectives.

AIR CONFORMITY APPLICABILITY MODEL REPORT
RECORD OF AIR ANALYSIS (ROAA)

f. Point of Contact:
Name: Dewey Cooper
Title: Civ
Organization: Tetra Tech
Email:
Phone Number:

2. Air Impact Analysis: Based on the attainment status at the action location, the requirements of the GCR are:

____ applicable
_X_ not applicable

Total reasonably foreseeable net direct and indirect emissions associated with the action were estimated through ACAM on a calendar-year basis for the start of the action through achieving "steady state" (cCba.e., no net gain/loss in emission stabilized and the action is fully implemented) emissions. The ACAM analysis uses the latest and most accurate emission estimation techniques available; all algorithms, emission factors, and methodologies used are described in detail in the *USAF Air Emissions Guide for Air Force Stationary Sources*, the *USAF Air Emissions Guide for Air Force Mobile Sources*, and the *USAF Air Emissions Guide for Air Force Transitory Sources*.

"Insignificance Indicators" were used in the analysis to provide an indication of the significance of the proposed Action's potential impacts to local air quality. The insignificance indicators are trivial (de minimis) rate thresholds that have been demonstrated to have little to no impact to air quality. These insignificance indicators are the 250 ton/yr Prevention of Significant Deterioration (PSD) major source threshold and 25 ton/yr for lead for actions occurring in areas that are "Attainment" (cCba.e., not exceeding any National Ambient Air Quality Standard (NAAQS)). These indicators do not define a significant impact; however, they do provide a threshold to identify actions that are insignificant. Any action with net emissions below the insignificance indicators for all criteria pollutants is considered so insignificant that the action will not cause or contribute to an exceedance on one or more NAAQS. For further detail on insignificance indicators, refer to *Level II, Air Quality Quantitative Assessment, Insignificance Indicators*.

The action's net emissions for every year through achieving steady state were compared against the Insignificance Indicators and are summarized below.

Analysis Summary:

2027

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	2.485	250	No
NOx	9.894	250	No
CO	11.426	250	No
SOx	0.022	250	No
PM 10	164.659	250	No
PM 2.5	0.360	250	No
Pb	0.000	25	No
NH3	0.044	250	No

2028 - (Steady State)

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR

AIR CONFORMITY APPLICABILITY MODEL REPORT
RECORD OF AIR ANALYSIS (ROAA)

		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.000	250	No
NOx	0.000	250	No
CO	0.000	250	No
SOx	0.000	250	No
PM 10	0.000	250	No
PM 2.5	0.000	250	No
Pb	0.000	25	No
NH3	0.000	250	No

None of the estimated annual net emissions associated with this action are above the insignificance indicators; therefore, the action will not cause or contribute to an exceedance of one or more NAAQSs and will have an insignificant impact on air quality. No further air assessment is needed.

Dewey Cooper, Civ — Sep 18 2025

Name, Title — **Date**

AIR CONFORMITY APPLICABILITY MODEL REPORT
RECORD OF AIR ANALYSIS (ROAA)

1. General Information: The Air Force's Air Conformity Applicability Model (ACAM) was used to perform a net change in emissions analysis to assess the potential air quality impact/s associated with the action. The analysis was performed in accordance with the Air Force Manual 32-7002, *Environmental Compliance and Pollution Prevention*; the *Environmental Impact Analysis Process* (EIAP, 32 CFR 989); the *General Conformity Rule* (GCR, 40 CFR 93 Subpart B); and the *USAF Air Quality Environmental Impact Analysis Process (EIAP) Guide*. This report provides a summary of the ACAM analysis.

Report generated with ACAM version: 5.0.24a

a. Action Location:

State: Florida
Regulatory Area(s): NOT IN A REGULATORY AREA

b. Action Title: Section 203 Study Area

c. Project Number/s (if applicable): Upgrade of Sturctures

d. Projected Action Start Date: 1 / 2027

e. Action Description:

The project Section 203 sStudy Aarea (Study Area), also referred to as boundaries are derived from the respective watersheds and contiguous urban areas associated with Reach A in the C&SF Section 216 Flood Resiliency Study, spans approximately 420 square miles where hydrologic, hydraulic, and hydrodynamic modeling have demonstrated highly vulnerable infrastructure in the C&SF system within eastern Broward County and a small portion of southern Palm Beach County. The Section 203 Study Area includes nine upstream and six downstream watershed basins, interconnected by a network of seven primary canals managed by nine water control structures (WCS), seven of which are coastal structures, in addition to other existing water control structures not directly relevant in this Section 203 Study.The Alternative A encompasses a broad range of site development and infrastructure activities across multiple zones, notably S13, S33, S37A, S36, G56, G57 and G54 areas. Key tasks include the removal of approximately 8,600 cubic yards of soil and 445 cubic yards of trees, with land disturbance totaling over 814,000 square feet. Demolition operations, particularly of coffer dams and associated structures, account for a significant area of 400,600 square feet. New construction, including gated buildings, will occupy approximately 621,000 square feet. Site preparation includes substantial topsoil stripping (126,000 ft²), dewatering estimated at 10 million gallons, and installation of 8,800 ft² of sheet piling for excavation support. Erosion control will be managed by installing 25,000 cubic yards of riprap. Structural stability will be achieved through 11,600 cubic yards of engineered backfill. Additionally, 105,000 square feet of asphalt will be removed to facilitate access, staging, and system integration across the project footprint.Alternative B entails a significantly expanded scope of work involving comprehensive site development and construction activities across nine locations (S13, S33, S37A, S36, S37B, G57, G56, and G54). Approximately 15,600 cubic yards of soil will be removed, with land disturbance encompassing 1,353,000 square feet, reflecting extensive ground impact. Demolition of coffer dams and associated structures spans a substantial 1,074,000 square feet, while new gated construction efforts will cover 1,535,000 square feet. Dewatering requirements, projected at 22.5 million gallons, account for deep excavation in canal and structural zones. Erosion control will be managed through the installation of 85,000 cubic yards of riprap, while 19,000 cubic yards of engineered structural backfill will be used to stabilize newly constructed pump station areas.

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AIR CONFORMITY APPLICABILITY MODEL REPORT
RECORD OF AIR ANALYSIS (ROAA)

f. Point of Contact:
Name: Dewey Cooper
Title: Civ
Organization: Tetra Tech
Email:
Phone Number:

2. Air Impact Analysis: Based on the attainment status at the action location, the requirements of the GCR are:

____ applicable
_X_ not applicable

Total reasonably foreseeable net direct and indirect emissions associated with the action were estimated through ACAM on a calendar-year basis for the start of the action through achieving "steady state" (cCba.e., no net gain/loss in emission stabilized and the action is fully implemented) emissions. The ACAM analysis uses the latest and most accurate emission estimation techniques available; all algorithms, emission factors, and methodologies used are described in detail in the *USAF Air Emissions Guide for Air Force Stationary Sources*, the *USAF Air Emissions Guide for Air Force Mobile Sources*, and the *USAF Air Emissions Guide for Air Force Transitory Sources*.

"Insignificance Indicators" were used in the analysis to provide an indication of the significance of the proposed Action's potential impacts to local air quality. The insignificance indicators are trivial (de minimis) rate thresholds that have been demonstrated to have little to no impact to air quality. These insignificance indicators are the 250 ton/yr Prevention of Significant Deterioration (PSD) major source threshold and 25 ton/yr for lead for actions occurring in areas that are "Attainment" (cCba.e., not exceeding any National Ambient Air Quality Standard (NAAQS)). These indicators do not define a significant impact; however, they do provide a threshold to identify actions that are insignificant. Any action with net emissions below the insignificance indicators for all criteria pollutants is considered so insignificant that the action will not cause or contribute to an exceedance on one or more NAAQS. For further detail on insignificance indicators, refer to *Level II, Air Quality Quantitative Assessment, Insignificance Indicators*.

The action's net emissions for every year through achieving steady state were compared against the Insignificance Indicators and are summarized below.

Analysis Summary:

2027

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	1.961	250	No
NOx	16.183	250	No
CO	17.663	250	No
SOx	0.176	250	No
PM 10	444.287	250	Yes
PM 2.5	0.725	250	No
Pb	0.000	25	No
NH3	0.056	250	No

2028

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR

AIR CONFORMITY APPLICABILITY MODEL REPORT
RECORD OF AIR ANALYSIS (ROAA)

		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.829	250	No
NOx	6.508	250	No
CO	7.152	250	No
SOx	0.153	250	No
PM 10	14.121	250	No
PM 2.5	0.350	250	No
Pb	0.000	25	No
NH3	0.046	250	No

2029

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.029	250	No
NOx	0.000	250	No
CO	0.000	250	No
SOx	0.000	250	No
PM 10	0.000	250	No
PM 2.5	0.000	250	No
Pb	0.000	25	No
NH3	0.000	250	No

2030

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	-0.902	250	No
NOx	-2.615	250	No
CO	-2.246	250	No
SOx	-0.788	250	No
PM 10	-0.803	250	No
PM 2.5	-0.803	250	No
Pb	0.000	25	No
NH3	0.000	250	No

2031 - (Steady State)

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	-0.902	250	No
NOx	-2.615	250	No
CO	-2.246	250	No
SOx	-0.788	250	No
PM 10	-0.803	250	No
PM 2.5	-0.803	250	No
Pb	0.000	25	No
NH3	0.000	250	No

The estimated annual net emissions associated with this action temporarily exceeds the insignificance indicators. However, the steady state estimated annual net emissions are below the insignificance indicators showing no significant long-term impact to air quality. Therefore, the action will not cause or contribute to an exceedance on

AIR CONFORMITY APPLICABILITY MODEL REPORT
RECORD OF AIR ANALYSIS (ROAA)

one or more NAAQSs and will have an insignificant impact on air quality. No further air quality impact assessment is needed.

Dewey Cooper, Civ	Sep 18 2025
Name, Title	**Date**

AIR CONFORMITY APPLICABILITY MODEL REPORT
RECORD OF AIR ANALYSIS (ROAA)

1. General Information: The Air Force's Air Conformity Applicability Model (ACAM) was used to perform a net change in emissions analysis to assess the potential air quality impact/s associated with the action. The analysis was performed in accordance with the Air Force Manual 32-7002, *Environmental Compliance and Pollution Prevention*; the *Environmental Impact Analysis Process* (EIAP, 32 CFR 989); the *General Conformity Rule* (GCR, 40 CFR 93 Subpart B); and the *USAF Air Quality Environmental Impact Analysis Process (EIAP) Guide*. This report provides a summary of the ACAM analysis.

Report generated with ACAM version: 5.0.24a

a. Action Location:

State: Florida
Regulatory Area(s): NOT IN A REGULATORY AREA

b. Action Title: Section 203 Study Area

c. Project Number/s (if applicable): Upgrade of Sturctures

d. Projected Action Start Date: 1 / 2032

e. Action Description:

The project Section 203 sStudy Aarea (Study Area), also referred to as boundaries are derived from the respective watersheds and contiguous urban areas associated with Reach A in the C&SF Section 216 Flood Resiliency Study, spans approximately 420 square miles where hydrologic, hydraulic, and hydrodynamic modeling have demonstrated highly vulnerable infrastructure in the C&SF system within eastern Broward County and a small portion of southern Palm Beach County. The Section 203 Study Area includes nine upstream and six downstream watershed basins, interconnected by a network of seven primary canals managed by nine water control structures (WCS), seven of which are coastal structures, in addition to other existing water control structures not directly relevant in this Section 203 Study.The Alternative A encompasses a broad range of site development and infrastructure activities across multiple zones, notably S13, S33, S37A, S36, G56, G57 and G54 areas. Key tasks include the removal of approximately 8,600 cubic yards of soil and 445 cubic yards of trees, with land disturbance totaling over 814,000 square feet. Demolition operations, particularly of coffer dams and associated structures, account for a significant area of 400,600 square feet. New construction, including gated buildings, will occupy approximately 621,000 square feet. Site preparation includes substantial topsoil stripping (126,000 ft²), dewatering estimated at 10 million gallons, and installation of 8,800 ft² of sheet piling for excavation support. Erosion control will be managed by installing 25,000 cubic yards of riprap. Structural stability will be achieved through 11,600 cubic yards of engineered backfill. Additionally, 105,000 square feet of asphalt will be removed to facilitate access, staging, and system integration across the project footprint.Alternative B entails a significantly expanded scope of work involving comprehensive site development and construction activities across nine locations (S13, S33, S37A, S36, S37B, G57, G56, and G54). Approximately 15,600 cubic yards of soil will be removed, with land disturbance encompassing 1,353,000 square feet, reflecting extensive ground impact. Demolition of coffer dams and associated structures spans a substantial 1,074,000 square feet, while new gated construction efforts will cover 1,535,000 square feet. Dewatering requirements, projected at 22.5 million gallons, account for deep excavation in canal and structural zones. Erosion control will be managed through the installation of 85,000 cubic yards of riprap, while 19,000 cubic yards of engineered structural backfill will be used to stabilize newly constructed pump station areas.

Additional site preparation includes tree removal totaling 845 cubic yards, topsoil stripping across 144,000 square feet, and asphalt pavement removal totaling 87,000 square feet for improved construction access. The coffer dam construction footprint expands significantly under this alternative, reaching 744,000 square feet. Overall, Alternative B represents a more intensive approach than the base case, involving greater volumes of material handling, broader site disruption, and larger structural developments to support the proposed infrastructure objectives.

AIR CONFORMITY APPLICABILITY MODEL REPORT
RECORD OF AIR ANALYSIS (ROAA)

f. Point of Contact:
Name: Dewey Cooper
Title: Civ
Organization: Tetra Tech
Email:
Phone Number:

2. Air Impact Analysis: Based on the attainment status at the action location, the requirements of the GCR are:

____ applicable
_X_ not applicable

Total reasonably foreseeable net direct and indirect emissions associated with the action were estimated through ACAM on a calendar-year basis for the start of the action through achieving "steady state" (cCba.e., no net gain/loss in emission stabilized and the action is fully implemented) emissions. The ACAM analysis uses the latest and most accurate emission estimation techniques available; all algorithms, emission factors, and methodologies used are described in detail in the *USAF Air Emissions Guide for Air Force Stationary Sources*, the *USAF Air Emissions Guide for Air Force Mobile Sources*, and the *USAF Air Emissions Guide for Air Force Transitory Sources*.

"Insignificance Indicators" were used in the analysis to provide an indication of the significance of the proposed Action's potential impacts to local air quality. The insignificance indicators are trivial (de minimis) rate thresholds that have been demonstrated to have little to no impact to air quality. These insignificance indicators are the 250 ton/yr Prevention of Significant Deterioration (PSD) major source threshold and 25 ton/yr for lead for actions occurring in areas that are "Attainment" (cCba.e., not exceeding any National Ambient Air Quality Standard (NAAQS)). These indicators do not define a significant impact; however, they do provide a threshold to identify actions that are insignificant. Any action with net emissions below the insignificance indicators for all criteria pollutants is considered so insignificant that the action will not cause or contribute to an exceedance on one or more NAAQS. For further detail on insignificance indicators, refer to *Level II, Air Quality Quantitative Assessment, Insignificance Indicators*.

The action's net emissions for every year through achieving steady state were compared against the Insignificance Indicators and are summarized below.

Analysis Summary:

2032

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.172	250	No
NOx	9.889	250	No
CO	2.437	250	No
SOx	-0.091	250	No
PM 10	0.221	250	No
PM 2.5	0.221	250	No
Pb	0.000	25	No
NH3	0.000	250	No

2033 - (Steady State)

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR

AIR CONFORMITY APPLICABILITY MODEL REPORT
RECORD OF AIR ANALYSIS (ROAA)

		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.172	250	No
NOx	9.889	250	No
CO	2.437	250	No
SOx	-0.091	250	No
PM 10	0.221	250	No
PM 2.5	0.221	250	No
Pb	0.000	25	No
NH3	0.000	250	No

None of the estimated annual net emissions associated with this action are above the insignificance indicators; therefore, the action will not cause or contribute to an exceedance of one or more NAAQSs and will have an insignificant impact on air quality. No further air assessment is needed.

Dewey Cooper, Civ — Sep 18 2025

Name, Title — **Date**

DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

1. General Information

- Action Location

Base: MACDILL AFB
State: Florida
County(s): Hillsborough
Regulatory Area(s): NOT IN A REGULATORY AREA

- Action Title: Section 203 Study Area

- Project Number/s (if applicable): Upgrade of Sturctures

- Projected Action Start Date: 1 / 2027

- Action Purpose and Need:

Upgrade of Sturctures

- Action Description:

The project Section 203 sStudy Aarea (Study Area), also referred to as boundaries are derived from the respective watersheds and contiguous urban areas associated with Reach A in the C&SF Section 216 Flood Resiliency Study, spans approximately 420 square miles where hydrologic, hydraulic, and hydrodynamic modeling have demonstrated highly vulnerable infrastructure in the C&SF system within eastern Broward County and a small portion of southern Palm Beach County. The Section 203 Study Area includes nine upstream and six downstream watershed basins, interconnected by a network of seven primary canals managed by nine water control structures (WCS), seven of which are coastal structures, in addition to other existing water control structures not directly relevant in this Section 203 Study.The Alternative A encompasses a broad range of site development and infrastructure activities across multiple zones, notably S13, S33, S37A, S36, G56, G57 and G54 areas. Key tasks include the removal of approximately 8,600 cubic yards of soil and 445 cubic yards of trees, with land disturbance totaling over 814,000 square feet. Demolition operations, particularly of coffer dams and associated structures, account for a significant area of 400,600 square feet. New construction, including gated buildings, will occupy approximately 621,000 square feet. Site preparation includes substantial topsoil stripping (126,000 ft^2), dewatering estimated at 10 million gallons, and installation of 8,800 ft^2 of sheet piling for excavation support. Erosion control will be managed by installing 25,000 cubic yards of riprap. Structural stability will be achieved through 11,600 cubic yards of engineered backfill. Additionally, 105,000 square feet of asphalt will be removed to facilitate access, staging, and system integration across the project footprint.Alternative B entails a significantly expanded scope of work involving comprehensive site development and construction activities across nine locations (S13, S33, S37A, S36, S37B, G57, G56, and G54). Approximately 15,600 cubic yards of soil will be removed, with land disturbance encompassing 1,353,000 square feet, reflecting extensive ground impact. Demolition of coffer dams and associated structures spans a substantial 1,074,000 square feet, while new gated construction efforts will cover 1,535,000 square feet. Dewatering requirements, projected at 22.5 million gallons, account for deep excavation in canal and structural zones. Erosion control will be managed through the installation of 85,000 cubic yards of riprap, while 19,000 cubic yards of engineered structural backfill will be used to stabilize newly constructed pump station areas.

Additional site preparation includes tree removal totaling 845 cubic yards, topsoil stripping across 144,000 square feet, and asphalt pavement removal totaling 87,000 square feet for improved construction access. The coffer dam construction footprint expands significantly under this alternative, reaching 744,000 square feet. Overall, Alternative B represents a more intensive approach than the base case, involving greater volumes of material handling, broader site disruption, and larger structural developments to support the proposed infrastructure objectives.

- Point of Contact

Name: Dewey Cooper
Title: Civ

DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

Organization: Tetra Tech
Email:
Phone Number:

Report generated with ACAM version: 5.0.24a

- Activity List:

Activity Type		Activity Title
2.	Construction / Demolition	Alternate A
3.	Emergency Generator	Pump Engine
4.	Emergency Generator	Aux Engine
5.	Emergency Generator	300 HP
6.	Emergency Generator	Emergency Generator
7.	Emergency Generator	S-13 Removal of Diesel Primary
8.	Emergency Generator	Dewatering

Emission factors and air emission estimating methods come from the United States Air Force's Air Emissions Guide for Air Force Stationary Sources, Air Emissions Guide for Air Force Mobile Sources, and Air Emissions Guide for Air Force Transitory Sources.

2. Construction / Demolition

2.1 General Information & Timeline Assumptions

- Activity Location
County: Hillsborough
Regulatory Area(s): NOT IN A REGULATORY AREA

- Activity Title: Alternate A

- Activity Description:
The proposed project encompasses a broad range of site development and infrastructure activities across multiple zones, notably S13, S33, S37A, S36, G56, G57 and G54 areas. Key tasks include the removal of approximately 8,600 cubic yards of soil and 445 cubic yards of trees, with land disturbance totaling over 814,000 square feet. Demolition operations, particularly of coffer dams and associated structures, account for a significant area of 400,600 square feet. New construction, including gated buildings, will occupy approximately 621,000 square feet. Site preparation includes substantial topsoil stripping (126,000 ft²), dewatering estimated at 10 million gallons, and installation of 8,800 ft² of sheet piling for excavation support. Erosion control will be managed by installing 25,000 cubic yards of riprap. Structural stability will be achieved through 11,600 cubic yards of engineered backfill. Additionally, 105,000 square feet of asphalt will be removed to facilitate access, staging, and system integration across the project footprint.

- Activity Start Date
Start Month: 1
Start Month: 2027

- Activity End Date
Indefinite: False
End Month: 5
End Month: 2029

- Activity Emissions:

Pollutant	Total Emissions (TONs)

Pollutant	Total Emissions (TONs)

DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

VOC	2.483684
SO_x	0.046439
NO_x	21.311359
CO	23.894252

PM 10	458.107516
PM 2.5	0.774514
Pb	0.000000
NH_3	0.101203

- Global Scale Activity Emissions of Greenhouse Gasses:

Pollutant	Total Emissions (TONs)
CH_4	0.203632
N_2O	0.234968

Pollutant	Total Emissions (TONs)
CO_2	5933.867548
CO_2e	6001.835085

2.1 Demolition Phase

2.1.1 Demolition Phase Timeline Assumptions

- Phase Start Date
Start Month: 1
Start Quarter: 1
Start Year: 2027

- Phase Duration
Number of Month: 24
Number of Days: 0

2.1.2 Demolition Phase Assumptions

- General Demolition Information
Area of Building to be demolished (ft^2): 1400000
Height of Building to be demolished (ft): 12

- Default Settings Used: Yes

- Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Concrete/Industrial Saws Composite	1	8
Excavators Composite	3	8
Rubber Tired Dozers Composite	2	8
Tractors/Loaders/Backhoes Composite	2	6

- Vehicle Exhaust
Average Hauling Truck Capacity (yd^3): 20 (default)
Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips
Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC

POVs	50.00	50.00	0	0	0	0	0

2.1.3 Demolition Phase Emission Factor(s)

- Construction Exhaust Criteria Pollutant Emission Factors (g/hp-hour) (default)

Concrete/Industrial Saws Composite [HP: 33] [LF: 0.73]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.38980	0.00742	3.42957	4.29108	0.07071	0.06505
Excavators Composite [HP: 36] [LF: 0.38]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.37809	0.00542	3.36699	4.21640	0.08879	0.08169
Rubber Tired Dozers Composite [HP: 367] [LF: 0.4]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.34288	0.00492	3.09108	2.65644	0.13550	0.12466
Tractors/Loaders/Backhoes Composite [HP: 84] [LF: 0.37]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.17717	0.00489	1.80740	3.48712	0.05440	0.05005

- Construction Exhaust Greenhouse Gasses Pollutant Emission Factors (g/hp-hour) (default)

Concrete/Industrial Saws Composite [HP: 33] [LF: 0.73]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02330	0.00466	574.33236	576.30332
Excavators Composite [HP: 36] [LF: 0.38]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02383	0.00477	587.39431	589.41010
Rubber Tired Dozers Composite [HP: 367] [LF: 0.4]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02160	0.00432	532.55942	534.38703
Tractors/Loaders/Backhoes Composite [HP: 84] [LF: 0.37]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02148	0.00430	529.61807	531.43559

- Vehicle Exhaust & Worker Trips Criteria Pollutant Emission Factors (grams/mile)

	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**NH_3**
LDGV	0.30250	0.00278	0.10216	4.37740	0.02381	0.00738	0.04984
LDGT	0.25584	0.00352	0.15087	3.96319	0.02489	0.00829	0.04170
HDGV	0.80268	0.00758	0.53554	9.42531	0.05206	0.02398	0.08830
LDDV	0.11600	0.00133	0.17757	7.08987	0.02608	0.00873	0.01694
LDDT	0.11871	0.00132	0.20883	3.52458	0.02453	0.00897	0.01663
HDDV	0.10536	0.00421	2.35450	1.64049	0.17368	0.08066	0.06684
MC	2.90332	0.00331	0.53638	11.52717	0.03290	0.02177	0.05245

- Vehicle Exhaust & Worker Trips Greenhouse Gasses Emission Factors (grams/mile)

	CH_4	**N_2O**	**CO_2**	**CO_2e**
LDGV	0.01413	0.00493	331.23691	332.93781
LDGT	0.01514	0.00719	419.65142	421.98105
HDGV	0.04771	0.02469	904.41092	912.28839
LDDV	0.04390	0.00074	393.54551	394.96998
LDDT	0.02222	0.00109	393.93490	394.84539
HDDV	0.02015	0.16469	1252.74971	1296.95643
MC	0.10508	0.00322	390.91110	394.70550

2.1.4 Demolition Phase Formula(s)

DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

- Fugitive Dust Emissions per Phase
$PM10_{FD}$ = (0.00042 * BA * BH) / 2000

$PM10_{FD}$: Fugitive Dust PM 10 Emissions (TONs)
0.00042: Emission Factor (lb/ft^3)
BA: Area of Building to be demolished (ft^2)
BH: Height of Building to be demolished (ft)
2000: Conversion Factor pounds to tons

- Construction Exhaust Emissions per Phase
CEE_{POL} = (NE * WD * H * HP * LF * EF_{POL}* 0.002205) / 2000

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
HP: Equipment Horsepower
LF: Equipment Load Factor
EF_{POL}: Emission Factor for Pollutant (g/hp-hour)
0.002205: Conversion Factor grams to pounds
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase
VMT_{VE} = BA * BH * (1 / 27) * 0.25 * (1 / HC) * HT

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
BA: Area of Building being demolish (ft^2)
BH: Height of Building being demolish (ft)
(1 / 27): Conversion Factor cubic feet to cubic yards (1 yd^3 / 27 ft^3)
0.25: Volume reduction factor (material reduced by 75% to account for air space)
HC: Average Hauling Truck Capacity (yd^3)
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Vehicle Exhaust On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase
VMT_{WT} = WD * WT * 1.25 * NE

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000

V_{POL}: Vehicle Emissions (TONs)

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

2.2 Site Grading Phase

2.2.1 Site Grading Phase Timeline Assumptions

- Phase Start Date
Start Month: 1
Start Quarter: 1
Start Year: 2027

- Phase Duration
Number of Month: 12
Number of Days: 0

2.2.2 Site Grading Phase Assumptions

- General Site Grading Information
Area of Site to be Graded (ft^2): 3600000
Amount of Material to be Hauled On-Site (yd^3): 12000
Amount of Material to be Hauled Off-Site (yd^3): 25000

- Site Grading Default Settings
Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Excavators Composite	1	8
Graders Composite	2	8
Other Construction Equipment Composite	2	8
Rollers Composite	1	8
Rubber Tired Dozers Composite	3	8
Scrapers Composite	6	8
Tractors/Loaders/Backhoes Composite	2	8

- Vehicle Exhaust
Average Hauling Truck Capacity (yd^3): 20 (default)
Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips
Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

2.2.3 Site Grading Phase Emission Factor(s)

- Construction Exhaust Criteria Pollutant Emission Factors (g/hp-hour) (default)

Excavators Composite [HP: 36] [LF: 0.38]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.37809	0.00542	3.36699	4.21640	0.08879	0.08169
Graders Composite [HP: 148] [LF: 0.41]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.29535	0.00490	2.28401	3.40565	0.12705	0.11688
Other Construction Equipment Composite [HP: 82] [LF: 0.42]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.25231	0.00487	2.49971	3.48392	0.13245	0.12186
Rollers Composite [HP: 36] [LF: 0.38]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.52865	0.00542	3.57666	4.10537	0.14602	0.13434
Rubber Tired Dozers Composite [HP: 367] [LF: 0.4]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.34288	0.00492	3.09108	2.65644	0.13550	0.12466
Scrapers Composite [HP: 423] [LF: 0.48]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.19058	0.00488	1.60937	1.52212	0.06336	0.05829
Tractors/Loaders/Backhoes Composite [HP: 84] [LF: 0.37]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.17717	0.00489	1.80740	3.48712	0.05440	0.05005

- Construction Exhaust Greenhouse Gasses Pollutant Emission Factors (g/hp-hour) (default)

Excavators Composite [HP: 36] [LF: 0.38]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02383	0.00477	587.39431	589.41010
Graders Composite [HP: 148] [LF: 0.41]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02155	0.00431	531.25291	533.07604
Other Construction Equipment Composite [HP: 82] [LF: 0.42]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02140	0.00428	527.44206	529.25211
Rollers Composite [HP: 36] [LF: 0.38]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02382	0.00476	587.12246	589.13732
Rubber Tired Dozers Composite [HP: 367] [LF: 0.4]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02160	0.00432	532.55942	534.38703
Scrapers Composite [HP: 423] [LF: 0.48]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02145	0.00429	528.70476	530.51914
Tractors/Loaders/Backhoes Composite [HP: 84] [LF: 0.37]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02148	0.00430	529.61807	531.43559

- Vehicle Exhaust & Worker Trips Criteria Pollutant Emission Factors (grams/mile)

	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**NH_3**
LDGV	0.30250	0.00278	0.10216	4.37740	0.02381	0.00738	0.04984
LDGT	0.25584	0.00352	0.15087	3.96319	0.02489	0.00829	0.04170
HDGV	0.80268	0.00758	0.53554	9.42531	0.05206	0.02398	0.08830

LDDV	0.11600	0.00133	0.17757	7.08987	0.02608	0.00873	0.01694
LDDT	0.11871	0.00132	0.20883	3.52458	0.02453	0.00897	0.01663
HDDV	0.10536	0.00421	2.35450	1.64049	0.17368	0.08066	0.06684
MC	2.90332	0.00331	0.53638	11.52717	0.03290	0.02177	0.05245

- Vehicle Exhaust & Worker Trips Greenhouse Gasses Emission Factors (grams/mile)

	CH_4	N_2O	CO_2	CO_2e
LDGV	0.01413	0.00493	331.23691	332.93781
LDGT	0.01514	0.00719	419.65142	421.98105
HDGV	0.04771	0.02469	904.41092	912.28839
LDDV	0.04390	0.00074	393.54551	394.96998
LDDT	0.02222	0.00109	393.93490	394.84539
HDDV	0.02015	0.16469	1252.74971	1296.95643
MC	0.10508	0.00322	390.91110	394.70550

2.2.4 Site Grading Phase Formula(s)

- Fugitive Dust Emissions per Phase

$PM10_{FD} = (20 * ACRE * WD) / 2000$

$PM10_{FD}$: Fugitive Dust PM 10 Emissions (TONs)
20: Conversion Factor Acre Day to pounds (20 lb / 1 Acre Day)
ACRE: Total acres (acres)
WD: Number of Total Work Days (days)
2000: Conversion Factor pounds to tons

- Construction Exhaust Emissions per Phase

$CEE_{POL} = (NE * WD * H * HP * LF * EF_{POL} * 0.002205) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
HP: Equipment Horsepower
LF: Equipment Load Factor
EF_{POL}: Emission Factor for Pollutant (g/hp-hour)
0.002205: Conversion Factor grams to pounds
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase

$VMT_{VE} = (HA_{OnSite} + HA_{OffSite}) * (1 / HC) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
HA_{OnSite}: Amount of Material to be Hauled On-Site (yd^3)
$HA_{OffSite}$: Amount of Material to be Hauled Off-Site (yd^3)
HC: Average Hauling Truck Capacity (yd^3)
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)

VM: Vehicle Exhaust On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase

$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

2.3 Trenching/Excavating Phase

2.3.1 Trenching / Excavating Phase Timeline Assumptions

- Phase Start Date

Start Month: 1
Start Quarter: 1
Start Year: 2027

- Phase Duration

Number of Month: 24
Number of Days: 0

2.3.2 Trenching / Excavating Phase Assumptions

- General Trenching/Excavating Information

Area of Site to be Trenched/Excavated (ft^2): 100000
Amount of Material to be Hauled On-Site (yd^3): 800000
Amount of Material to be Hauled Off-Site (yd^3): 1000

- Trenching Default Settings

Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Excavators Composite	2	8
Other General Industrial Equipmen Composite	1	8
Tractors/Loaders/Backhoes Composite	1	8

- Vehicle Exhaust

Average Hauling Truck Capacity (yd^3): 20 (default)
Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips

Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

2.3.3 Trenching / Excavating Phase Emission Factor(s)

- Construction Exhaust Criteria Pollutant Emission Factors (g/hp-hour) (default)

Excavators Composite [HP: 36] [LF: 0.38]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.37809	0.00542	3.36699	4.21640	0.08879	0.08169
Other General Industrial Equipmen Composite [HP: 35] [LF: 0.34]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.43579	0.00542	3.52468	4.59651	0.09918	0.09125
Tractors/Loaders/Backhoes Composite [HP: 84] [LF: 0.37]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.17717	0.00489	1.80740	3.48712	0.05440	0.05005

- Construction Exhaust Greenhouse Gasses Pollutant Emission Factors (g/hp-hour) (default)

Excavators Composite [HP: 36] [LF: 0.38]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02383	0.00477	587.39431	589.41010
Other General Industrial Equipmen Composite [HP: 35] [LF: 0.34]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02385	0.00477	587.92708	589.94470
Tractors/Loaders/Backhoes Composite [HP: 84] [LF: 0.37]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02148	0.00430	529.61807	531.43559

- Vehicle Exhaust & Worker Trips Criteria Pollutant Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	NH_3
LDGV	0.30250	0.00278	0.10216	4.37740	0.02381	0.00738	0.04984
LDGT	0.25584	0.00352	0.15087	3.96319	0.02489	0.00829	0.04170
HDGV	0.80268	0.00758	0.53554	9.42531	0.05206	0.02398	0.08830
LDDV	0.11600	0.00133	0.17757	7.08987	0.02608	0.00873	0.01694
LDDT	0.11871	0.00132	0.20883	3.52458	0.02453	0.00897	0.01663
HDDV	0.10536	0.00421	2.35450	1.64049	0.17368	0.08066	0.06684
MC	2.90332	0.00331	0.53638	11.52717	0.03290	0.02177	0.05245

- Vehicle Exhaust & Worker Trips Greenhouse Gasses Emission Factors (grams/mile)

	CH_4	N_2O	CO_2	CO_2e
LDGV	0.01413	0.00493	331.23691	332.93781
LDGT	0.01514	0.00719	419.65142	421.98105
HDGV	0.04771	0.02469	904.41092	912.28839
LDDV	0.04390	0.00074	393.54551	394.96998
LDDT	0.02222	0.00109	393.93490	394.84539
HDDV	0.02015	0.16469	1252.74971	1296.95643

MC	0.10508	0.00322	390.91110	394.70550

2.3.4 Trenching / Excavating Phase Formula(s)

- Fugitive Dust Emissions per Phase
$PM10_{FD} = (20 * ACRE * WD) / 2000$

$PM10_{FD}$: Fugitive Dust PM 10 Emissions (TONs)
20: Conversion Factor Acre Day to pounds (20 lb / 1 Acre Day)
ACRE: Total acres (acres)
WD: Number of Total Work Days (days)
2000: Conversion Factor pounds to tons

- Construction Exhaust Emissions per Phase
$CEE_{POL} = (NE * WD * H * HP * LF * EF_{POL} * 0.002205) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
HP: Equipment Horsepower
LF: Equipment Load Factor
EF_{POL}: Emission Factor for Pollutant (g/hp-hour)
0.002205: Conversion Factor grams to pounds
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase
$VMT_{VE} = (HA_{OnSite} + HA_{OffSite}) * (1 / HC) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
HA_{OnSite}: Amount of Material to be Hauled On-Site (yd^3)
$HA_{OffSite}$: Amount of Material to be Hauled Off-Site (yd^3)
HC: Average Hauling Truck Capacity (yd^3)
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Vehicle Exhaust On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase
$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

2.4 Building Construction Phase

2.4.1 Building Construction Phase Timeline Assumptions

- Phase Start Date
Start Month: 1
Start Quarter: 1
Start Year: 2027

- Phase Duration
Number of Month: 24
Number of Days: 0

2.4.2 Building Construction Phase Assumptions

- General Building Construction Information
Building Category: Commercial or Retail
Area of Building (ft^2): 621000
Height of Building (ft): 20
Number of Units: N/A

- Building Construction Default Settings
Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Cranes Composite	1	7
Forklifts Composite	3	8
Generator Sets Composite	1	8
Tractors/Loaders/Backhoes Composite	3	7
Welders Composite	1	8

- Vehicle Exhaust
Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips
Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

- Vendor Trips

Average Vendor Round Trip Commute (mile): 40 (default)

- Vendor Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

2.4.3 Building Construction Phase Emission Factor(s)

- Construction Exhaust Criteria Pollutant Emission Factors (g/hp-hour) (default)

Cranes Composite [HP: 367] [LF: 0.29]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.19464	0.00487	1.74774	1.62852	0.07179	0.06605
Forklifts Composite [HP: 82] [LF: 0.2]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.22849	0.00487	2.15229	3.56761	0.09240	0.08501
Generator Sets Composite [HP: 14] [LF: 0.74]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.53730	0.00793	4.30480	2.85227	0.17170	0.15796
Tractors/Loaders/Backhoes Composite [HP: 84] [LF: 0.37]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.17717	0.00489	1.80740	3.48712	0.05440	0.05005
Welders Composite [HP: 46] [LF: 0.45]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.43501	0.00735	3.46616	4.46084	0.07894	0.07263

- Construction Exhaust Greenhouse Gasses Pollutant Emission Factors (g/hp-hour) (default)

Cranes Composite [HP: 367] [LF: 0.29]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02140	0.00428	527.45492	529.26501
Forklifts Composite [HP: 82] [LF: 0.2]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02138	0.00428	527.06992	528.87869
Generator Sets Composite [HP: 14] [LF: 0.74]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02305	0.00461	568.30624	570.25652
Tractors/Loaders/Backhoes Composite [HP: 84] [LF: 0.37]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02148	0.00430	529.61807	531.43559
Welders Composite [HP: 46] [LF: 0.45]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02305	0.00461	568.29664	570.24689

- Vehicle Exhaust & Worker Trips Criteria Pollutant Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	NH_3
LDGV	0.30250	0.00278	0.10216	4.37740	0.02381	0.00738	0.04984
LDGT	0.25584	0.00352	0.15087	3.96319	0.02489	0.00829	0.04170
HDGV	0.80268	0.00758	0.53554	9.42531	0.05206	0.02398	0.08830
LDDV	0.11600	0.00133	0.17757	7.08987	0.02608	0.00873	0.01694
LDDT	0.11871	0.00132	0.20883	3.52458	0.02453	0.00897	0.01663
HDDV	0.10536	0.00421	2.35450	1.64049	0.17368	0.08066	0.06684
MC	2.90332	0.00331	0.53638	11.52717	0.03290	0.02177	0.05245

- Vehicle Exhaust & Worker Trips Greenhouse Gasses Emission Factors (grams/mile)

	CH_4	N_2O	CO_2	CO_2e
LDGV	0.01413	0.00493	331.23691	332.93781
LDGT	0.01514	0.00719	419.65142	421.98105
HDGV	0.04771	0.02469	904.41092	912.28839
LDDV	0.04390	0.00074	393.54551	394.96998
LDDT	0.02222	0.00109	393.93490	394.84539
HDDV	0.02015	0.16469	1252.74971	1296.95643
MC	0.10508	0.00322	390.91110	394.70550

2.4.4 Building Construction Phase Formula(s)

- Construction Exhaust Emissions per Phase

$CEE_{POL} = (NE * WD * H * HP * LF * EF_{POL} * 0.002205) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
HP: Equipment Horsepower
LF: Equipment Load Factor
EF_{POL}: Emission Factor for Pollutant (g/hp-hour)
0.002205: Conversion Factor grams to pounds
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase

$VMT_{VE} = BA * BH * (0.32 / 1000) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
BA: Area of Building (ft^2)
BH: Height of Building (ft)
(0.32 / 1000): Conversion Factor ft^3 to trips (0.32 trip / 1000 ft^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase

$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Vender Trips Emissions per Phase
$VMT_{VT} = BA * BH * (0.05 / 1000) * HT$

VMT_{VT}: Vender Trips Vehicle Miles Travel (miles)
BA: Area of Building (ft^2)
BH: Height of Building (ft)
(0.05 / 1000): Conversion Factor ft^3 to trips (0.05 trip / 1000 ft^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VT}: Vender Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

2.5 Architectural Coatings Phase

2.5.1 Architectural Coatings Phase Timeline Assumptions

- Phase Start Date
Start Month: 6
Start Quarter: 1
Start Year: 2027

- Phase Duration
Number of Month: 24
Number of Days: 0

2.5.2 Architectural Coatings Phase Assumptions

- General Architectural Coatings Information
Building Category: Non-Residential
Total Square Footage (ft^2): 12000
Number of Units: N/A

- Architectural Coatings Default Settings
Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Worker Trips
Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

2.5.3 Architectural Coatings Phase Emission Factor(s)

- Worker Trips Criteria Pollutant Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	NH_3
LDGV	0.30250	0.00278	0.10216	4.37740	0.02381	0.00738	0.04984
LDGT	0.25584	0.00352	0.15087	3.96319	0.02489	0.00829	0.04170
HDGV	0.80268	0.00758	0.53554	9.42531	0.05206	0.02398	0.08830
LDDV	0.11600	0.00133	0.17757	7.08987	0.02608	0.00873	0.01694
LDDT	0.11871	0.00132	0.20883	3.52458	0.02453	0.00897	0.01663
HDDV	0.10536	0.00421	2.35450	1.64049	0.17368	0.08066	0.06684
MC	2.90332	0.00331	0.53638	11.52717	0.03290	0.02177	0.05245

- Worker Trips Greenhouse Gasses Emission Factors (grams/mile)

	CH_4	N_2O	CO_2	CO_2e
LDGV	0.01413	0.00493	331.23691	332.93781
LDGT	0.01514	0.00719	419.65142	421.98105
HDGV	0.04771	0.02469	904.41092	912.28839
LDDV	0.04390	0.00074	393.54551	394.96998
LDDT	0.02222	0.00109	393.93490	394.84539
HDDV	0.02015	0.16469	1252.74971	1296.95643
MC	0.10508	0.00322	390.91110	394.70550

2.5.4 Architectural Coatings Phase Formula(s)

- Worker Trips Emissions per Phase

$VMT_{WT} = (1 * WT * PA) / 800$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
1: Conversion Factor man days to trips (1 trip / 1 man * day)
WT: Average Worker Round Trip Commute (mile)
PA: Paint Area (ft^2)
800: Conversion Factor square feet to man days (1 ft^2 / 1 man * day)

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Off-Gassing Emissions per Phase

$VOC_{AC} = (AB * 2.0 * 0.0116) / 2000.0$

VOC_{AC}: Architectural Coating VOC Emissions (TONs)
BA: Area of Building (ft^2)
2.0: Conversion Factor total area to coated area (2.0 ft^2 coated area / total area)
0.0116: Emission Factor (lb/ft^2)
2000: Conversion Factor pounds to tons

2.6 Paving Phase

2.6.1 Paving Phase Timeline Assumptions

DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

- Phase Start Date
Start Month: 6
Start Quarter: 1
Start Year: 2027

- Phase Duration
Number of Month: 6
Number of Days: 0

2.6.2 Paving Phase Assumptions

- General Paving Information
Paving Area (ft^2): 325000

- Paving Default Settings
Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Cement and Mortar Mixers Composite	4	6
Pavers Composite	1	8
Paving Equipment Composite	2	6
Rollers Composite	2	6
Tractors/Loaders/Backhoes Composite	1	7

- Vehicle Exhaust
Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips
Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

2.6.3 Paving Phase Emission Factor(s)

- Construction Exhaust Criteria Pollutant Emission Factors (g/hp-hour) (default)

Cement and Mortar Mixers Composite [HP: 10] [LF: 0.56]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.55279	0.00855	4.19775	3.25549	0.16311	0.15007
Pavers Composite [HP: 81] [LF: 0.42]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.22921	0.00486	2.45013	3.43821	0.11941	0.10986
Paving Equipment Composite [HP: 89] [LF: 0.36]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.18341	0.00488	2.01586	3.40316	0.07465	0.06867

Rollers Composite [HP: 36] [LF: 0.38]						
	VOC	SO_x	NO_x	CO	PM 10	PM 2.5
Emission Factors	0.52865	0.00542	3.57666	4.10537	0.14602	0.13434
Tractors/Loaders/Backhoes Composite [HP: 84] [LF: 0.37]						
	VOC	SO_x	NO_x	CO	PM 10	PM 2.5
Emission Factors	0.17717	0.00489	1.80740	3.48712	0.05440	0.05005

- Construction Exhaust Greenhouse Gasses Pollutant Emission Factors (g/hp-hour) (default)

Cement and Mortar Mixers Composite [HP: 10] [LF: 0.56]				
	CH_4	N_2O	CO_2	CO_2e
Emission Factors	0.02313	0.00463	570.32048	572.27767
Pavers Composite [HP: 81] [LF: 0.42]				
	CH_4	N_2O	CO_2	CO_2e
Emission Factors	0.02133	0.00427	525.80912	527.61356
Paving Equipment Composite [HP: 89] [LF: 0.36]				
	CH_4	N_2O	CO_2	CO_2e
Emission Factors	0.02142	0.00428	528.06776	529.87995
Rollers Composite [HP: 36] [LF: 0.38]				
	CH_4	N_2O	CO_2	CO_2e
Emission Factors	0.02382	0.00476	587.12246	589.13732
Tractors/Loaders/Backhoes Composite [HP: 84] [LF: 0.37]				
	CH_4	N_2O	CO_2	CO_2e
Emission Factors	0.02148	0.00430	529.61807	531.43559

- Vehicle Exhaust & Worker Trips Criteria Pollutant Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	NH_3
LDGV	0.30250	0.00278	0.10216	4.37740	0.02381	0.00738	0.04984
LDGT	0.25584	0.00352	0.15087	3.96319	0.02489	0.00829	0.04170
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LDDV	0.11600	0.00133	0.17757	7.08987	0.02608	0.00873	0.01694
LDDT	0.11871	0.00132	0.20883	3.52458	0.02453	0.00897	0.01663
HDDV	0.10536	0.00421	2.35450	1.64049	0.17368	0.08066	0.06684
MC	2.90332	0.00331	0.53638	11.52717	0.03290	0.02177	0.05245

- Vehicle Exhaust & Worker Trips Greenhouse Gasses Emission Factors (grams/mile)

	CH_4	N_2O	CO_2	CO_2e
LDGV	0.01413	0.00493	331.23691	332.93781
LDGT	0.01514	0.00719	419.65142	421.98105
HDGV	0.04771	0.02469	904.41092	912.28839
LDDV	0.04390	0.00074	393.54551	394.96998
LDDT	0.02222	0.00109	393.93490	394.84539
HDDV	0.02015	0.16469	1252.74971	1296.95643
MC	0.10508	0.00322	390.91110	394.70550

2.6.4 Paving Phase Formula(s)

- Construction Exhaust Emissions per Phase

$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

- Construction Exhaust Emissions per Phase

$CEE_{POL} = (NE * WD * H * HP * LF * EF_{POL} * 0.002205) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment

WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
HP: Equipment Horsepower
LF: Equipment Load Factor
EF_{POL}: Emission Factor for Pollutant (g/hp-hour)
0.002205: Conversion Factor grams to pounds
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase

$VMT_{VE} = PA * 0.25 * (1 / 27) * (1 / HC) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
PA: Paving Area (ft^2)
0.25: Thickness of Paving Area (ft)
(1 / 27): Conversion Factor cubic feet to cubic yards (1 yd^3 / 27 ft^3)
HC: Average Hauling Truck Capacity (yd^3)
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Vehicle Exhaust On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase

$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Off-Gassing Emissions per Phase

$VOC_P = (2.62 * PA) / 43560 / 2000$

VOC_P: Paving VOC Emissions (TONs)
2.62: Emission Factor (lb/acre)
PA: Paving Area (ft^2)
43560: Conversion Factor square feet to acre (43560 ft2 / $acre)^2$ / acre)
2000: Conversion Factor square pounds to TONs (2000 lb / TON)

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3. Emergency Generator

3.1 General Information & Timeline Assumptions

- Add or Remove Activity from Baseline? Add

- Activity Location

Regulatory Area(s): NOT IN A REGULATORY AREA

- Activity Title: Pump Engine

- Activity Description:
800 aux engine to drive pump

- Activity Start Date
Start Month: 1
Start Year: 2030

- Activity End Date
Indefinite: Yes
End Month: N/A
End Year: N/A

- Activity Emissions of Criteria Pollutants:

Pollutant	Emissions Per Year (TONs)
VOC	0.034368
SO_x	0.000600
NO_x	1.243200
CO	0.330240

Pollutant	Emissions Per Year (TONs)
PM 10	0.038832
PM 2.5	0.038832
Pb	0.000000
NH_3	0.000000

- Global Scale Activity Emissions of Greenhouse Gasses:

Pollutant	Emissions Per Year (TONs)
CH_4	0.002222
N_2O	0.000444

Pollutant	Emissions Per Year (TONs)
CO_2	55.200000
CO_2e	63.840000

3.2 Emergency Generator Assumptions

- Emergency Generator
Type of Fuel used in Emergency Generator: Diesel
Number of Emergency Generators: 4

- Default Settings Used: No

- Emergency Generators Consumption
Emergency Generator's Horsepower: 800
Average Operating Hours Per Year (hours): 30

3.3 Emergency Generator Emission Factor(s)

- Emergency Generators Criteria Pollutant Emission Factor (lb/hp-hr)

VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3
0.000716	0.0000125	0.0259	0.00688	0.000809	0.000809		

- Emergency Generators Greenhouse Gasses Pollutant Emission Factor (lb/hp-hr)

CH_4	N_2O	CO_2	CO_2e
0.000046297	0.000009259	1.15	1.33

3.4 Emergency Generator Formula(s)

- Emergency Generator Emissions per Year

AE_{POL}= (NGEN * HP * OT * EF_{POL}) / 2000

AE_{POL}: Activity Emissions (TONs per Year)
NGEN: Number of Emergency Generators
HP: Emergency Generator's Horsepower (hp)
OT: Average Operating Hours Per Year (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hp-hr)

4. Emergency Generator

4.1 General Information & Timeline Assumptions

- Add or Remove Activity from Baseline? Add

- Activity Location
County: Hillsborough
Regulatory Area(s): NOT IN A REGULATORY AREA

- Activity Title: Aux Engine

- Activity Description:
500 hp Pump Engine

- Activity Start Date
Start Month: 1
Start Year: 2030

- Activity End Date
Indefinite: Yes
End Month: N/A
End Year: N/A

- Activity Emissions of Criteria Pollutants:

Pollutant	Emissions Per Year (TONs)
VOC	0.104625
SO_x	0.088125
NO_x	0.431250
CO	0.288000

Pollutant	Emissions Per Year (TONs)
PM 10	0.094125
PM 2.5	0.094125
Pb	0.000000
NH_3	0.000000

- Global Scale Activity Emissions of Greenhouse Gasses:

Pollutant	Emissions Per Year (TONs)
CH_4	0.001736
N_2O	0.000347

Pollutant	Emissions Per Year (TONs)
CO_2	43.125000
CO_2e	49.875000

4.2 Emergency Generator Assumptions

DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

- Emergency Generator
Type of Fuel used in Emergency Generator: Diesel
Number of Emergency Generators: 5

- Default Settings Used: No

- Emergency Generators Consumption
Emergency Generator's Horsepower: 500
Average Operating Hours Per Year (hours): 30

4.3 Emergency Generator Emission Factor(s)

- Emergency Generators Criteria Pollutant Emission Factor (lb/hp-hr)

VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3
0.00279	0.00235	0.0115	0.00768	0.00251	0.00251		

- Emergency Generators Greenhouse Gasses Pollutant Emission Factor (lb/hp-hr)

CH_4	N_2O	CO_2	CO_2e
0.000046297	0.000009259	1.15	1.33

4.4 Emergency Generator Formula(s)

- Emergency Generator Emissions per Year
$AE_{POL} = (NGEN * HP * OT * EF_{POL}) / 2000$

AE_{POL}: Activity Emissions (TONs per Year)
NGEN: Number of Emergency Generators
HP: Emergency Generator's Horsepower (hp)
OT: Average Operating Hours Per Year (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hp-hr)

5. Emergency Generator

5.1 General Information & Timeline Assumptions

- Add or Remove Activity from Baseline? Add

- Activity Location
County: Hillsborough
Regulatory Area(s): NOT IN A REGULATORY AREA

- Activity Title: 300 HP

- Activity Description:
3 Pumping Units

- Activity Start Date
Start Month: 1
Start Year: 2030

- Activity End Date
Indefinite: Yes

DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

End Month: N/A
End Year: N/A

- Activity Emissions of Criteria Pollutants:

Pollutant	Emissions Per Year (TONs)
VOC	0.025110
SO_x	0.021150
NO_x	0.103500
CO	0.069120

Pollutant	Emissions Per Year (TONs)
PM 10	0.022590
PM 2.5	0.022590
Pb	0.000000
NH_3	0.000000

- Global Scale Activity Emissions of Greenhouse Gasses:

Pollutant	Emissions Per Year (TONs)
CH_4	0.000417
N_2O	0.000083

Pollutant	Emissions Per Year (TONs)
CO_2	10.350000
CO_2e	11.970000

5.2 Emergency Generator Assumptions

- Emergency Generator
Type of Fuel used in Emergency Generator: Diesel
Number of Emergency Generators: 2

- Default Settings Used: No

- Emergency Generators Consumption
Emergency Generator's Horsepower: 300
Average Operating Hours Per Year (hours): 30

5.3 Emergency Generator Emission Factor(s)

- Emergency Generators Criteria Pollutant Emission Factor (lb/hp-hr)

VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3
0.00279	0.00235	0.0115	0.00768	0.00251	0.00251		

- Emergency Generators Greenhouse Gasses Pollutant Emission Factor (lb/hp-hr)

CH_4	N_2O	CO_2	CO_2e
0.000046297	0.000009259	1.15	1.33

5.4 Emergency Generator Formula(s)

- Emergency Generator Emissions per Year
$AE_{POL} = (NGEN * HP * OT * EF_{POL}) / 2000$

AE_{POL}: Activity Emissions (TONs per Year)
NGEN: Number of Emergency Generators
HP: Emergency Generator's Horsepower (hp)
OT: Average Operating Hours Per Year (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hp-hr)

6. Emergency Generator

6.1 General Information & Timeline Assumptions

- Add or Remove Activity from Baseline? Add

DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

- Activity Location
County: Hillsborough
Regulatory Area(s): NOT IN A REGULATORY AREA

- Activity Title: Emergency Generator

- Activity Description:
Emergency Generator
(480V Standby Emergency Generators (Diesel Engine Driven)

- Activity Start Date
Start Month: 1
Start Year: 2030

- Activity End Date
Indefinite: Yes
End Month: N/A
End Year: N/A

- Activity Emissions of Criteria Pollutants:

Pollutant	Emissions Per Year (TONs)
VOC	0.050220
SO_x	0.042300
NO_x	0.207000
CO	0.138240

Pollutant	Emissions Per Year (TONs)
PM 10	0.045180
PM 2.5	0.045180
Pb	0.000000
NH_3	0.000000

- Global Scale Activity Emissions of Greenhouse Gasses:

Pollutant	Emissions Per Year (TONs)
CH_4	0.000833
N_2O	0.000167

Pollutant	Emissions Per Year (TONs)
CO_2	20.700000
CO_2e	23.940000

6.2 Emergency Generator Assumptions

- Emergency Generator
Type of Fuel used in Emergency Generator: Diesel
Number of Emergency Generators: 6

- Default Settings Used: No

- Emergency Generators Consumption
Emergency Generator's Horsepower: 200
Average Operating Hours Per Year (hours): 30

6.3 Emergency Generator Emission Factor(s)

- Emergency Generators Criteria Pollutant Emission Factor (lb/hp-hr)

VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3
0.00279	0.00235	0.0115	0.00768	0.00251	0.00251		

- Emergency Generators Greenhouse Gasses Pollutant Emission Factor (lb/hp-hr)

CH_4	N_2O	CO_2	CO_2e
0.000046297	0.000009259	1.15	1.33

6.4 Emergency Generator Formula(s)

- Emergency Generator Emissions per Year

AE_{POL}= (NGEN * HP * OT * EF_{POL}) / 2000

AE_{POL}: Activity Emissions (TONs per Year)
NGEN: Number of Emergency Generators
HP: Emergency Generator's Horsepower (hp)
OT: Average Operating Hours Per Year (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hp-hr)

7. Emergency Generator

7.1 General Information & Timeline Assumptions

- Add or Remove Activity from Baseline? Remove

- Activity Location
County: Hillsborough
Regulatory Area(s): NOT IN A REGULATORY AREA

- Activity Title: S-13 Removal of Diesel Primary

- Activity Description:
S-13 Removal of Diesel Primary

- Activity Start Date
Start Month: 1
Start Year: 2030

- Activity End Date
Indefinite: Yes
End Month: N/A
End Year: N/A

- Activity Emissions of Criteria Pollutants:

Pollutant	Emissions Per Year (TONs)
VOC	-1.116000
SO_x	-0.940000
NO_x	-4.600000
CO	-3.072000

Pollutant	Emissions Per Year (TONs)
PM 10	-1.004000
PM 2.5	-1.004000
Pb	0.000000
NH_3	0.000000

- Global Scale Activity Emissions of Greenhouse Gasses:

Pollutant	Emissions Per Year (TONs)
CH_4	-0.018519
N_2O	-0.003704

Pollutant	Emissions Per Year (TONs)
CO_2	-460.000000
CO_2e	-532.000000

7.2 Emergency Generator Assumptions

- Emergency Generator
Type of Fuel used in Emergency Generator: Diesel
Number of Emergency Generators: 4

- Default Settings Used: No

- Emergency Generators Consumption
Emergency Generator's Horsepower: 200
Average Operating Hours Per Year (hours): 1000

7.3 Emergency Generator Emission Factor(s)

- Emergency Generators Criteria Pollutant Emission Factor (lb/hp-hr)

VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3
0.00279	0.00235	0.0115	0.00768	0.00251	0.00251		

- Emergency Generators Greenhouse Gasses Pollutant Emission Factor (lb/hp-hr)

CH_4	N_2O	CO_2	CO_2e
0.000046297	0.000009259	1.15	1.33

7.4 Emergency Generator Formula(s)

- Emergency Generator Emissions per Year
$AE_{POL} = (NGEN * HP * OT * EF_{POL}) / 2000$

AE_{POL}: Activity Emissions (TONs per Year)
NGEN: Number of Emergency Generators
HP: Emergency Generator's Horsepower (hp)
OT: Average Operating Hours Per Year (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hp-hr)

8. Emergency Generator

8.1 General Information & Timeline Assumptions

- Add or Remove Activity from Baseline? Add

- Activity Location
County: Hillsborough
Regulatory Area(s): NOT IN A REGULATORY AREA

- Activity Title: Dewatering

- Activity Description:
Pump for dewatering

- Activity Start Date
Start Month: 1
Start Year: 2027

- Activity End Date
Indefinite: No
End Month: 12
End Year: 2028

- Activity Emissions of Criteria Pollutants:

Pollutant	Total Emissions (TONs)

Pollutant	Total Emissions (TONs)

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VOC	0.334800
SO_x	0.282000
NO_x	1.380000
CO	0.921600

PM 10	0.301200
PM 2.5	0.301200
Pb	0.000000
NH_3	0.000000

- Global Scale Activity Emissions of Greenhouse Gasses:

Pollutant	Total Emissions (TONs)
CH_4	0.005556
N_2O	0.001111

Pollutant	Total Emissions (TONs)
CO_2	138.000000
CO_2e	159.600000

8.2 Emergency Generator Assumptions

- Emergency Generator
Type of Fuel used in Emergency Generator: Diesel
Number of Emergency Generators: 2

- Default Settings Used: No

- Emergency Generators Consumption
Emergency Generator's Horsepower: 60
Average Operating Hours Per Year (hours): 1000

8.3 Emergency Generator Emission Factor(s)

- Emergency Generators Criteria Pollutant Emission Factor (lb/hp-hr)

VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3
0.00279	0.00235	0.0115	0.00768	0.00251	0.00251		

- Emergency Generators Greenhouse Gasses Pollutant Emission Factor (lb/hp-hr)

CH_4	N_2O	CO_2	CO_2e
0.000046297	0.000009259	1.15	1.33

8.4 Emergency Generator Formula(s)

- Emergency Generator Emissions per Year
$AE_{POL} = (NGEN * HP * OT * EF_{POL}) / 2000$

AE_{POL}: Activity Emissions (TONs per Year)
NGEN: Number of Emergency Generators
HP: Emergency Generator's Horsepower (hp)
OT: Average Operating Hours Per Year (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hp-hr)

AIR CONFORMITY APPLICABILITY MODEL REPORT
RECORD OF AIR ANALYSIS (ROAA)

1. General Information: The Air Force's Air Conformity Applicability Model (ACAM) was used to perform a net change in emissions analysis to assess the potential air quality impact/s associated with the action. The analysis was performed in accordance with the Air Force Manual 32-7002, *Environmental Compliance and Pollution Prevention*; the *Environmental Impact Analysis Process* (EIAP, 32 CFR 989); the *General Conformity Rule* (GCR, 40 CFR 93 Subpart B); and the *USAF Air Quality Environmental Impact Analysis Process (EIAP) Guide*. This report provides a summary of the ACAM analysis.

Report generated with ACAM version: 5.0.24a

a. Action Location:
State: Florida
Regulatory Area(s): NOT IN A REGULATORY AREA

b. Action Title: Section 203 Study Area

c. Project Number/s (if applicable): Upgrade of Sturctures

d. Projected Action Start Date: 1 / 2027

e. Action Description:

The project Section 203 sStudy Aarea (Study Area), also referred to as boundaries are derived from the respective watersheds and contiguous urban areas associated with Reach A in the C&SF Section 216 Flood Resiliency Study, spans approximately 420 square miles where hydrologic, hydraulic, and hydrodynamic modeling have demonstrated highly vulnerable infrastructure in the C&SF system within eastern Broward County and a small portion of southern Palm Beach County. The Section 203 Study Area includes nine upstream and six downstream watershed basins, interconnected by a network of seven primary canals managed by nine water control structures (WCS), seven of which are coastal structures, in addition to other existing water control structures not directly relevant in this Section 203 Study.

f. Point of Contact:
Name: Dewey Cooper
Title: Civ
Organization: Tetra Tech
Email:
Phone Number:

2. Air Impact Analysis: Based on the attainment status at the action location, the requirements of the GCR are:

____ applicable
__X__ not applicable

Total reasonably foreseeable net direct and indirect emissions associated with the action were estimated through ACAM on a calendar-year basis for the start of the action through achieving "steady state" (cCba.e., no net gain/loss in emission stabilized and the action is fully implemented) emissions. The ACAM analysis uses the latest and most accurate emission estimation techniques available; all algorithms, emission factors, and methodologies used are described in detail in the *USAF Air Emissions Guide for Air Force Stationary Sources*, the *USAF Air Emissions Guide for Air Force Mobile Sources*, and the *USAF Air Emissions Guide for Air Force Transitory Sources*.

AIR CONFORMITY APPLICABILITY MODEL REPORT
RECORD OF AIR ANALYSIS (ROAA)

"Insignificance Indicators" were used in the analysis to provide an indication of the significance of the proposed Action's potential impacts to local air quality. The insignificance indicators are trivial (de minimis) rate thresholds that have been demonstrated to have little to no impact to air quality. These insignificance indicators are the 250 ton/yr Prevention of Significant Deterioration (PSD) major source threshold and 25 ton/yr for lead for actions occurring in areas that are "Attainment" (cCba.e., not exceeding any National Ambient Air Quality Standard (NAAQS)). These indicators do not define a significant impact; however, they do provide a threshold to identify actions that are insignificant. Any action with net emissions below the insignificance indicators for all criteria pollutants is considered so insignificant that the action will not cause or contribute to an exceedance on one or more NAAQS. For further detail on insignificance indicators, refer to *Level II, Air Quality Quantitative Assessment, Insignificance Indicators*.

The action's net emissions for every year through achieving steady state were compared against the Insignificance Indicators and are summarized below.

Analysis Summary:

2027

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	1.913	250	No
NOx	4.255	250	No
CO	6.013	250	No
SOx	0.009	250	No
PM 10	24.840	250	No
PM 2.5	0.148	250	No
Pb	0.000	25	No
NH3	0.010	250	No

2028 - (Steady State)

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.000	250	No
NOx	0.000	250	No
CO	0.000	250	No
SOx	0.000	250	No
PM 10	0.000	250	No
PM 2.5	0.000	250	No
Pb	0.000	25	No
NH3	0.000	250	No

None of the estimated annual net emissions associated with this action are above the insignificance indicators; therefore, the action will not cause or contribute to an exceedance of one or more NAAQSs and will have an insignificant impact on air quality. No further air assessment is needed.

Dewey Cooper, Civ — Sep 18 2025

Name, Title — **Date**

AIR CONFORMITY APPLICABILITY MODEL REPORT
RECORD OF AIR ANALYSIS (ROAA)

1. General Information: The Air Force's Air Conformity Applicability Model (ACAM) was used to perform a net change in emissions analysis to assess the potential air quality impact/s associated with the action. The analysis was performed in accordance with the Air Force Manual 32-7002, *Environmental Compliance and Pollution Prevention*; the *Environmental Impact Analysis Process* (EIAP, 32 CFR 989); the *General Conformity Rule* (GCR, 40 CFR 93 Subpart B); and the *USAF Air Quality Environmental Impact Analysis Process (EIAP) Guide*. This report provides a summary of the ACAM analysis.

Report generated with ACAM version: 5.0.24a

a. Action Location:
State: Florida
Regulatory Area(s): NOT IN A REGULATORY AREA

b. Action Title: Section 203 Study Area

c. Project Number/s (if applicable): Upgrade of Sturctures

d. Projected Action Start Date: 1 / 2027

e. Action Description:

The project Section 203 sStudy Aarea (Study Area), also referred to as boundaries are derived from the respective watersheds and contiguous urban areas associated with Reach A in the C&SF Section 216 Flood Resiliency Study, spans approximately 420 square miles where hydrologic, hydraulic, and hydrodynamic modeling have demonstrated highly vulnerable infrastructure in the C&SF system within eastern Broward County and a small portion of southern Palm Beach County. The Section 203 Study Area includes nine upstream and six downstream watershed basins, interconnected by a network of seven primary canals managed by nine water control structures (WCS), seven of which are coastal structures, in addition to other existing water control structures not directly relevant in this Section 203 Study.

f. Point of Contact:
Name: Dewey Cooper
Title: Civ
Organization: Tetra Tech
Email:
Phone Number:

2. Air Impact Analysis: Based on the attainment status at the action location, the requirements of the GCR are:

____ applicable
__X__ not applicable

Total reasonably foreseeable net direct and indirect emissions associated with the action were estimated through ACAM on a calendar-year basis for the start of the action through achieving "steady state" (cCba.e., no net gain/loss in emission stabilized and the action is fully implemented) emissions. The ACAM analysis uses the latest and most accurate emission estimation techniques available; all algorithms, emission factors, and methodologies used are described in detail in the *USAF Air Emissions Guide for Air Force Stationary Sources*, the *USAF Air Emissions Guide for Air Force Mobile Sources*, and the *USAF Air Emissions Guide for Air Force Transitory Sources*.

AIR CONFORMITY APPLICABILITY MODEL REPORT
RECORD OF AIR ANALYSIS (ROAA)

"Insignificance Indicators" were used in the analysis to provide an indication of the significance of the proposed Action's potential impacts to local air quality. The insignificance indicators are trivial (de minimis) rate thresholds that have been demonstrated to have little to no impact to air quality. These insignificance indicators are the 250 ton/yr Prevention of Significant Deterioration (PSD) major source threshold and 25 ton/yr for lead for actions occurring in areas that are "Attainment" (cCba.e., not exceeding any National Ambient Air Quality Standard (NAAQS)). These indicators do not define a significant impact; however, they do provide a threshold to identify actions that are insignificant. Any action with net emissions below the insignificance indicators for all criteria pollutants is considered so insignificant that the action will not cause or contribute to an exceedance on one or more NAAQS. For further detail on insignificance indicators, refer to *Level II, Air Quality Quantitative Assessment, Insignificance Indicators*.

The action's net emissions for every year through achieving steady state were compared against the Insignificance Indicators and are summarized below.

Analysis Summary:

2027

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	1.531	250	No
NOx	3.876	250	No
CO	6.564	250	No
SOx	-0.548	250	No
PM 10	126.995	250	No
PM 2.5	-0.370	250	No
Pb	0.000	25	No
NH3	0.012	250	No

2028

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	-0.670	250	No
NOx	-2.760	250	No
CO	-1.843	250	No
SOx	-0.564	250	No
PM 10	-0.602	250	No
PM 2.5	-0.602	250	No
Pb	0.000	25	No
NH3	0.000	250	No

2029

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	-0.670	250	No
NOx	-2.760	250	No
CO	-1.843	250	No
SOx	-0.564	250	No
PM 10	-0.602	250	No
PM 2.5	-0.602	250	No
Pb	0.000	25	No

AIR CONFORMITY APPLICABILITY MODEL REPORT
RECORD OF AIR ANALYSIS (ROAA)

NH3	0.000	250	No

2030

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.064	250	No
NOx	3.937	250	No
CO	0.963	250	No
SOx	-0.040	250	No
PM 10	0.084	250	No
PM 2.5	0.084	250	No
Pb	0.000	25	No
NH3	0.000	250	No

2031 - (Steady State)

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.064	250	No
NOx	3.937	250	No
CO	0.963	250	No
SOx	-0.040	250	No
PM 10	0.084	250	No
PM 2.5	0.084	250	No
Pb	0.000	25	No
NH3	0.000	250	No

None of the estimated annual net emissions associated with this action are above the insignificance indicators; therefore, the action will not cause or contribute to an exceedance of one or more NAAQSs and will have an insignificant impact on air quality. No further air assessment is needed.

Dewey Cooper, Civ — Oct 23 2025

Name, Title — **Date**

DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

1. General Information

- Action Location
State: Florida
Regulatory Area(s): NOT IN A REGULATORY AREA

- Action Title: Section 203 Study Area

- Project Number/s (if applicable): Upgrade of Sturctures

- Projected Action Start Date: 1 / 2027

- Action Purpose and Need:
Upgrade of Sturctures

- Action Description:
The project Section 203 sStudy Aarea (Study Area), also referred to as boundaries are derived from the respective watersheds and contiguous urban areas associated with Reach A in the C&SF Section 216 Flood Resiliency Study, spans approximately 420 square miles where hydrologic, hydraulic, and hydrodynamic modeling have demonstrated highly vulnerable infrastructure in the C&SF system within eastern Broward County and a small portion of southern Palm Beach County. The Section 203 Study Area includes nine upstream and six downstream watershed basins, interconnected by a network of seven primary canals managed by nine water control structures (WCS), seven of which are coastal structures, in addition to other existing water control structures not directly relevant in this Section 203 Study.

- Point of Contact
Name: Dewey Cooper
Title: Civ
Organization: Tetra Tech
Email:
Phone Number:

Report generated with ACAM version: 5.0.24a

- Activity List:

Activity Type		Activity Title
2.	Construction / Demolition	G 56-
3.	Emergency Generator	Backup Genset's
4.	Emergency Generator	800 hp
5.	Emergency Generator	S-13 Removal of Diesel Primary
6.	Emergency Generator	500 hp

Emission factors and air emission estimating methods come from the United States Air Force's Air Emissions Guide for Air Force Stationary Sources, Air Emissions Guide for Air Force Mobile Sources, and Air Emissions Guide for Air Force Transitory Sources.

2. Construction / Demolition

2.1 General Information & Timeline Assumptions

- Activity Location

DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

Regulatory Area(s): NOT IN A REGULATORY AREA

- Activity Title: G 56-

- Activity Description:
Demo Upgrade of Flood Control System

- Activity Start Date
Start Month: 1
Start Month: 2027

- Activity End Date
Indefinite: False
End Month: 12
End Month: 2027

- Activity Emissions:

Pollutant	Total Emissions (TONs)
VOC	2.200390
SO_x	0.016408
NO_x	6.636125
CO	8.407606

Pollutant	Total Emissions (TONs)
PM 10	127.596971
PM 2.5	0.232744
Pb	0.000000
NH_3	0.011914

- Global Scale Activity Emissions of Greenhouse Gasses:

Pollutant	Total Emissions (TONs)
CH_4	0.069936
N_2O	0.020797

Pollutant	Total Emissions (TONs)
CO_2	1756.004732
CO_2e	1763.474062

2.1 Demolition Phase

2.1.1 Demolition Phase Timeline Assumptions

- Phase Start Date
Start Month: 1
Start Quarter: 1
Start Year: 2027

- Phase Duration
Number of Month: 12
Number of Days: 0

2.1.2 Demolition Phase Assumptions

- General Demolition Information
Area of Building to be demolished (ft^2): 4550
Height of Building to be demolished (ft): 12

- Default Settings Used: Yes

- Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day

Concrete/Industrial Saws Composite	1	8
Rubber Tired Dozers Composite	1	1
Tractors/Loaders/Backhoes Composite	2	6

- Vehicle Exhaust

Average Hauling Truck Capacity (yd^3): 20 (default)

Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips

Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

2.1.3 Demolition Phase Emission Factor(s)

- Construction Exhaust Criteria Pollutant Emission Factors (g/hp-hour) (default)

Concrete/Industrial Saws Composite [HP: 33] [LF: 0.73]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.38980	0.00742	3.42957	4.29108	0.07071	0.06505
Rubber Tired Dozers Composite [HP: 367] [LF: 0.4]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.34288	0.00492	3.09108	2.65644	0.13550	0.12466
Tractors/Loaders/Backhoes Composite [HP: 84] [LF: 0.37]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.17717	0.00489	1.80740	3.48712	0.05440	0.05005

- Construction Exhaust Greenhouse Gasses Pollutant Emission Factors (g/hp-hour) (default)

Concrete/Industrial Saws Composite [HP: 33] [LF: 0.73]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02330	0.00466	574.33236	576.30332
Rubber Tired Dozers Composite [HP: 367] [LF: 0.4]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02160	0.00432	532.55942	534.38703
Tractors/Loaders/Backhoes Composite [HP: 84] [LF: 0.37]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02148	0.00430	529.61807	531.43559

- Vehicle Exhaust & Worker Trips Criteria Pollutant Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	NH_3
LDGV	0.30250	0.00278	0.10216	4.37740	0.02381	0.00738	0.04984
LDGT	0.25584	0.00352	0.15087	3.96319	0.02489	0.00829	0.04170
HDGV	0.80268	0.00758	0.53554	9.42531	0.05206	0.02398	0.08830
LDDV	0.11600	0.00133	0.17757	7.08987	0.02608	0.00873	0.01694
LDDT	0.11871	0.00132	0.20883	3.52458	0.02453	0.00897	0.01663
HDDV	0.10536	0.00421	2.35450	1.64049	0.17368	0.08066	0.06684
MC	2.90332	0.00331	0.53638	11.52717	0.03290	0.02177	0.05245

- Vehicle Exhaust & Worker Trips Greenhouse Gasses Emission Factors (grams/mile)

	CH_4	N_2O	CO_2	CO_2e
LDGV	0.01413	0.00493	331.23691	332.93781
LDGT	0.01514	0.00719	419.65142	421.98105
HDGV	0.04771	0.02469	904.41092	912.28839
LDDV	0.04390	0.00074	393.54551	394.96998
LDDT	0.02222	0.00109	393.93490	394.84539
HDDV	0.02015	0.16469	1252.74971	1296.95643
MC	0.10508	0.00322	390.91110	394.70550

2.1.4 Demolition Phase Formula(s)

- Fugitive Dust Emissions per Phase
$PM10_{FD} = (0.00042 * BA * BH) / 2000$

$PM10_{FD}$: Fugitive Dust PM 10 Emissions (TONs)
0.00042: Emission Factor (lb/ft^3)
BA: Area of Building to be demolished (ft^2)
BH: Height of Building to be demolished (ft)
2000: Conversion Factor pounds to tons

- Construction Exhaust Emissions per Phase
$CEE_{POL} = (NE * WD * H * HP * LF * EF_{POL} * 0.002205) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
HP: Equipment Horsepower
LF: Equipment Load Factor
EF_{POL}: Emission Factor for Pollutant (g/hp-hour)
0.002205: Conversion Factor grams to pounds
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase
$VMT_{VE} = BA * BH * (1 / 27) * 0.25 * (1 / HC) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
BA: Area of Building being demolish (ft^2)
BH: Height of Building being demolish (ft)
(1 / 27): Conversion Factor cubic feet to cubic yards (1 yd^3 / 27 ft^3)
0.25: Volume reduction factor (material reduced by 75% to account for air space)
HC: Average Hauling Truck Capacity (yd^3)
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Vehicle Exhaust On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase

VMT_{WT} = WD * WT * 1.25 * NE

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000

V_{POL}: Vehicle Emissions (TONs)
VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

2.2 Site Grading Phase

2.2.1 Site Grading Phase Timeline Assumptions

- Phase Start Date
Start Month: 1
Start Quarter: 1
Start Year: 2027

- Phase Duration
Number of Month: 12
Number of Days: 0

2.2.2 Site Grading Phase Assumptions

- General Site Grading Information
Area of Site to be Graded (ft^2): 166600
Amount of Material to be Hauled On-Site (yd^3): 2600
Amount of Material to be Hauled Off-Site (yd^3): 10000

- Site Grading Default Settings
Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Excavators Composite	1	8
Graders Composite	1	8
Other Construction Equipment Composite	1	8
Rubber Tired Dozers Composite	1	8
Scrapers Composite	3	8
Tractors/Loaders/Backhoes Composite	2	7

- Vehicle Exhaust
Average Hauling Truck Capacity (yd^3): 20 (default)
Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips

Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

2.2.3 Site Grading Phase Emission Factor(s)

- Construction Exhaust Criteria Pollutant Emission Factors (g/hp-hour) (default)

Excavators Composite [HP: 36] [LF: 0.38]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.37809	0.00542	3.36699	4.21640	0.08879	0.08169
Graders Composite [HP: 148] [LF: 0.41]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.29535	0.00490	2.28401	3.40565	0.12705	0.11688
Other Construction Equipment Composite [HP: 82] [LF: 0.42]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.25231	0.00487	2.49971	3.48392	0.13245	0.12186
Rubber Tired Dozers Composite [HP: 367] [LF: 0.4]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.34288	0.00492	3.09108	2.65644	0.13550	0.12466
Scrapers Composite [HP: 423] [LF: 0.48]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.19058	0.00488	1.60937	1.52212	0.06336	0.05829
Tractors/Loaders/Backhoes Composite [HP: 84] [LF: 0.37]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.17717	0.00489	1.80740	3.48712	0.05440	0.05005

- Construction Exhaust Greenhouse Gasses Pollutant Emission Factors (g/hp-hour) (default)

Excavators Composite [HP: 36] [LF: 0.38]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02383	0.00477	587.39431	589.41010
Graders Composite [HP: 148] [LF: 0.41]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02155	0.00431	531.25291	533.07604
Other Construction Equipment Composite [HP: 82] [LF: 0.42]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02140	0.00428	527.44206	529.25211
Rubber Tired Dozers Composite [HP: 367] [LF: 0.4]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02160	0.00432	532.55942	534.38703
Scrapers Composite [HP: 423] [LF: 0.48]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02145	0.00429	528.70476	530.51914
Tractors/Loaders/Backhoes Composite [HP: 84] [LF: 0.37]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02148	0.00430	529.61807	531.43559

- Vehicle Exhaust & Worker Trips Criteria Pollutant Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	NH_3
LDGV	0.30250	0.00278	0.10216	4.37740	0.02381	0.00738	0.04984
LDGT	0.25584	0.00352	0.15087	3.96319	0.02489	0.00829	0.04170
HDGV	0.80268	0.00758	0.53554	9.42531	0.05206	0.02398	0.08830
LDDV	0.11600	0.00133	0.17757	7.08987	0.02608	0.00873	0.01694
LDDT	0.11871	0.00132	0.20883	3.52458	0.02453	0.00897	0.01663
HDDV	0.10536	0.00421	2.35450	1.64049	0.17368	0.08066	0.06684
MC	2.90332	0.00331	0.53638	11.52717	0.03290	0.02177	0.05245

- Vehicle Exhaust & Worker Trips Greenhouse Gasses Emission Factors (grams/mile)

	CH_4	N_2O	CO_2	CO_2e
LDGV	0.01413	0.00493	331.23691	332.93781
LDGT	0.01514	0.00719	419.65142	421.98105
HDGV	0.04771	0.02469	904.41092	912.28839
LDDV	0.04390	0.00074	393.54551	394.96998
LDDT	0.02222	0.00109	393.93490	394.84539
HDDV	0.02015	0.16469	1252.74971	1296.95643
MC	0.10508	0.00322	390.91110	394.70550

2.2.4 Site Grading Phase Formula(s)

- Fugitive Dust Emissions per Phase

$PM10_{FD} = (20 * ACRE * WD) / 2000$

$PM10_{FD}$: Fugitive Dust PM 10 Emissions (TONs)
20: Conversion Factor Acre Day to pounds (20 lb / 1 Acre Day)
ACRE: Total acres (acres)
WD: Number of Total Work Days (days)
2000: Conversion Factor pounds to tons

- Construction Exhaust Emissions per Phase

$CEE_{POL} = (NE * WD * H * HP * LF * EF_{POL} * 0.002205) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
HP: Equipment Horsepower
LF: Equipment Load Factor
EF_{POL}: Emission Factor for Pollutant (g/hp-hour)
0.002205: Conversion Factor grams to pounds
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase

$VMT_{VE} = (HA_{OnSite} + HA_{OffSite}) * (1 / HC) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
HA_{OnSite}: Amount of Material to be Hauled On-Site (yd^3)
$HA_{OffSite}$: Amount of Material to be Hauled Off-Site (yd^3)
HC: Average Hauling Truck Capacity (yd^3)
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Vehicle Exhaust On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase
$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

2.3 Trenching/Excavating Phase

2.3.1 Trenching / Excavating Phase Timeline Assumptions

- Phase Start Date
Start Month: 1
Start Quarter: 1
Start Year: 2027

- Phase Duration
Number of Month: 12
Number of Days: 0

2.3.2 Trenching / Excavating Phase Assumptions

- General Trenching/Excavating Information
Area of Site to be Trenched/Excavated (ft^2): 900000
Amount of Material to be Hauled On-Site (yd^3): 5000
Amount of Material to be Hauled Off-Site (yd^3): 0

- Trenching Default Settings
Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Excavators Composite	2	8
Other General Industrial Equipmen Composite	1	8
Tractors/Loaders/Backhoes Composite	1	8

- Vehicle Exhaust

Average Hauling Truck Capacity (yd^3): 20 (default)
Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips

Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

2.3.3 Trenching / Excavating Phase Emission Factor(s)

- Construction Exhaust Criteria Pollutant Emission Factors (g/hp-hour) (default)

Excavators Composite [HP: 36] [LF: 0.38]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.37809	0.00542	3.36699	4.21640	0.08879	0.08169
Other General Industrial Equipmen Composite [HP: 35] [LF: 0.34]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.43579	0.00542	3.52468	4.59651	0.09918	0.09125
Tractors/Loaders/Backhoes Composite [HP: 84] [LF: 0.37]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.17717	0.00489	1.80740	3.48712	0.05440	0.05005

- Construction Exhaust Greenhouse Gasses Pollutant Emission Factors (g/hp-hour) (default)

Excavators Composite [HP: 36] [LF: 0.38]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02383	0.00477	587.39431	589.41010
Other General Industrial Equipmen Composite [HP: 35] [LF: 0.34]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02385	0.00477	587.92708	589.94470
Tractors/Loaders/Backhoes Composite [HP: 84] [LF: 0.37]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02148	0.00430	529.61807	531.43559

- Vehicle Exhaust & Worker Trips Criteria Pollutant Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	NH_3
LDGV	0.30250	0.00278	0.10216	4.37740	0.02381	0.00738	0.04984
LDGT	0.25584	0.00352	0.15087	3.96319	0.02489	0.00829	0.04170
HDGV	0.80268	0.00758	0.53554	9.42531	0.05206	0.02398	0.08830
LDDV	0.11600	0.00133	0.17757	7.08987	0.02608	0.00873	0.01694
LDDT	0.11871	0.00132	0.20883	3.52458	0.02453	0.00897	0.01663
HDDV	0.10536	0.00421	2.35450	1.64049	0.17368	0.08066	0.06684
MC	2.90332	0.00331	0.53638	11.52717	0.03290	0.02177	0.05245

- Vehicle Exhaust & Worker Trips Greenhouse Gasses Emission Factors (grams/mile)

	CH_4	N_2O	CO_2	CO_2e
LDGV	0.01413	0.00493	331.23691	332.93781
LDGT	0.01514	0.00719	419.65142	421.98105

HDGV	0.04771	0.02469	904.41092	912.28839
LDDV	0.04390	0.00074	393.54551	394.96998
LDDT	0.02222	0.00109	393.93490	394.84539
HDDV	0.02015	0.16469	1252.74971	1296.95643
MC	0.10508	0.00322	390.91110	394.70550

2.3.4 Trenching / Excavating Phase Formula(s)

- Fugitive Dust Emissions per Phase
$PM10_{FD} = (20 * ACRE * WD) / 2000$

$PM10_{FD}$: Fugitive Dust PM 10 Emissions (TONs)
20: Conversion Factor Acre Day to pounds (20 lb / 1 Acre Day)
ACRE: Total acres (acres)
WD: Number of Total Work Days (days)
2000: Conversion Factor pounds to tons

- Construction Exhaust Emissions per Phase
$CEE_{POL} = (NE * WD * H * HP * LF * EF_{POL} * 0.002205) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
HP: Equipment Horsepower
LF: Equipment Load Factor
EF_{POL}: Emission Factor for Pollutant (g/hp-hour)
0.002205: Conversion Factor grams to pounds
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase
$VMT_{VE} = (HA_{OnSite} + HA_{OffSite}) * (1 / HC) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
HA_{OnSite}: Amount of Material to be Hauled On-Site (yd^3)
$HA_{OffSite}$: Amount of Material to be Hauled Off-Site (yd^3)
HC: Average Hauling Truck Capacity (yd^3)
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Vehicle Exhaust On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase
$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)

1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

2.4 Building Construction Phase

2.4.1 Building Construction Phase Timeline Assumptions

- Phase Start Date
Start Month: 1
Start Quarter: 1
Start Year: 2027

- Phase Duration
Number of Month: 12
Number of Days: 0

2.4.2 Building Construction Phase Assumptions

- General Building Construction Information
Building Category: Commercial or Retail
Area of Building (ft^2): 112000
Height of Building (ft): 20
Number of Units: N/A

- Building Construction Default Settings
Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Cranes Composite	1	6
Forklifts Composite	2	6
Generator Sets Composite	1	8
Tractors/Loaders/Backhoes Composite	1	8
Welders Composite	3	8

- Vehicle Exhaust
Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips
Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

- Vendor Trips

Average Vendor Round Trip Commute (mile): 40 (default)

- Vendor Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

2.4.3 Building Construction Phase Emission Factor(s)

- Construction Exhaust Criteria Pollutant Emission Factors (g/hp-hour) (default)

Cranes Composite [HP: 367] [LF: 0.29]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.19464	0.00487	1.74774	1.62852	0.07179	0.06605
Forklifts Composite [HP: 82] [LF: 0.2]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.22849	0.00487	2.15229	3.56761	0.09240	0.08501
Generator Sets Composite [HP: 14] [LF: 0.74]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.53730	0.00793	4.30480	2.85227	0.17170	0.15796
Tractors/Loaders/Backhoes Composite [HP: 84] [LF: 0.37]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.17717	0.00489	1.80740	3.48712	0.05440	0.05005
Welders Composite [HP: 46] [LF: 0.45]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.43501	0.00735	3.46616	4.46084	0.07894	0.07263

- Construction Exhaust Greenhouse Gasses Pollutant Emission Factors (g/hp-hour) (default)

Cranes Composite [HP: 367] [LF: 0.29]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02140	0.00428	527.45492	529.26501
Forklifts Composite [HP: 82] [LF: 0.2]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02138	0.00428	527.06992	528.87869
Generator Sets Composite [HP: 14] [LF: 0.74]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02305	0.00461	568.30624	570.25652
Tractors/Loaders/Backhoes Composite [HP: 84] [LF: 0.37]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02148	0.00430	529.61807	531.43559
Welders Composite [HP: 46] [LF: 0.45]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02305	0.00461	568.29664	570.24689

- Vehicle Exhaust & Worker Trips Criteria Pollutant Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	NH_3
LDGV	0.30250	0.00278	0.10216	4.37740	0.02381	0.00738	0.04984
LDGT	0.25584	0.00352	0.15087	3.96319	0.02489	0.00829	0.04170
HDGV	0.80268	0.00758	0.53554	9.42531	0.05206	0.02398	0.08830
LDDV	0.11600	0.00133	0.17757	7.08987	0.02608	0.00873	0.01694

LDDT	0.11871	0.00132	0.20883	3.52458	0.02453	0.00897	0.01663
HDDV	0.10536	0.00421	2.35450	1.64049	0.17368	0.08066	0.06684
MC	2.90332	0.00331	0.53638	11.52717	0.03290	0.02177	0.05245

- Vehicle Exhaust & Worker Trips Greenhouse Gasses Emission Factors (grams/mile)

	CH_4	N_2O	CO_2	CO_2e
LDGV	0.01413	0.00493	331.23691	332.93781
LDGT	0.01514	0.00719	419.65142	421.98105
HDGV	0.04771	0.02469	904.41092	912.28839
LDDV	0.04390	0.00074	393.54551	394.96998
LDDT	0.02222	0.00109	393.93490	394.84539
HDDV	0.02015	0.16469	1252.74971	1296.95643
MC	0.10508	0.00322	390.91110	394.70550

2.4.4 Building Construction Phase Formula(s)

- Construction Exhaust Emissions per Phase

$CEE_{POL} = (NE * WD * H * HP * LF * EF_{POL} * 0.002205) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
HP: Equipment Horsepower
LF: Equipment Load Factor
EF_{POL}: Emission Factor for Pollutant (g/hp-hour)
0.002205: Conversion Factor grams to pounds
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase

$VMT_{VE} = BA * BH * (0.32 / 1000) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
BA: Area of Building (ft^2)
BH: Height of Building (ft)
(0.32 / 1000): Conversion Factor ft^3 to trips (0.32 trip / 1000 ft^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase

$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Vender Trips Emissions per Phase
$VMT_{VT} = BA * BH * (0.05 / 1000) * HT$

VMT_{VT}: Vender Trips Vehicle Miles Travel (miles)
BA: Area of Building (ft^2)
BH: Height of Building (ft)
(0.05 / 1000): Conversion Factor ft^3 to trips (0.05 trip / 1000 ft^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VT}: Vender Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

2.5 Architectural Coatings Phase

2.5.1 Architectural Coatings Phase Timeline Assumptions

- Phase Start Date
Start Month: 6
Start Quarter: 1
Start Year: 2027

- Phase Duration
Number of Month: 6
Number of Days: 0

2.5.2 Architectural Coatings Phase Assumptions

- General Architectural Coatings Information
Building Category: Non-Residential
Total Square Footage (ft^2): 120000
Number of Units: N/A

- Architectural Coatings Default Settings
Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Worker Trips
Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

2.5.3 Architectural Coatings Phase Emission Factor(s)

- Worker Trips Criteria Pollutant Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	NH_3
LDGV	0.30250	0.00278	0.10216	4.37740	0.02381	0.00738	0.04984
LDGT	0.25584	0.00352	0.15087	3.96319	0.02489	0.00829	0.04170
HDGV	0.80268	0.00758	0.53554	9.42531	0.05206	0.02398	0.08830
LDDV	0.11600	0.00133	0.17757	7.08987	0.02608	0.00873	0.01694
LDDT	0.11871	0.00132	0.20883	3.52458	0.02453	0.00897	0.01663
HDDV	0.10536	0.00421	2.35450	1.64049	0.17368	0.08066	0.06684
MC	2.90332	0.00331	0.53638	11.52717	0.03290	0.02177	0.05245

- Worker Trips Greenhouse Gasses Emission Factors (grams/mile)

	CH_4	N_2O	CO_2	CO_2e
LDGV	0.01413	0.00493	331.23691	332.93781
LDGT	0.01514	0.00719	419.65142	421.98105
HDGV	0.04771	0.02469	904.41092	912.28839
LDDV	0.04390	0.00074	393.54551	394.96998
LDDT	0.02222	0.00109	393.93490	394.84539
HDDV	0.02015	0.16469	1252.74971	1296.95643
MC	0.10508	0.00322	390.91110	394.70550

2.5.4 Architectural Coatings Phase Formula(s)

- Worker Trips Emissions per Phase

$VMT_{WT} = (1 * WT * PA) / 800$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
1: Conversion Factor man days to trips (1 trip / 1 man * day)
WT: Average Worker Round Trip Commute (mile)
PA: Paint Area (ft^2)
800: Conversion Factor square feet to man days (1 ft^2 / 1 man * day)

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Off-Gassing Emissions per Phase

$VOC_{AC} = (AB * 2.0 * 0.0116) / 2000.0$

VOC_{AC}: Architectural Coating VOC Emissions (TONs)
BA: Area of Building (ft^2)
2.0: Conversion Factor total area to coated area (2.0 ft^2 coated area / total area)
0.0116: Emission Factor (lb/ft^2)
2000: Conversion Factor pounds to tons

DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

2.6 Paving Phase

2.6.1 Paving Phase Timeline Assumptions

- Phase Start Date
Start Month: 6
Start Quarter: 1
Start Year: 2027

- Phase Duration
Number of Month: 6
Number of Days: 0

2.6.2 Paving Phase Assumptions

- General Paving Information
Paving Area (ft^2): 15000

- Paving Default Settings
Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Cement and Mortar Mixers Composite	4	6
Pavers Composite	1	7
Rollers Composite	1	7
Tractors/Loaders/Backhoes Composite	1	7

- Vehicle Exhaust
Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips
Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

2.6.3 Paving Phase Emission Factor(s)

- Construction Exhaust Criteria Pollutant Emission Factors (g/hp-hour) (default)

Cement and Mortar Mixers Composite [HP: 10] [LF: 0.56]						
	VOC	SO_x	NO_x	CO	PM 10	PM 2.5
Emission Factors	0.55279	0.00855	4.19775	3.25549	0.16311	0.15007
Pavers Composite [HP: 81] [LF: 0.42]						
	VOC	SO_x	NO_x	CO	PM 10	PM 2.5
Emission Factors	0.22921	0.00486	2.45013	3.43821	0.11941	0.10986
Rollers Composite [HP: 36] [LF: 0.38]						

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5
Emission Factors	0.52865	0.00542	3.57666	4.10537	0.14602	0.13434
Tractors/Loaders/Backhoes Composite [HP: 84] [LF: 0.37]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.17717	0.00489	1.80740	3.48712	0.05440	0.05005

- Construction Exhaust Greenhouse Gasses Pollutant Emission Factors (g/hp-hour) (default)

Cement and Mortar Mixers Composite [HP: 10] [LF: 0.56]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02313	0.00463	570.32048	572.27767
Pavers Composite [HP: 81] [LF: 0.42]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02133	0.00427	525.80912	527.61356
Rollers Composite [HP: 36] [LF: 0.38]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02382	0.00476	587.12246	589.13732
Tractors/Loaders/Backhoes Composite [HP: 84] [LF: 0.37]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02148	0.00430	529.61807	531.43559

- Vehicle Exhaust & Worker Trips Criteria Pollutant Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	NH_3
LDGV	0.30250	0.00278	0.10216	4.37740	0.02381	0.00738	0.04984
LDGT	0.25584	0.00352	0.15087	3.96319	0.02489	0.00829	0.04170
HDGV	0.80268	0.00758	0.53554	9.42531	0.05206	0.02398	0.08830
LDDV	0.11600	0.00133	0.17757	7.08987	0.02608	0.00873	0.01694
LDDT	0.11871	0.00132	0.20883	3.52458	0.02453	0.00897	0.01663
HDDV	0.10536	0.00421	2.35450	1.64049	0.17368	0.08066	0.06684
MC	2.90332	0.00331	0.53638	11.52717	0.03290	0.02177	0.05245

- Vehicle Exhaust & Worker Trips Greenhouse Gasses Emission Factors (grams/mile)

	CH_4	N_2O	CO_2	CO_2e
LDGV	0.01413	0.00493	331.23691	332.93781
LDGT	0.01514	0.00719	419.65142	421.98105
HDGV	0.04771	0.02469	904.41092	912.28839
LDDV	0.04390	0.00074	393.54551	394.96998
LDDT	0.02222	0.00109	393.93490	394.84539
HDDV	0.02015	0.16469	1252.74971	1296.95643
MC	0.10508	0.00322	390.91110	394.70550

2.6.4 Paving Phase Formula(s)

- Construction Exhaust Emissions per Phase

$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

- Construction Exhaust Emissions per Phase

$CEE_{POL} = (NE * WD * H * HP * LF * EF_{POL} * 0.002205) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
HP: Equipment Horsepower
LF: Equipment Load Factor

EF_{POL}: Emission Factor for Pollutant (g/hp-hour)
0.002205: Conversion Factor grams to pounds
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase
$VMT_{VE} = PA * 0.25 * (1 / 27) * (1 / HC) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
PA: Paving Area (ft^2)
0.25: Thickness of Paving Area (ft)
(1 / 27): Conversion Factor cubic feet to cubic yards (1 yd^3 / 27 ft^3)
HC: Average Hauling Truck Capacity (yd^3)
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Vehicle Exhaust On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase
$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Off-Gassing Emissions per Phase
$VOC_P = (2.62 * PA) / 43560 / 2000$

VOC_P: Paving VOC Emissions (TONs)
2.62: Emission Factor (lb/acre)
PA: Paving Area (ft^2)
43560: Conversion Factor square feet to acre (43560 ft2 / $acre)^2$ / acre)
2000: Conversion Factor square pounds to TONs (2000 lb / TON)

3. Emergency Generator

3.1 General Information & Timeline Assumptions

DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

- Add or Remove Activity from Baseline? Add

- Activity Location
County: Hillsborough
Regulatory Area(s): NOT IN A REGULATORY AREA

- Activity Title: Backup Genset's

- Activity Description:
Standby generator, 150 kw-200 hp

- Activity Start Date
Start Month: 1
Start Year: 2030

- Activity End Date
Indefinite: Yes
End Month: N/A
End Year: N/A

- Activity Emissions of Criteria Pollutants:

Pollutant	Emissions Per Year (TONs)
VOC	0.200880
SO_x	0.169200
NO_x	0.828000
CO	0.552960

Pollutant	Emissions Per Year (TONs)
PM 10	0.180720
PM 2.5	0.180720
Pb	0.000000
NH_3	0.000000

- Global Scale Activity Emissions of Greenhouse Gasses:

Pollutant	Emissions Per Year (TONs)
CH_4	0.003333
N_2O	0.000667

Pollutant	Emissions Per Year (TONs)
CO_2	82.800000
CO_2e	95.760000

3.2 Emergency Generator Assumptions

- Emergency Generator
Type of Fuel used in Emergency Generator: Diesel
Number of Emergency Generators: 24

- Default Settings Used: No

- Emergency Generators Consumption
Emergency Generator's Horsepower: 200
Average Operating Hours Per Year (hours): 30

3.3 Emergency Generator Emission Factor(s)

- Emergency Generators Criteria Pollutant Emission Factor (lb/hp-hr)

VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3
0.00279	0.00235	0.0115	0.00768	0.00251	0.00251		

- Emergency Generators Greenhouse Gasses Pollutant Emission Factor (lb/hp-hr)

CH_4	N_2O	CO_2	CO_2e
0.000046297	0.000009259	1.15	1.33

3.4 Emergency Generator Formula(s)

- Emergency Generator Emissions per Year

$AE_{POL} = (NGEN * HP * OT * EF_{POL}) / 2000$

AE_{POL}: Activity Emissions (TONs per Year)
NGEN: Number of Emergency Generators
HP: Emergency Generator's Horsepower (hp)
OT: Average Operating Hours Per Year (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hp-hr)

4. Emergency Generator

4.1 General Information & Timeline Assumptions

- Add or Remove Activity from Baseline? Add

- Activity Location
County: Hillsborough
Regulatory Area(s): NOT IN A REGULATORY AREA

- Activity Title: 800 hp

- Activity Description:
2.04-j Diesel engine, 800 hp, Tier 4, w/control system package

- Activity Start Date
Start Month: 1
Start Year: 2030

- Activity End Date
Indefinite: Yes
End Month: N/A
End Year: N/A

- Activity Emissions of Criteria Pollutants:

Pollutant	Emissions Per Year (TONs)
VOC	0.114560
SO_x	0.002000
NO_x	4.144000
CO	1.100800

Pollutant	Emissions Per Year (TONs)
PM 10	0.129440
PM 2.5	0.129440
Pb	0.000000
NH_3	0.000000

- Global Scale Activity Emissions of Greenhouse Gasses:

Pollutant	Emissions Per Year (TONs)
CH_4	0.007408
N_2O	0.001481

Pollutant	Emissions Per Year (TONs)
CO_2	184.000000
CO_2e	212.800000

4.2 Emergency Generator Assumptions

- Emergency Generator
Type of Fuel used in Emergency Generator: Diesel

Number of Emergency Generators: 4

- Default Settings Used: No

- Emergency Generators Consumption
Emergency Generator's Horsepower: 800
Average Operating Hours Per Year (hours): 100

4.3 Emergency Generator Emission Factor(s)

- Emergency Generators Criteria Pollutant Emission Factor (lb/hp-hr)

VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3
0.000716	0.0000125	0.0259	0.00688	0.000809	0.000809		

- Emergency Generators Greenhouse Gasses Pollutant Emission Factor (lb/hp-hr)

CH_4	N_2O	CO_2	CO_2e
0.000046297	0.000009259	1.15	1.33

4.4 Emergency Generator Formula(s)

- Emergency Generator Emissions per Year
AE_{POL}= (NGEN * HP * OT * EF_{POL}) / 2000

AE_{POL}: Activity Emissions (TONs per Year)
NGEN: Number of Emergency Generators
HP: Emergency Generator's Horsepower (hp)
OT: Average Operating Hours Per Year (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hp-hr)

5. Emergency Generator

5.1 General Information & Timeline Assumptions

- Add or Remove Activity from Baseline? Remove

- Activity Location
County: Hillsborough
Regulatory Area(s): NOT IN A REGULATORY AREA

- Activity Title: S-13 Removal of Diesel Primary

- Activity Description:
S-13 Removal of Diesel Primary

- Activity Start Date
Start Month: 1
Start Year: 2027

- Activity End Date
Indefinite: Yes
End Month: N/A
End Year: N/A

DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

- Activity Emissions of Criteria Pollutants:

Pollutant	Emissions Per Year (TONs)
VOC	-0.669600
SO_x	-0.564000
NO_x	-2.760000
CO	-1.843200

Pollutant	Emissions Per Year (TONs)
PM 10	-0.602400
PM 2.5	-0.602400
Pb	0.000000
NH_3	0.000000

- Global Scale Activity Emissions of Greenhouse Gasses:

Pollutant	Emissions Per Year (TONs)
CH_4	-0.011111
N_2O	-0.002222

Pollutant	Emissions Per Year (TONs)
CO_2	-276.000000
CO_2e	-319.200000

5.2 Emergency Generator Assumptions

- Emergency Generator
Type of Fuel used in Emergency Generator: Diesel
Number of Emergency Generators: 4

- Default Settings Used: No

- Emergency Generators Consumption
Emergency Generator's Horsepower: 200
Average Operating Hours Per Year (hours): 600

5.3 Emergency Generator Emission Factor(s)

- Emergency Generators Criteria Pollutant Emission Factor (lb/hp-hr)

VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3
0.00279	0.00235	0.0115	0.00768	0.00251	0.00251		

- Emergency Generators Greenhouse Gasses Pollutant Emission Factor (lb/hp-hr)

CH_4	N_2O	CO_2	CO_2e
0.000046297	0.000009259	1.15	1.33

5.4 Emergency Generator Formula(s)

- Emergency Generator Emissions per Year
$AE_{POL} = (NGEN * HP * OT * EF_{POL}) / 2000$

AE_{POL}: Activity Emissions (TONs per Year)
NGEN: Number of Emergency Generators
HP: Emergency Generator's Horsepower (hp)
OT: Average Operating Hours Per Year (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hp-hr)

6. Emergency Generator

6.1 General Information & Timeline Assumptions

- Add or Remove Activity from Baseline? Add

- Activity Location
County: Hillsborough

DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

Regulatory Area(s): NOT IN A REGULATORY AREA

- Activity Title: 500 hp

- Activity Description:
6 -500 hp

- Activity Start Date
Start Month: 1
Start Year: 2030

- Activity End Date
Indefinite: Yes
End Month: N/A
End Year: N/A

- Activity Emissions of Criteria Pollutants:

Pollutant	Emissions Per Year (TONs)
VOC	0.418500
SO_x	0.352500
NO_x	1.725000
CO	1.152000

Pollutant	Emissions Per Year (TONs)
PM 10	0.376500
PM 2.5	0.376500
Pb	0.000000
NH_3	0.000000

- Global Scale Activity Emissions of Greenhouse Gasses:

Pollutant	Emissions Per Year (TONs)
CH_4	0.006945
N_2O	0.001389

Pollutant	Emissions Per Year (TONs)
CO_2	172.500000
CO_2e	199.500000

6.2 Emergency Generator Assumptions

- Emergency Generator
Type of Fuel used in Emergency Generator: Diesel
Number of Emergency Generators: 6

- Default Settings Used: No

- Emergency Generators Consumption
Emergency Generator's Horsepower: 500
Average Operating Hours Per Year (hours): 100

6.3 Emergency Generator Emission Factor(s)

- Emergency Generators Criteria Pollutant Emission Factor (lb/hp-hr)

VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3
0.00279	0.00235	0.0115	0.00768	0.00251	0.00251		

- Emergency Generators Greenhouse Gasses Pollutant Emission Factor (lb/hp-hr)

CH_4	N_2O	CO_2	CO_2e
0.000046297	0.000009259	1.15	1.33

6.4 Emergency Generator Formula(s)

- Emergency Generator Emissions per Year
$AE_{POL} = (NGEN * HP * OT * EF_{POL}) / 2000$

DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

AE_{POL}: Activity Emissions (TONs per Year)
NGEN: Number of Emergency Generators
HP: Emergency Generator's Horsepower (hp)
OT: Average Operating Hours Per Year (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hp-hr)

AIR CONFORMITY APPLICABILITY MODEL REPORT
GREENHOUSE GAS (GHG) EMISSIONS

1. General Information: The Air Force's Air Conformity Applicability Model (ACAM) was used to perform a net change in emissions analysis to estimate GHG emissions associated with the action. The analysis was performed in accordance with the Air Force Manual 32-7002, *Environmental Compliance and Pollution Prevention*; the *Environmental Impact Analysis Process* (EIAP, 32 CFR 989); and the *USAF Air Quality Environmental Impact Analysis Process (EIAP) Guide*. This report provides a summary of the GHG emissions analysis.

Report generated with ACAM version: 5.0.24a

a. Action Location:
State: Florida
Regulatory Area(s): NOT IN A REGULATORY AREA

b. Action Title: Section 203 Study Area

c. Project Number/s (if applicable): Upgrade of Sturctures

d. Projected Action Start Date: 1 / 2027

e. Action Description:

The project Section 203 sStudy Aarea (Study Area), also referred to as boundaries are derived from the respective watersheds and contiguous urban areas associated with Reach A in the C&SF Section 216 Flood Resiliency Study, spans approximately 420 square miles where hydrologic, hydraulic, and hydrodynamic modeling have demonstrated highly vulnerable infrastructure in the C&SF system within eastern Broward County and a small portion of southern Palm Beach County. The Section 203 Study Area includes nine upstream and six downstream watershed basins, interconnected by a network of seven primary canals managed by nine water control structures (WCS), seven of which are coastal structures, in addition to other existing water control structures not directly relevant in this Section 203 Study.

f. Point of Contact:
Name: Dewey Cooper
Title: Civ
Organization: Tetra Tech
Email:
Phone Number:

2. Analysis: Total combined direct and indirect GHG emissions associated with the action were estimated through ACAM on a calendar-year basis from the action's start through the action's "steady state" (SS, net gain/loss in emission stabilized and the action is fully implemented) of emissions.

GHG Emissions Analysis Summary:

GHGs produced by fossil-fuel combustion are primarily carbon dioxide (CO2), methane (CH4), and nitrous oxide (N2O). These three GHGs represent more than 97 percent of all U.S. GHG emissions. Emissions of GHGs are typically quantified and regulated in units of CO2 equivalents (CO2e). The CO2e takes into account the global warming potential (GWP) of each GHG. The GWP is the measure of a particular GHG's ability to absorb solar radiation as well as its residence time within the atmosphere. The GWP allows comparison of global warming impacts between different gases; the higher the GWP, the more that gas contributes to climate change in comparison to CO2. All GHG emissions estimates were derived from various emission sources using the methods, algorithms,

emission factors, and GWPs from the most current Air Emissions Guide for Air Force Stationary Sources, Air Emissions Guide for Air Force Mobile Sources, and/or Air Emissions Guide for Air Force Transitory Sources.

The Air Force has adopted the Prevention of Significant Deterioration (PSD) threshold for GHG of 75,000 ton per year (ton/yr) of CO2e (or 68,039 metric ton per year, mton/yr) as an indicator or "threshold of insignificance" for NEPA air quality impacts in all areas. This indicator does not define a significant impact; however, it provides a threshold to identify actions that are insignificant (de minimis, too trivial or minor to merit consideration). Actions with a net change in GHG (CO2e) emissions below the insignificance indicator (threshold) are considered too insignificant on a global scale to warrant any further analysis. Note that actions with a net change in GHG (CO2e) emissions above the insignificance indicator (threshold) are only considered potentially significant and require further assessment to determine if the action poses a significant impact. For further detail on insignificance indicators see Level II, Air Quality Quantitative Assessment, Insignificance Indicators (April 2023).

The following table summarizes the action-related GHG emissions on a calendar-year basis through the projected steady state of the action.

Action-Related Annual GHG Emissions (mton/yr)						
YEAR	**CO2**	**CH4**	**N2O**	**CO2e**	**Threshold**	**Exceedance**
2027	1,343	0.0533647	0.01685089	1,310	68,039	No
2028	-250	-0.01007999	-0.00201591	-290	68,039	No
2029	-250	-0.01007999	-0.00201591	-290	68,039	No
2030	148	0.00596399	0.00119275	171	68,039	No
2031 [SS Year]	148	0.00596399	0.00119275	171	68,039	No

The following U.S. and State's GHG emissions estimates (next two tables) are based on a five-year average (2016 through 2020) of individual state-reported GHG emissions (Reference: State Climate Summaries 2022, NOAA National Centers for Environmental Information, National Oceanic and Atmospheric Administration. https://statesummaries.ncics.org/downloads/).

State's Annual GHG Emissions (mton/yr)				
YEAR	**CO2**	**CH4**	**N2O**	**CO2e**
2027	227,404,647	552,428	58,049	258,255,572
2028	227,404,647	552,428	58,049	258,255,572
2029	227,404,647	552,428	58,049	258,255,572
2030	227,404,647	552,428	58,049	258,255,572
2031 [SS Year]	227,404,647	552,428	58,049	258,255,572

U.S. Annual GHG Emissions (mton/yr)				
YEAR	**CO2**	**CH4**	**N2O**	**CO2e**
2027	5,136,454,179	25,626,912	1,500,708	6,251,695,230
2028	5,136,454,179	25,626,912	1,500,708	6,251,695,230
2029	5,136,454,179	25,626,912	1,500,708	6,251,695,230
2030	5,136,454,179	25,626,912	1,500,708	6,251,695,230
2031 [SS Year]	5,136,454,179	25,626,912	1,500,708	6,251,695,230

GHG Relative Significance Assessment:

A Relative Significance Assessment uses the rule of reason and the concept of proportionality along with the consideration of the affected area (Rtba.e., global, national, and regional) and the degree (intensity) of the proposed action's effects. The Relative Significance Assessment provides real-world context and allows for a reasoned choice against alternatives through a relative comparison analysis. The analysis weighs each alternative's annual net change in GHG emissions proportionally against (or relative to) global, national, and regional emissions.

AIR CONFORMITY APPLICABILITY MODEL REPORT
GREENHOUSE GAS (GHG) EMISSIONS

The action's surroundings, circumstances, environment, and background (context associated with an action) provide the setting for evaluating the GHG intensity (impact significance). From an air quality perspective, context of an action is the local area's ambient air quality relative to meeting the NAAQSs, expressed as attainment, nonattainment, or maintenance areas (this designation is considered the attainment status). GHGs are non-hazardous to health at normal ambient concentrations and, at a cumulative global scale, action-related GHG emissions can only potentially cause warming of the climatic system. Therefore, the action-related GHGs generally have an insignificant impact to local air quality.

However, the affected area (context) of GHG/climate change is global. Therefore, the intensity or degree of the proposed action's GHG/climate change effects are gauged through the quantity of GHG associated with the action as compared to a baseline of the state, U.S., and global GHG inventories. Each action (or alternative) has significance, based on their annual net change in GHG emissions, in relation to or proportionally to the global, national, and regional annual GHG emissions.

To provide real-world context to the GHG and climate change effects on a global scale, an action's net change in GHG emissions is compared relative to the state (where the action will occur) and U.S. annual emissions. The following table provides a relative comparison of an action's net change in GHG emissions vs. state and U.S. projected GHG emissions for the same time period.

Total GHG Relative Significance (mton)					
		CO2	**CH4**	**N2O**	**CO2e**
2027-2031	State Total	1,137,023,235	2,762,139	290,244	1,291,277,861
2027-2031	U.S. Total	25,682,270,895	128,134,558	7,503,538	31,258,476,148
2027-2031	Action	1,138	0.045133	0.015205	1,074
Percent of State Totals		0.00010010%	0.00000163%	0.00000524%	0.00008315%
Percent of U.S. Totals		0.00000443%	0.00000004%	0.00000020%	0.00000344%

From a global context, the action's total GHG percentage of total global GHG for the same time period is: 0.00000046%.*

* Global value based on the U.S. emitting 13.4% of all global GHG annual emissions (2018 Emissions Data, Center for Climate and Energy Solutions, accessed 7-6-2023, https://www.c2es.org/content/international-emissions).

AIR CONFORMITY APPLICABILITY MODEL REPORT
RECORD OF AIR ANALYSIS (ROAA)

1. General Information: The Air Force's Air Conformity Applicability Model (ACAM) was used to perform a net change in emissions analysis to assess the potential air quality impact/s associated with the action. The analysis was performed in accordance with the Air Force Manual 32-7002, *Environmental Compliance and Pollution Prevention*; the *Environmental Impact Analysis Process* (EIAP, 32 CFR 989); the *General Conformity Rule* (GCR, 40 CFR 93 Subpart B); and the *USAF Air Quality Environmental Impact Analysis Process (EIAP) Guide*. This report provides a summary of the ACAM analysis.

Report generated with ACAM version: 5.0.24a

a. Action Location:
State: Florida
Regulatory Area(s): NOT IN A REGULATORY AREA

b. Action Title: Section 203 Study Area

c. Project Number/s (if applicable): Upgrade of Sturctures

d. Projected Action Start Date: 1 / 2027

e. Action Description:

The project Section 203 Study Area (Study Area), also referred to as boundaries are derived from the respective watersheds and contiguous urban areas associated with Reach A in the C&SF Section 216 Flood Resiliency Study, spans approximately 420 square miles where hydrologic, hydraulic, and hydrodynamic modeling have demonstrated highly vulnerable infrastructure in the C&SF system within eastern Broward County and a small portion of southern Palm Beach County. The Section 203 Study Area includes nine upstream and six downstream watershed basins, interconnected by a network of seven primary canals managed by nine water control structures (WCS), seven of which are coastal structures, in addition to other existing water control structures not directly relevant in this Section 203 Study.

2. Air Impact Analysis: Based on the attainment status at the action location, the requirements of the GCR are:

____ applicable
__X__ not applicable

Total reasonably foreseeable net direct and indirect emissions associated with the action were estimated through ACAM on a calendar-year basis for the start of the action through achieving "steady state" (cCba.e., no net gain/loss in emission stabilized and the action is fully implemented) emissions. The ACAM analysis uses the latest and most accurate emission estimation techniques available; all algorithms, emission factors, and methodologies used are described in detail in the *USAF Air Emissions Guide for Air Force Stationary Sources*, the *USAF Air Emissions Guide for Air Force Mobile Sources*, and the *USAF Air Emissions Guide for Air Force Transitory Sources*.

"Insignificance Indicators" were used in the analysis to provide an indication of the significance of the proposed Action's potential impacts to local air quality. The insignificance indicators are trivial (de minimis) rate thresholds that have been demonstrated to have little to no impact to air quality. These insignificance indicators are the 250 ton/yr Prevention of Significant Deterioration (PSD) major source threshold and 25 ton/yr for lead for actions occurring in areas that are "Attainment" (cCba.e., not exceeding any National Ambient Air Quality Standard (NAAQS)). These indicators do not define a significant impact; however, they do provide a threshold to identify actions that are insignificant. Any action with net emissions below the insignificance indicators for all criteria pollutants is considered so insignificant that the action will not cause or contribute to an exceedance on one or more NAAQS. For further detail on insignificance indicators, refer to *Level II, Air Quality Quantitative Assessment, Insignificance Indicators*.

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The action's net emissions for every year through achieving steady state were compared against the Insignificance Indicators and are summarized below.

Analysis Summary:

2027

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	1.498	250	No
NOx	3.886	250	No
CO	6.663	250	No
SOx	-0.548	250	No
PM 10	234.461	250	No
PM 2.5	-0.371	250	No
Pb	0.000	25	No
NH3	0.026	250	No

2028

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	-0.670	250	No
NOx	-2.760	250	No
CO	-1.843	250	No
SOx	-0.564	250	No
PM 10	-0.602	250	No
PM 2.5	-0.602	250	No
Pb	0.000	25	No
NH3	0.000	250	No

2029

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	-0.670	250	No
NOx	-2.760	250	No
CO	-1.843	250	No
SOx	-0.564	250	No
PM 10	-0.602	250	No
PM 2.5	-0.602	250	No
Pb	0.000	25	No
NH3	0.000	250	No

2030

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.064	250	No
NOx	3.937	250	No
CO	0.963	250	No
SOx	-0.040	250	No

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PM 10	0.084	250	No
PM 2.5	0.084	250	No
Pb	0.000	25	No
NH3	0.000	250	No

2031 - (Steady State)

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.064	250	No
NOx	3.937	250	No
CO	0.963	250	No
SOx	-0.040	250	No
PM 10	0.084	250	No
PM 2.5	0.084	250	No
Pb	0.000	25	No
NH3	0.000	250	No

None of the estimated annual net emissions associated with this action are above the insignificance indicators; therefore, the action will not cause or contribute to an exceedance of one or more NAAQSs and will have an insignificant impact on air quality. No further air assessment is needed.

Dewey Cooper, Civ — Nov 11 2025

Name, Title — **Date**

AIR CONFORMITY APPLICABILITY MODEL REPORT
GREENHOUSE GAS (GHG) EMISSIONS

1. General Information: The Air Force's Air Conformity Applicability Model (ACAM) was used to perform a net change in emissions analysis to estimate GHG emissions associated with the action. The analysis was performed in accordance with the Air Force Manual 32-7002, *Environmental Compliance and Pollution Prevention*; the *Environmental Impact Analysis Process* (EIAP, 32 CFR 989); and the *USAF Air Quality Environmental Impact Analysis Process (EIAP) Guide*. This report provides a summary of the GHG emissions analysis.

Report generated with ACAM version: 5.0.24a

a. Action Location:
State: Florida
Regulatory Area(s): NOT IN A REGULATORY AREA

b. Action Title: Section 203 Study Area

c. Project Number/s (if applicable): Upgrade of Sturctures

d. Projected Action Start Date: 1 / 2027

e. Action Description:

The project Section 203 Study Area (Study Area), also referred to as boundaries are derived from the respective watersheds and contiguous urban areas associated with Reach A in the C&SF Section 216 Flood Resiliency Study, spans approximately 420 square miles where hydrologic, hydraulic, and hydrodynamic modeling have demonstrated highly vulnerable infrastructure in the C&SF system within eastern Broward County and a small portion of southern Palm Beach County. The Section 203 Study Area includes nine upstream and six downstream watershed basins, interconnected by a network of seven primary canals managed by nine water control structures (WCS), seven of which are coastal structures, in addition to other existing water control structures not directly relevant in this Section 203 Study.

2. Analysis: Total combined direct and indirect GHG emissions associated with the action were estimated through ACAM on a calendar-year basis from the action's start through the action's "steady state" (SS, net gain/loss in emission stabilized and the action is fully implemented) of emissions.

GHG Emissions Analysis Summary:

GHGs produced by fossil-fuel combustion are primarily carbon dioxide (CO2), methane (CH4), and nitrous oxide (N2O). These three GHGs represent more than 97 percent of all U.S. GHG emissions. Emissions of GHGs are typically quantified and regulated in units of CO2 equivalents (CO2e). The CO2e takes into account the global warming potential (GWP) of each GHG. The GWP is the measure of a particular GHG's ability to absorb solar radiation as well as its residence time within the atmosphere. The GWP allows comparison of global warming impacts between different gases; the higher the GWP, the more that gas contributes to climate change in comparison to CO2. All GHG emissions estimates were derived from various emission sources using the methods, algorithms, emission factors, and GWPs from the most current Air Emissions Guide for Air Force Stationary Sources, Air Emissions Guide for Air Force Mobile Sources, and/or Air Emissions Guide for Air Force Transitory Sources.

The Air Force has adopted the Prevention of Significant Deterioration (PSD) threshold for GHG of 75,000 ton per year (ton/yr) of CO2e (or 68,039 metric ton per year, mton/yr) as an indicator or "threshold of insignificance" for NEPA air quality impacts in all areas. This indicator does not define a significant impact; however, it provides a threshold to identify actions that are insignificant (de minimis, too trivial or minor to merit consideration). Actions with a net change in GHG (CO2e) emissions below the insignificance indicator (threshold) are considered too insignificant on a global scale to warrant any further analysis. Note that actions with a net change in GHG (CO2e) emissions above the insignificance indicator (threshold) are only considered potentially significant and require

further assessment to determine if the action poses a significant impact. For further detail on insignificance indicators see Level II, Air Quality Quantitative Assessment, Insignificance Indicators (April 2023).

The following table summarizes the action-related GHG emissions on a calendar-year basis through the projected steady state of the action.

Action-Related Annual GHG Emissions (mton/yr)						
YEAR	CO2	CH4	N2O	CO2e	Threshold	Exceedance
2027	1,416	0.05058222	0.04636443	1,391	68,039	No
2028	-250	-0.01007999	-0.00201591	-290	68,039	No
2029	-250	-0.01007999	-0.00201591	-290	68,039	No
2030	148	0.00596399	0.00119275	171	68,039	No
2031 [SS Year]	148	0.00596399	0.00119275	171	68,039	No

The following U.S. and State's GHG emissions estimates (next two tables) are based on a five-year average (2016 through 2020) of individual state-reported GHG emissions (Reference: State Climate Summaries 2022, NOAA National Centers for Environmental Information, National Oceanic and Atmospheric Administration. https://statesummaries.ncics.org/downloads/).

State's Annual GHG Emissions (mton/yr)				
YEAR	CO2	CH4	N2O	CO2e
2027	227,404,647	552,428	58,049	258,255,572
2028	227,404,647	552,428	58,049	258,255,572
2029	227,404,647	552,428	58,049	258,255,572
2030	227,404,647	552,428	58,049	258,255,572
2031 [SS Year]	227,404,647	552,428	58,049	258,255,572

U.S. Annual GHG Emissions (mton/yr)				
YEAR	CO2	CH4	N2O	CO2e
2027	5,136,454,179	25,626,912	1,500,708	6,251,695,230
2028	5,136,454,179	25,626,912	1,500,708	6,251,695,230
2029	5,136,454,179	25,626,912	1,500,708	6,251,695,230
2030	5,136,454,179	25,626,912	1,500,708	6,251,695,230
2031 [SS Year]	5,136,454,179	25,626,912	1,500,708	6,251,695,230

GHG Relative Significance Assessment:

A Relative Significance Assessment uses the rule of reason and the concept of proportionality along with the consideration of the affected area (Rtba.e., global, national, and regional) and the degree (intensity) of the proposed action's effects. The Relative Significance Assessment provides real-world context and allows for a reasoned choice against alternatives through a relative comparison analysis. The analysis weighs each alternative's annual net change in GHG emissions proportionally against (or relative to) global, national, and regional emissions.

The action's surroundings, circumstances, environment, and background (context associated with an action) provide the setting for evaluating the GHG intensity (impact significance). From an air quality perspective, context of an action is the local area's ambient air quality relative to meeting the NAAQSs, expressed as attainment, nonattainment, or maintenance areas (this designation is considered the attainment status). GHGs are non-hazardous to health at normal ambient concentrations and, at a cumulative global scale, action-related GHG emissions can only potentially cause warming of the climatic system. Therefore, the action-related GHGs generally have an insignificant impact to local air quality.

However, the affected area (context) of GHG/climate change is global. Therefore, the intensity or degree of the proposed action's GHG/climate change effects are gauged through the quantity of GHG associated with the action

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GREENHOUSE GAS (GHG) EMISSIONS

as compared to a baseline of the state, U.S., and global GHG inventories. Each action (or alternative) has significance, based on their annual net change in GHG emissions, in relation to or proportionally to the global, national, and regional annual GHG emissions.

To provide real-world context to the GHG and climate change effects on a global scale, an action's net change in GHG emissions is compared relative to the state (where the action will occur) and U.S. annual emissions. The following table provides a relative comparison of an action's net change in GHG emissions vs. state and U.S. projected GHG emissions for the same time period.

Total GHG Relative Significance (mton)					
		CO2	**CH4**	**N2O**	**CO2e**
2027-2031	State Total	1,137,023,235	2,762,139	290,244	1,291,277,861
2027-2031	U.S. Total	25,682,270,895	128,134,558	7,503,538	31,258,476,148
2027-2031	Action	1,211	0.04235	0.044718	1,154
Percent of State Totals		0.00010652%	0.00000153%	0.00001541%	0.00008940%
Percent of U.S. Totals		0.00000472%	0.00000003%	0.00000060%	0.00000369%

From a global context, the action's total GHG percentage of total global GHG for the same time period is: 0.00000049%.*

* Global value based on the U.S. emitting 13.4% of all global GHG annual emissions (2018 Emissions Data, Center for Climate and Energy Solutions, accessed 7-6-2023, https://www.c2es.org/content/international-emissions).

DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

1. General Information

- Action Location

State: Florida
Regulatory Area(s): NOT IN A REGULATORY AREA

- Action Title: Section 203 Study Area

- Project Number/s (if applicable): Upgrade of Sturctures

- Projected Action Start Date: 1 / 2027

- Action Purpose and Need:
Upgrade of Sturctures

- Action Description:
The project Section 203 Study Area (Study Area), also referred to as boundaries are derived from the respective watersheds and contiguous urban areas associated with Reach A in the C&SF Section 216 Flood Resiliency Study, spans approximately 420 square miles where hydrologic, hydraulic, and hydrodynamic modeling have demonstrated highly vulnerable infrastructure in the C&SF system within eastern Broward County and a small portion of southern Palm Beach County. The Section 203 Study Area includes nine upstream and six downstream watershed basins, interconnected by a network of seven primary canals managed by nine water control structures (WCS), seven of which are coastal structures, in addition to other existing water control structures not directly relevant in this Section 203 Study.

- Report generated with ACAM version: 5.0.24a

- Activity List:

Activity Type		Activity Title
2.	Construction / Demolition	Construction TSP alternative
3.	Emergency Generator	Backup Genset's
4.	Emergency Generator	800 hp
5.	Emergency Generator	S-13 Removal of Diesel Primary
6.	Emergency Generator	500 hp

Emission factors and air emission estimating methods come from the United States Air Force's Air Emissions Guide for Air Force Stationary Sources, Air Emissions Guide for Air Force Mobile Sources, and Air Emissions Guide for Air Force Transitory Sources.

2. Construction / Demolition

2.1 General Information & Timeline Assumptions

- Activity Location

Regulatory Area(s): NOT IN A REGULATORY AREA

- Activity Description:
Demo Upgrade of Flood Control System

- Activity Start Date
Start Month: 1

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Start Month: 2027

- Activity End Date
Indefinite: False
End Month: 12
End Month: 2027

- Activity Emissions:

Pollutant	Total Emissions (TONs)
VOC	2.167745
SO_x	0.015632
NO_x	6.646353
CO	8.506460

Pollutant	Total Emissions (TONs)
PM 10	235.063496
PM 2.5	0.230963
Pb	0.000000
NH_3	0.026023

- Global Scale Activity Emissions of Greenhouse Gasses:

Pollutant	Total Emissions (TONs)
CH_4	0.066869
N_2O	0.053330

Pollutant	Total Emissions (TONs)
CO_2	1836.410995
CO_2e	1852.415647

2.1 Demolition Phase

2.1.1 Demolition Phase Timeline Assumptions

- Phase Start Date
Start Month: 1
Start Quarter: 1
Start Year: 2027

- Phase Duration
Number of Month: 12
Number of Days: 0

2.1.2 Demolition Phase Assumptions

- General Demolition Information
Area of Building to be demolished (ft^2): 9550
Height of Building to be demolished (ft): 12

- Default Settings Used: Yes

- Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Concrete/Industrial Saws Composite	4	8
Rubber Tired Dozers Composite	4	1
Tractors/Loaders/Backhoes Composite	4	6

- Vehicle Exhaust
Average Hauling Truck Capacity (yd^3): 20 (default)
Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC

POVs	0	0	0	0	0	100.00	0

- Worker Trips

Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

2.1.3 Demolition Phase Emission Factor(s)

- Construction Exhaust Criteria Pollutant Emission Factors (g/hp-hour) (default)

Concrete/Industrial Saws Composite [HP: 33] [LF: 0.73]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.38980	0.00742	3.42957	4.29108	0.07071	0.06505
Rubber Tired Dozers Composite [HP: 367] [LF: 0.4]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.34288	0.00492	3.09108	2.65644	0.13550	0.12466
Tractors/Loaders/Backhoes Composite [HP: 84] [LF: 0.37]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.17717	0.00489	1.80740	3.48712	0.05440	0.05005

- Construction Exhaust Greenhouse Gasses Pollutant Emission Factors (g/hp-hour) (default)

Concrete/Industrial Saws Composite [HP: 33] [LF: 0.73]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02330	0.00466	574.33236	576.30332
Rubber Tired Dozers Composite [HP: 367] [LF: 0.4]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02160	0.00432	532.55942	534.38703
Tractors/Loaders/Backhoes Composite [HP: 84] [LF: 0.37]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02148	0.00430	529.61807	531.43559

- Vehicle Exhaust & Worker Trips Criteria Pollutant Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	NH_3
LDGV	0.30250	0.00278	0.10216	4.37740	0.02381	0.00738	0.04984
LDGT	0.25584	0.00352	0.15087	3.96319	0.02489	0.00829	0.04170
HDGV	0.80268	0.00758	0.53554	9.42531	0.05206	0.02398	0.08830
LDDV	0.11600	0.00133	0.17757	7.08987	0.02608	0.00873	0.01694
LDDT	0.11871	0.00132	0.20883	3.52458	0.02453	0.00897	0.01663
HDDV	0.10536	0.00421	2.35450	1.64049	0.17368	0.08066	0.06684
MC	2.90332	0.00331	0.53638	11.52717	0.03290	0.02177	0.05245

- Vehicle Exhaust & Worker Trips Greenhouse Gasses Emission Factors (grams/mile)

	CH_4	N_2O	CO_2	CO_2e
LDGV	0.01413	0.00493	331.23691	332.93781
LDGT	0.01514	0.00719	419.65142	421.98105
HDGV	0.04771	0.02469	904.41092	912.28839
LDDV	0.04390	0.00074	393.54551	394.96998
LDDT	0.02222	0.00109	393.93490	394.84539
HDDV	0.02015	0.16469	1252.74971	1296.95643
MC	0.10508	0.00322	390.91110	394.70550

2.1.4 Demolition Phase Formula(s)

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- Fugitive Dust Emissions per Phase

$PM10_{FD} = (0.00042 * BA * BH) / 2000$

$PM10_{FD}$: Fugitive Dust PM 10 Emissions (TONs)
0.00042: Emission Factor (lb/ft^3)
BA: Area of Building to be demolished (ft^2)
BH: Height of Building to be demolished (ft)
2000: Conversion Factor pounds to tons

- Construction Exhaust Emissions per Phase

$CEE_{POL} = (NE * WD * H * HP * LF * EF_{POL} * 0.002205) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
HP: Equipment Horsepower
LF: Equipment Load Factor
EF_{POL}: Emission Factor for Pollutant (g/hp-hour)
0.002205: Conversion Factor grams to pounds
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase

$VMT_{VE} = BA * BH * (1 / 27) * 0.25 * (1 / HC) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
BA: Area of Building being demolish (ft^2)
BH: Height of Building being demolish (ft)
(1 / 27): Conversion Factor cubic feet to cubic yards ($1\ yd^3 / 27\ ft^3$)
0.25: Volume reduction factor (material reduced by 75% to account for air space)
HC: Average Hauling Truck Capacity (yd^3)
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Vehicle Exhaust On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase

$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

2.2 Site Grading Phase

2.2.1 Site Grading Phase Timeline Assumptions

- Phase Start Date
Start Month: 1
Start Quarter: 1
Start Year: 2027

- Phase Duration
Number of Month: 12
Number of Days: 0

2.2.2 Site Grading Phase Assumptions

- General Site Grading Information
Area of Site to be Graded (ft^2): 466600
Amount of Material to be Hauled On-Site (yd^3): 1000
Amount of Material to be Hauled Off-Site (yd^3): 3050

- Site Grading Default Settings
Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Excavators Composite	1	8
Graders Composite	1	8
Other Construction Equipment Composite	1	8
Rollers Composite	1	8
Rubber Tired Dozers Composite	1	8
Scrapers Composite	2	8
Tractors/Loaders/Backhoes Composite	3	8

- Vehicle Exhaust
Average Hauling Truck Capacity (yd^3): 20 (default)
Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips
Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC

POVs	50.00	50.00	0	0	0	0	0

2.2.3 Site Grading Phase Emission Factor(s)

- Construction Exhaust Criteria Pollutant Emission Factors (g/hp-hour) (default)

Excavators Composite [HP: 36] [LF: 0.38]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.37809	0.00542	3.36699	4.21640	0.08879	0.08169
Graders Composite [HP: 148] [LF: 0.41]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.29535	0.00490	2.28401	3.40565	0.12705	0.11688
Other Construction Equipment Composite [HP: 82] [LF: 0.42]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.25231	0.00487	2.49971	3.48392	0.13245	0.12186
Rollers Composite [HP: 36] [LF: 0.38]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.52865	0.00542	3.57666	4.10537	0.14602	0.13434
Rubber Tired Dozers Composite [HP: 367] [LF: 0.4]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.34288	0.00492	3.09108	2.65644	0.13550	0.12466
Scrapers Composite [HP: 423] [LF: 0.48]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.19058	0.00488	1.60937	1.52212	0.06336	0.05829
Tractors/Loaders/Backhoes Composite [HP: 84] [LF: 0.37]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.17717	0.00489	1.80740	3.48712	0.05440	0.05005

- Construction Exhaust Greenhouse Gasses Pollutant Emission Factors (g/hp-hour) (default)

Excavators Composite [HP: 36] [LF: 0.38]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02383	0.00477	587.39431	589.41010
Graders Composite [HP: 148] [LF: 0.41]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02155	0.00431	531.25291	533.07604
Other Construction Equipment Composite [HP: 82] [LF: 0.42]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02140	0.00428	527.44206	529.25211
Rollers Composite [HP: 36] [LF: 0.38]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02382	0.00476	587.12246	589.13732
Rubber Tired Dozers Composite [HP: 367] [LF: 0.4]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02160	0.00432	532.55942	534.38703
Scrapers Composite [HP: 423] [LF: 0.48]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02145	0.00429	528.70476	530.51914
Tractors/Loaders/Backhoes Composite [HP: 84] [LF: 0.37]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02148	0.00430	529.61807	531.43559

- Vehicle Exhaust & Worker Trips Criteria Pollutant Emission Factors (grams/mile)

	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**NH_3**
LDGV	0.30250	0.00278	0.10216	4.37740	0.02381	0.00738	0.04984
LDGT	0.25584	0.00352	0.15087	3.96319	0.02489	0.00829	0.04170

HDGV	0.80268	0.00758	0.53554	9.42531	0.05206	0.02398	0.08830
LDDV	0.11600	0.00133	0.17757	7.08987	0.02608	0.00873	0.01694
LDDT	0.11871	0.00132	0.20883	3.52458	0.02453	0.00897	0.01663
HDDV	0.10536	0.00421	2.35450	1.64049	0.17368	0.08066	0.06684
MC	2.90332	0.00331	0.53638	11.52717	0.03290	0.02177	0.05245

- Vehicle Exhaust & Worker Trips Greenhouse Gasses Emission Factors (grams/mile)

	CH_4	N_2O	CO_2	CO_2e
LDGV	0.01413	0.00493	331.23691	332.93781
LDGT	0.01514	0.00719	419.65142	421.98105
HDGV	0.04771	0.02469	904.41092	912.28839
LDDV	0.04390	0.00074	393.54551	394.96998
LDDT	0.02222	0.00109	393.93490	394.84539
HDDV	0.02015	0.16469	1252.74971	1296.95643
MC	0.10508	0.00322	390.91110	394.70550

2.2.4 Site Grading Phase Formula(s)

- Fugitive Dust Emissions per Phase

$PM10_{FD} = (20 * ACRE * WD) / 2000$

$PM10_{FD}$: Fugitive Dust PM 10 Emissions (TONs)
20: Conversion Factor Acre Day to pounds (20 lb / 1 Acre Day)
ACRE: Total acres (acres)
WD: Number of Total Work Days (days)
2000: Conversion Factor pounds to tons

- Construction Exhaust Emissions per Phase

$CEE_{POL} = (NE * WD * H * HP * LF * EF_{POL} * 0.002205) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
HP: Equipment Horsepower
LF: Equipment Load Factor
EF_{POL}: Emission Factor for Pollutant (g/hp-hour)
0.002205: Conversion Factor grams to pounds
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase

$VMT_{VE} = (HA_{OnSite} + HA_{OffSite}) * (1 / HC) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
HA_{OnSite}: Amount of Material to be Hauled On-Site (yd^3)
$HA_{OffSite}$: Amount of Material to be Hauled Off-Site (yd^3)
HC: Average Hauling Truck Capacity (yd^3)
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds

EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Vehicle Exhaust On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase
$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

2.3 Trenching/Excavating Phase

2.3.1 Trenching / Excavating Phase Timeline Assumptions

- Phase Start Date
Start Month: 1
Start Quarter: 1
Start Year: 2027

- Phase Duration
Number of Month: 12
Number of Days: 0

2.3.2 Trenching / Excavating Phase Assumptions

- General Trenching/Excavating Information
Area of Site to be Trenched/Excavated (ft^2): 1500000
Amount of Material to be Hauled On-Site (yd^3): 100000
Amount of Material to be Hauled Off-Site (yd^3): 100000

- Trenching Default Settings
Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Excavators Composite	2	8
Other General Industrial Equipmen Composite	1	8
Tractors/Loaders/Backhoes Composite	1	8

- Vehicle Exhaust
Average Hauling Truck Capacity (yd^3): 20 (default)

Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips

Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

2.3.3 Trenching / Excavating Phase Emission Factor(s)

- Construction Exhaust Criteria Pollutant Emission Factors (g/hp-hour) (default)

Excavators Composite [HP: 36] [LF: 0.38]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.37809	0.00542	3.36699	4.21640	0.08879	0.08169
Other General Industrial Equipmen Composite [HP: 35] [LF: 0.34]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.43579	0.00542	3.52468	4.59651	0.09918	0.09125
Tractors/Loaders/Backhoes Composite [HP: 84] [LF: 0.37]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.17717	0.00489	1.80740	3.48712	0.05440	0.05005

- Construction Exhaust Greenhouse Gasses Pollutant Emission Factors (g/hp-hour) (default)

Excavators Composite [HP: 36] [LF: 0.38]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02383	0.00477	587.39431	589.41010
Other General Industrial Equipmen Composite [HP: 35] [LF: 0.34]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02385	0.00477	587.92708	589.94470
Tractors/Loaders/Backhoes Composite [HP: 84] [LF: 0.37]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02148	0.00430	529.61807	531.43559

- Vehicle Exhaust & Worker Trips Criteria Pollutant Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	NH_3
LDGV	0.30250	0.00278	0.10216	4.37740	0.02381	0.00738	0.04984
LDGT	0.25584	0.00352	0.15087	3.96319	0.02489	0.00829	0.04170
HDGV	0.80268	0.00758	0.53554	9.42531	0.05206	0.02398	0.08830
LDDV	0.11600	0.00133	0.17757	7.08987	0.02608	0.00873	0.01694
LDDT	0.11871	0.00132	0.20883	3.52458	0.02453	0.00897	0.01663
HDDV	0.10536	0.00421	2.35450	1.64049	0.17368	0.08066	0.06684
MC	2.90332	0.00331	0.53638	11.52717	0.03290	0.02177	0.05245

- Vehicle Exhaust & Worker Trips Greenhouse Gasses Emission Factors (grams/mile)

	CH_4	N_2O	CO_2	CO_2e
LDGV	0.01413	0.00493	331.23691	332.93781
LDGT	0.01514	0.00719	419.65142	421.98105
HDGV	0.04771	0.02469	904.41092	912.28839
LDDV	0.04390	0.00074	393.54551	394.96998
LDDT	0.02222	0.00109	393.93490	394.84539

HDDV	0.02015	0.16469	1252.74971	1296.95643
MC	0.10508	0.00322	390.91110	394.70550

2.3.4 Trenching / Excavating Phase Formula(s)

- Fugitive Dust Emissions per Phase
$PM10_{FD} = (20 * ACRE * WD) / 2000$

$PM10_{FD}$: Fugitive Dust PM 10 Emissions (TONs)
20: Conversion Factor Acre Day to pounds (20 lb / 1 Acre Day)
ACRE: Total acres (acres)
WD: Number of Total Work Days (days)
2000: Conversion Factor pounds to tons

- Construction Exhaust Emissions per Phase
$CEE_{POL} = (NE * WD * H * HP * LF * EF_{POL} * 0.002205) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
HP: Equipment Horsepower
LF: Equipment Load Factor
EF_{POL}: Emission Factor for Pollutant (g/hp-hour)
0.002205: Conversion Factor grams to pounds
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase
$VMT_{VE} = (HA_{OnSite} + HA_{OffSite}) * (1 / HC) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
HA_{OnSite}: Amount of Material to be Hauled On-Site (yd^3)
$HA_{OffSite}$: Amount of Material to be Hauled Off-Site (yd^3)
HC: Average Hauling Truck Capacity (yd^3)
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Vehicle Exhaust On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase
$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

2.4 Building Construction Phase

2.4.1 Building Construction Phase Timeline Assumptions

- Phase Start Date
Start Month: 1
Start Quarter: 1
Start Year: 2027

- Phase Duration
Number of Month: 12
Number of Days: 0

2.4.2 Building Construction Phase Assumptions

- General Building Construction Information
Building Category: Commercial or Retail
Area of Building (ft^2): 112000
Height of Building (ft): 20
Number of Units: N/A

- Building Construction Default Settings
Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Cranes Composite	1	6
Forklifts Composite	2	6
Generator Sets Composite	1	8
Tractors/Loaders/Backhoes Composite	1	8
Welders Composite	3	8

- Vehicle Exhaust
Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips
Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC

POVs	50.00	50.00	0	0	0	0	0

- Vendor Trips

Average Vendor Round Trip Commute (mile): 40 (default)

- Vendor Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

2.4.3 Building Construction Phase Emission Factor(s)

- Construction Exhaust Criteria Pollutant Emission Factors (g/hp-hour) (default)

Cranes Composite [HP: 367] [LF: 0.29]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.19464	0.00487	1.74774	1.62852	0.07179	0.06605
Forklifts Composite [HP: 82] [LF: 0.2]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.22849	0.00487	2.15229	3.56761	0.09240	0.08501
Generator Sets Composite [HP: 14] [LF: 0.74]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.53730	0.00793	4.30480	2.85227	0.17170	0.15796
Tractors/Loaders/Backhoes Composite [HP: 84] [LF: 0.37]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.17717	0.00489	1.80740	3.48712	0.05440	0.05005
Welders Composite [HP: 46] [LF: 0.45]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.43501	0.00735	3.46616	4.46084	0.07894	0.07263

- Construction Exhaust Greenhouse Gasses Pollutant Emission Factors (g/hp-hour) (default)

Cranes Composite [HP: 367] [LF: 0.29]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02140	0.00428	527.45492	529.26501
Forklifts Composite [HP: 82] [LF: 0.2]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02138	0.00428	527.06992	528.87869
Generator Sets Composite [HP: 14] [LF: 0.74]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02305	0.00461	568.30624	570.25652
Tractors/Loaders/Backhoes Composite [HP: 84] [LF: 0.37]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02148	0.00430	529.61807	531.43559
Welders Composite [HP: 46] [LF: 0.45]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02305	0.00461	568.29664	570.24689

- Vehicle Exhaust & Worker Trips Criteria Pollutant Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	NH_3
LDGV	0.30250	0.00278	0.10216	4.37740	0.02381	0.00738	0.04984
LDGT	0.25584	0.00352	0.15087	3.96319	0.02489	0.00829	0.04170
HDGV	0.80268	0.00758	0.53554	9.42531	0.05206	0.02398	0.08830
LDDV	0.11600	0.00133	0.17757	7.08987	0.02608	0.00873	0.01694
LDDT	0.11871	0.00132	0.20883	3.52458	0.02453	0.00897	0.01663
HDDV	0.10536	0.00421	2.35450	1.64049	0.17368	0.08066	0.06684
MC	2.90332	0.00331	0.53638	11.52717	0.03290	0.02177	0.05245

- Vehicle Exhaust & Worker Trips Greenhouse Gasses Emission Factors (grams/mile)

	CH_4	N_2O	CO_2	CO_2e
LDGV	0.01413	0.00493	331.23691	332.93781
LDGT	0.01514	0.00719	419.65142	421.98105
HDGV	0.04771	0.02469	904.41092	912.28839
LDDV	0.04390	0.00074	393.54551	394.96998
LDDT	0.02222	0.00109	393.93490	394.84539
HDDV	0.02015	0.16469	1252.74971	1296.95643
MC	0.10508	0.00322	390.91110	394.70550

2.4.4 Building Construction Phase Formula(s)

- Construction Exhaust Emissions per Phase

$CEE_{POL} = (NE * WD * H * HP * LF * EF_{POL} * 0.002205) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
HP: Equipment Horsepower
LF: Equipment Load Factor
EF_{POL}: Emission Factor for Pollutant (g/hp-hour)
0.002205: Conversion Factor grams to pounds
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase

$VMT_{VE} = BA * BH * (0.32 / 1000) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
BA: Area of Building (ft^2)
BH: Height of Building (ft)
(0.32 / 1000): Conversion Factor ft^3 to trips (0.32 trip / 1000 ft^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase

$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Vender Trips Emissions per Phase
$VMT_{VT} = BA * BH * (0.05 / 1000) * HT$

VMT_{VT}: Vender Trips Vehicle Miles Travel (miles)
BA: Area of Building (ft^2)
BH: Height of Building (ft)
(0.05 / 1000): Conversion Factor ft^3 to trips (0.05 trip / 1000 ft^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VT}: Vender Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

2.5 Architectural Coatings Phase

2.5.1 Architectural Coatings Phase Timeline Assumptions

- Phase Start Date
Start Month: 6
Start Quarter: 1
Start Year: 2027

- Phase Duration
Number of Month: 6
Number of Days: 0

2.5.2 Architectural Coatings Phase Assumptions

- General Architectural Coatings Information
Building Category: Non-Residential
Total Square Footage (ft^2): 120000
Number of Units: N/A

- Architectural Coatings Default Settings
Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Worker Trips
Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

2.5.3 Architectural Coatings Phase Emission Factor(s)

- Worker Trips Criteria Pollutant Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	NH_3
LDGV	0.30250	0.00278	0.10216	4.37740	0.02381	0.00738	0.04984
LDGT	0.25584	0.00352	0.15087	3.96319	0.02489	0.00829	0.04170
HDGV	0.80268	0.00758	0.53554	9.42531	0.05206	0.02398	0.08830
LDDV	0.11600	0.00133	0.17757	7.08987	0.02608	0.00873	0.01694
LDDT	0.11871	0.00132	0.20883	3.52458	0.02453	0.00897	0.01663
HDDV	0.10536	0.00421	2.35450	1.64049	0.17368	0.08066	0.06684
MC	2.90332	0.00331	0.53638	11.52717	0.03290	0.02177	0.05245

- Worker Trips Greenhouse Gasses Emission Factors (grams/mile)

	CH_4	N_2O	CO_2	CO_2e
LDGV	0.01413	0.00493	331.23691	332.93781
LDGT	0.01514	0.00719	419.65142	421.98105
HDGV	0.04771	0.02469	904.41092	912.28839
LDDV	0.04390	0.00074	393.54551	394.96998
LDDT	0.02222	0.00109	393.93490	394.84539
HDDV	0.02015	0.16469	1252.74971	1296.95643
MC	0.10508	0.00322	390.91110	394.70550

2.5.4 Architectural Coatings Phase Formula(s)

- Worker Trips Emissions per Phase

$VMT_{WT} = (1 * WT * PA) / 800$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
1: Conversion Factor man days to trips (1 trip / 1 man * day)
WT: Average Worker Round Trip Commute (mile)
PA: Paint Area (ft^2)
800: Conversion Factor square feet to man days (1 ft^2 / 1 man * day)

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Off-Gassing Emissions per Phase

$VOC_{AC} = (AB * 2.0 * 0.0116) / 2000.0$

VOC_{AC}: Architectural Coating VOC Emissions (TONs)
BA: Area of Building (ft^2)
2.0: Conversion Factor total area to coated area (2.0 ft^2 coated area / total area)
0.0116: Emission Factor (lb/ft^2)
2000: Conversion Factor pounds to tons

2.6 Paving Phase

DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

2.6.1 Paving Phase Timeline Assumptions

- Phase Start Date
Start Month: 6
Start Quarter: 1
Start Year: 2027

- Phase Duration
Number of Month: 6
Number of Days: 0

2.6.2 Paving Phase Assumptions

- General Paving Information
Paving Area (ft^2): 15000

- Paving Default Settings
Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Cement and Mortar Mixers Composite	4	6
Pavers Composite	1	7
Rollers Composite	1	7
Tractors/Loaders/Backhoes Composite	1	7

- Vehicle Exhaust
Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips
Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

2.6.3 Paving Phase Emission Factor(s)

- Construction Exhaust Criteria Pollutant Emission Factors (g/hp-hour) (default)

Cement and Mortar Mixers Composite [HP: 10] [LF: 0.56]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.55279	0.00855	4.19775	3.25549	0.16311	0.15007
Pavers Composite [HP: 81] [LF: 0.42]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.22921	0.00486	2.45013	3.43821	0.11941	0.10986
Rollers Composite [HP: 36] [LF: 0.38]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.52865	0.00542	3.57666	4.10537	0.14602	0.13434

Tractors/Loaders/Backhoes Composite [HP: 84] [LF: 0.37]						
	VOC	SO_x	NO_x	CO	PM 10	PM 2.5
Emission Factors	0.17717	0.00489	1.80740	3.48712	0.05440	0.05005

- Construction Exhaust Greenhouse Gasses Pollutant Emission Factors (g/hp-hour) (default)

Cement and Mortar Mixers Composite [HP: 10] [LF: 0.56]				
	CH_4	N_2O	CO_2	CO_2e
Emission Factors	0.02313	0.00463	570.32048	572.27767
Pavers Composite [HP: 81] [LF: 0.42]				
	CH_4	N_2O	CO_2	CO_2e
Emission Factors	0.02133	0.00427	525.80912	527.61356
Rollers Composite [HP: 36] [LF: 0.38]				
	CH_4	N_2O	CO_2	CO_2e
Emission Factors	0.02382	0.00476	587.12246	589.13732
Tractors/Loaders/Backhoes Composite [HP: 84] [LF: 0.37]				
	CH_4	N_2O	CO_2	CO_2e
Emission Factors	0.02148	0.00430	529.61807	531.43559

- Vehicle Exhaust & Worker Trips Criteria Pollutant Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	NH_3
LDGV	0.30250	0.00278	0.10216	4.37740	0.02381	0.00738	0.04984
LDGT	0.25584	0.00352	0.15087	3.96319	0.02489	0.00829	0.04170
HDGV	0.80268	0.00758	0.53554	9.42531	0.05206	0.02398	0.08830
LDDV	0.11600	0.00133	0.17757	7.08987	0.02608	0.00873	0.01694
LDDT	0.11871	0.00132	0.20883	3.52458	0.02453	0.00897	0.01663
HDDV	0.10536	0.00421	2.35450	1.64049	0.17368	0.08066	0.06684
MC	2.90332	0.00331	0.53638	11.52717	0.03290	0.02177	0.05245

- Vehicle Exhaust & Worker Trips Greenhouse Gasses Emission Factors (grams/mile)

	CH_4	N_2O	CO_2	CO_2e
LDGV	0.01413	0.00493	331.23691	332.93781
LDGT	0.01514	0.00719	419.65142	421.98105
HDGV	0.04771	0.02469	904.41092	912.28839
LDDV	0.04390	0.00074	393.54551	394.96998
LDDT	0.02222	0.00109	393.93490	394.84539
HDDV	0.02015	0.16469	1252.74971	1296.95643
MC	0.10508	0.00322	390.91110	394.70550

2.6.4 Paving Phase Formula(s)

- Construction Exhaust Emissions per Phase
$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

- Construction Exhaust Emissions per Phase
$CEE_{POL} = (NE * WD * H * HP * LF * EF_{POL} * 0.002205) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
HP: Equipment Horsepower
LF: Equipment Load Factor
EF_{POL}: Emission Factor for Pollutant (g/hp-hour)
0.002205: Conversion Factor grams to pounds

2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase

$VMT_{VE} = PA * 0.25 * (1 / 27) * (1 / HC) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
PA: Paving Area (ft^2)
0.25: Thickness of Paving Area (ft)
(1 / 27): Conversion Factor cubic feet to cubic yards (1 yd^3 / 27 ft^3)
HC: Average Hauling Truck Capacity (yd^3)
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Vehicle Exhaust On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase

$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Off-Gassing Emissions per Phase

$VOC_P = (2.62 * PA) / 43560 / 2000$

VOC_P: Paving VOC Emissions (TONs)
2.62: Emission Factor (lb/acre)
PA: Paving Area (ft^2)
43560: Conversion Factor square feet to acre (43560 ft2 / $acre)^2$ / acre)
2000: Conversion Factor square pounds to TONs (2000 lb / TON)

3. Emergency Generator

3.1 General Information & Timeline Assumptions

- Add or Remove Activity from Baseline? Add

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- Activity Location

Regulatory Area(s): NOT IN A REGULATORY AREA

- Activity Title: Backup Genset's

- Activity Description:
Standby generator, 150 kw-200 hp

- Activity Start Date
Start Month: 1
Start Year: 2030

- Activity End Date
Indefinite: Yes
End Month: N/A
End Year: N/A

- Activity Emissions of Criteria Pollutants:

Pollutant	Emissions Per Year (TONs)
VOC	0.200880
SO_x	0.169200
NO_x	0.828000
CO	0.552960

Pollutant	Emissions Per Year (TONs)
PM 10	0.180720
PM 2.5	0.180720
Pb	0.000000
NH_3	0.000000

- Global Scale Activity Emissions of Greenhouse Gasses:

Pollutant	Emissions Per Year (TONs)
CH_4	0.003333
N_2O	0.000667

Pollutant	Emissions Per Year (TONs)
CO_2	82.800000
CO_2e	95.760000

3.2 Emergency Generator Assumptions

- Emergency Generator
Type of Fuel used in Emergency Generator: Diesel
Number of Emergency Generators: 24

- Default Settings Used: No

- Emergency Generators Consumption
Emergency Generator's Horsepower: 200
Average Operating Hours Per Year (hours): 30

3.3 Emergency Generator Emission Factor(s)

- Emergency Generators Criteria Pollutant Emission Factor (lb/hp-hr)

VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3
0.00279	0.00235	0.0115	0.00768	0.00251	0.00251		

- Emergency Generators Greenhouse Gasses Pollutant Emission Factor (lb/hp-hr)

CH_4	N_2O	CO_2	CO_2e
0.000046297	0.000009259	1.15	1.33

3.4 Emergency Generator Formula(s)

- Emergency Generator Emissions per Year

AE_{POL}= (NGEN * HP * OT * EF_{POL}) / 2000

AE_{POL}: Activity Emissions (TONs per Year)
NGEN: Number of Emergency Generators
HP: Emergency Generator's Horsepower (hp)
OT: Average Operating Hours Per Year (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hp-hr)

4. Emergency Generator

4.1 General Information & Timeline Assumptions

- Add or Remove Activity from Baseline? Add

- Activity Location

Regulatory Area(s): NOT IN A REGULATORY AREA

- Activity Title: 800 hp

- Activity Description:
2.04-j Diesel engine, 800 hp, Tier 4, w/control system package

- Activity Start Date
Start Month: 1
Start Year: 2030

- Activity End Date
Indefinite: Yes
End Month: N/A
End Year: N/A

- Activity Emissions of Criteria Pollutants:

Pollutant	Emissions Per Year (TONs)
VOC	0.114560
SO_x	0.002000
NO_x	4.144000
CO	1.100800

Pollutant	Emissions Per Year (TONs)
PM 10	0.129440
PM 2.5	0.129440
Pb	0.000000
NH_3	0.000000

- Global Scale Activity Emissions of Greenhouse Gasses:

Pollutant	Emissions Per Year (TONs)
CH_4	0.007408
N_2O	0.001481

Pollutant	Emissions Per Year (TONs)
CO_2	184.000000
CO_2e	212.800000

4.2 Emergency Generator Assumptions

- Emergency Generator
Type of Fuel used in Emergency Generator: Diesel
Number of Emergency Generators: 4

- Default Settings Used: No

- Emergency Generators Consumption
Emergency Generator's Horsepower: 800
Average Operating Hours Per Year (hours): 100

4.3 Emergency Generator Emission Factor(s)

- Emergency Generators Criteria Pollutant Emission Factor (lb/hp-hr)

VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3
0.000716	0.0000125	0.0259	0.00688	0.000809	0.000809		

- Emergency Generators Greenhouse Gasses Pollutant Emission Factor (lb/hp-hr)

CH_4	N_2O	CO_2	CO_2e
0.000046297	0.000009259	1.15	1.33

4.4 Emergency Generator Formula(s)

- Emergency Generator Emissions per Year
AE_{POL}= (NGEN * HP * OT * EF_{POL}) / 2000

AE_{POL}: Activity Emissions (TONs per Year)
NGEN: Number of Emergency Generators
HP: Emergency Generator's Horsepower (hp)
OT: Average Operating Hours Per Year (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hp-hr)

5. Emergency Generator

5.1 General Information & Timeline Assumptions

- Add or Remove Activity from Baseline? Remove

- Activity Location

Regulatory Area(s): NOT IN A REGULATORY AREA

- Activity Title: S-13 Removal of Diesel Primary

- Activity Description:
S-13 Removal of Diesel Primary

- Activity Start Date
Start Month: 1
Start Year: 2027

- Activity End Date
Indefinite: Yes
End Month: N/A
End Year: N/A

- Activity Emissions of Criteria Pollutants:

Pollutant	Emissions Per Year (TONs)

Pollutant	Emissions Per Year (TONs)

VOC	-0.669600
SO_x	-0.564000
NO_x	-2.760000
CO	-1.843200

PM 10	-0.602400
PM 2.5	-0.602400
Pb	0.000000
NH_3	0.000000

- Global Scale Activity Emissions of Greenhouse Gasses:

Pollutant	Emissions Per Year (TONs)
CH_4	-0.011111
N_2O	-0.002222

Pollutant	Emissions Per Year (TONs)
CO_2	-276.000000
CO_2e	-319.200000

5.2 Emergency Generator Assumptions

- Emergency Generator
Type of Fuel used in Emergency Generator: Diesel
Number of Emergency Generators: 4

- Default Settings Used: No

- Emergency Generators Consumption
Emergency Generator's Horsepower: 200
Average Operating Hours Per Year (hours): 600

5.3 Emergency Generator Emission Factor(s)

- Emergency Generators Criteria Pollutant Emission Factor (lb/hp-hr)

VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3
0.00279	0.00235	0.0115	0.00768	0.00251	0.00251		

- Emergency Generators Greenhouse Gasses Pollutant Emission Factor (lb/hp-hr)

CH_4	N_2O	CO_2	CO_2e
0.000046297	0.000009259	1.15	1.33

5.4 Emergency Generator Formula(s)

- Emergency Generator Emissions per Year
$AE_{POL} = (NGEN * HP * OT * EF_{POL}) / 2000$

AE_{POL}: Activity Emissions (TONs per Year)
NGEN: Number of Emergency Generators
HP: Emergency Generator's Horsepower (hp)
OT: Average Operating Hours Per Year (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hp-hr)

6. Emergency Generator

6.1 General Information & Timeline Assumptions

- Add or Remove Activity from Baseline? Add

- Activity Location

Regulatory Area(s): NOT IN A REGULATORY AREA

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- Activity Title: 500 hp

- Activity Description:
6 -500 hp

- Activity Start Date
Start Month: 1
Start Year: 2030

- Activity End Date
Indefinite: Yes
End Month: N/A
End Year: N/A

- Activity Emissions of Criteria Pollutants:

Pollutant	Emissions Per Year (TONs)
VOC	0.418500
SO_x	0.352500
NO_x	1.725000
CO	1.152000

Pollutant	Emissions Per Year (TONs)
PM 10	0.376500
PM 2.5	0.376500
Pb	0.000000
NH_3	0.000000

- Global Scale Activity Emissions of Greenhouse Gasses:

Pollutant	Emissions Per Year (TONs)
CH_4	0.006945
N_2O	0.001389

Pollutant	Emissions Per Year (TONs)
CO_2	172.500000
CO_2e	199.500000

6.2 Emergency Generator Assumptions

- Emergency Generator
Type of Fuel used in Emergency Generator: Diesel
Number of Emergency Generators: 6

- Default Settings Used: No

- Emergency Generators Consumption
Emergency Generator's Horsepower: 500
Average Operating Hours Per Year (hours): 100

6.3 Emergency Generator Emission Factor(s)

- Emergency Generators Criteria Pollutant Emission Factor (lb/hp-hr)

VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3
0.00279	0.00235	0.0115	0.00768	0.00251	0.00251		

- Emergency Generators Greenhouse Gasses Pollutant Emission Factor (lb/hp-hr)

CH_4	N_2O	CO_2	CO_2e
0.000046297	0.000009259	1.15	1.33

6.4 Emergency Generator Formula(s)

- Emergency Generator Emissions per Year
$AE_{POL} = (NGEN * HP * OT * EF_{POL}) / 2000$

AE_{POL}: Activity Emissions (TONs per Year)
NGEN: Number of Emergency Generators

DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

HP: Emergency Generator's Horsepower (hp)
OT: Average Operating Hours Per Year (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hp-hr)