APPENDIX B -

RECORD OF NON-APPLICABILITY

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

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.

a. Action Location:

Base: Fort George Meade
State: Maryland
County(s): Anne Arundel
Regulatory Area(s): Baltimore, MD; Anne Arundel County and Baltimore County, MD

b. Action Title: Department of Defense (DoD) Cyber Crime Center

c. Project Number/s (if applicable):

d. Projected Action Start Date: 1 / 2024

e. Action Description:

PROPOSED ACTION
The Proposed Action includes the construction and operation of a new, approximately 238,800 SF facility within a secured fenced area. Because the DC3 encompasses two major missions, an operations program and an academy program, the building design concept consists of two wings: the operations wing (two four-story buildings and a four-story connector building) and an academy wing (one four-story building and a connector one-story building). The site design also includes a parking structure, landscaping, stormwater management facilities, and utility service connections.

The Proposed Action involves the construction of the headquarters complex on an approximately 33-acre heavily wooded parcel on FMMD. Early conceptual designs also include construction of an access road. The Proposed Action would be constructed in three phases, or "packages".

NO ACTION ALTERNATIVE
Under the No Action Alternative, the Proposed Action would not be implemented. This entails DC3 continuing to use the current leased buildings in Linthicum, Maryland. The No Action Alternative does not address the needs of DC3 to securely consolidate their operations and collaborate with other co-located federal agencies with similar missions. The academy program lacks the classroom space and equipment to conduct investigation and response training for DoD certifications. Leased spaces are also difficult and costly to reconfigure or modify to meet new mission parameters. Further, continued use of the current leased spaces would not meet the DC3's need to comply with the higher command's 2015 directive.

f. Point of Contact:

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Organization: EAS INC
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Phone Number: 651.341.9955

2. Analysis: Total reasonably foreseeable net change in direct and indirect emissions associated with the action were estimated through ACAM on a calendar-year basis for the "worst-case" (highest annual emissions) and "steady state" (no net gain/loss in emission stabilized and the action is fully implemented) emissions. General Conformity under the Clean Air Act, Section 1.76 has been evaluated for the action described above according to the requirements of 40 CFR 93, Subpart B.

All emissions estimates were derived from various sources using the methods, algorithms, and emission factors 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*. For greater details of this analysis, refer to the Detail ACAM Report.

____ applicable
__X__ not applicable

Conformity Analysis Summary:

2024

Pollutant	Action Emissions (ton/yr)	GENERAL CONFORMITY	
		Threshold (ton/yr)	Exceedance (Yes or No)
Baltimore, MD			
VOC	0.516	50	No
NOx	4.277	50	No
CO	5.096		
SOx	0.009		
PM 10	95.967		
PM 2.5	0.160		
Pb	0.000		
NH_3	0.014		
Anne Arundel County and Baltimore County, MD			
VOC	0.516		
NOx	4.277		
CO	5.096		
SOx	0.009	100	No
PM 10	95.967		
PM 2.5	0.160		
Pb	0.000		
NH_3	0.014		

2025

Pollutant	Action Emissions (ton/yr)	GENERAL CONFORMITY	
		Threshold (ton/yr)	Exceedance (Yes or No)
Baltimore, MD			
VOC	3.861	50	No
NOx	3.077	50	No
CO	13.821		
SOx	0.015		
PM 10	0.132		
PM 2.5	0.124		
Pb	0.000		
NH_3	0.092		
Anne Arundel County and Baltimore County, MD			
VOC	3.861		
NOx	3.077		
CO	13.821		
SOx	0.015	100	No
PM 10	0.132		
PM 2.5	0.124		
Pb	0.000		
NH_3	0.092		

2026 - (Steady State)

Pollutant	Action Emissions (ton/yr)	GENERAL CONFORMITY	
		Threshold (ton/yr)	Exceedance (Yes or No)
Baltimore, MD			
VOC	1.387	50	No
NOx	1.717	50	No
CO	18.662		
SOx	0.018		
PM 10	0.093		
PM 2.5	0.090		
Pb	0.000		
NH_3	0.139		
Anne Arundel County and Baltimore County, MD			
VOC	1.387		
NOx	1.717		
CO	18.662		
SOx	0.018	100	No
PM 10	0.093		
PM 2.5	0.090		
Pb	0.000		
NH_3	0.139		

The Criteria Pollutants (or their precursors) with a General Conformity threshold listed in the table above are pollutants within one or more designated nonattainment or maintenance area/s for the associated National Ambient Air Quality Standard (NAAQS). These pollutants are driving this GCR Applicability Analysis. Pollutants exceeding the GCR thresholds must be further evaluated potentially through a GCR Determination.

The pollutants without a General Conformity threshold are pollutants only within areas designated attainment for the associated NAAQS. These pollutants have an insignificance indicator for VOC, NOx, CO, SOx, PM 10, PM 2.5, and NH_3 of 250 ton/yr (Prevention of Significant Deterioration major source threshold) and 25 ton/yr for Pb (GCR de minimis value). Pollutants below their insignificance indicators are at rates so insignificant that they will not cause or contribute to an exceedance of one or more NAAQSs. These indicators do not define a significant impact; however, they do provide a threshold to identify actions that are insignificant. Refer to the *Level II, Air Quality Quantitative Assessment Insignificance Indicators* for further details.

None of the annual net change in estimated emissions associated with this action are above the GCR threshold values established at 40 CFR 93.153 (b); therefore, the proposed Action has an insignificant impact on Air Quality and a General Conformity Determination is not applicable.

Ryan Sauter, Senior Project Manager	Oct 16 2023
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 an analysis to estimate GHG emissions and assess the theoretical Social Cost of Greenhouse Gases (SC GHG) 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 GHG emissions and SC GHG analysis.

a. Action Location:

Base: Fort George Meade
State: Maryland
County(s): Anne Arundel
Regulatory Area(s): Baltimore, MD; Anne Arundel County and Baltimore County, MD

b. Action Title: Department of Defense (DoD) Cyber Crime Center

c. Project Number/s (if applicable):

d. Projected Action Start Date: 1 / 2024

e. Action Description:

PROPOSED ACTION
The Proposed Action includes the construction and operation of a new, approximately 238,800 SF facility within a secured fenced area. Because the DC3 encompasses two major missions, an operations program and an academy program, the building design concept consists of two wings: the operations wing (two four-story buildings and a four-story connector building) and an academy wing (one four-story building and a connector one-story building). The site design also includes a parking structure, sidewalks, landscaping, stormwater management facilities, and utility service connections.

The Proposed Action involves the construction of the headquarters complex on an approximately 33-acre heavily wooded parcel on FMMD. Early conceptual designs also include construction of an access road. The Proposed Action would be constructed in three phases, or "packages".

NO ACTION ALTERNATIVE
Under the No Action Alternative, the Proposed Action would not be implemented. This entails DC3 continuing to use the current leased buildings in Linthicum, Maryland. The No Action Alternative does not address the needs of DC3 to securely consolidate their operations and collaborate with other co-located federal agencies with similar missions. The academy program lacks the classroom space and equipment to conduct investigation and response training for DoD certifications. Leased spaces are also difficult and costly to reconfigure or modify to meet new mission parameters. Further, continued use of the current leased spaces would not meet the DC3's need to comply with the higher command's 2015 directive.

f. Point of Contact:

Name: Ryan Sauter
Title: Senior Project Manager
Organization: EAS INC
Email: ryan.sauter@easbio.coom
Phone Number: 651.341.9955

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 start through the expected life cycle of the action. The life cycle for Air Force actions with "steady state" emissions (SS, net gain/loss in emission stabilized and the action is fully implemented) is assumed to be 10 years beyond the SS emissions year or 20 years beyond SS emissions year for aircraft operations related actions.

GHG Emissions Analysis Summary:

GHGs produced by fossil-fuel combustion are primarily carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O). 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 CO_2 equivalents (CO_2e). The CO_2e 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 CO_2. 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 CO_2e (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 (CO_2e) 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 (CO_2e) 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 life cycle of the action.

Action-Related Annual GHG Emissions (mton/yr)						
YEAR	**CO_2**	**CH_4**	**N_2O**	**CO_2e**	**Threshold**	**Exceedance**
2024	1,013	0.03838016	0.00911959	1,016	68,039	No
2025	2,138	0.07869509	0.03254703	2,147	68,039	No
2026 [SS Year]	2,700	0.10010911	0.0477121	2,712	68,039	No
2027	2,700	0.10010911	0.0477121	2,712	68,039	No
2028	2,700	0.10010911	0.0477121	2,712	68,039	No
2029	2,700	0.10010911	0.0477121	2,712	68,039	No
2030	2,700	0.10010911	0.0477121	2,712	68,039	No
2031	2,700	0.10010911	0.0477121	2,712	68,039	No
2032	2,700	0.10010911	0.0477121	2,712	68,039	No
2033	2,700	0.10010911	0.0477121	2,712	68,039	No
2034	2,700	0.10010911	0.0477121	2,712	68,039	No
2035	2,700	0.10010911	0.0477121	2,712	68,039	No
2036	2,700	0.10010911	0.0477121	2,712	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	**CO_2**	**CH_4**	**N_2O**	**CO_2e**

2024	58,221,463	107,271	6,992	58,335,727
2025	58,221,463	107,271	6,992	58,335,727
2026 [SS Year]	58,221,463	107,271	6,992	58,335,727
2027	58,221,463	107,271	6,992	58,335,727
2028	58,221,463	107,271	6,992	58,335,727
2029	58,221,463	107,271	6,992	58,335,727
2030	58,221,463	107,271	6,992	58,335,727
2031	58,221,463	107,271	6,992	58,335,727
2032	58,221,463	107,271	6,992	58,335,727
2033	58,221,463	107,271	6,992	58,335,727
2034	58,221,463	107,271	6,992	58,335,727
2035	58,221,463	107,271	6,992	58,335,727
2036	58,221,463	107,271	6,992	58,335,727

U.S. Annual GHG Emissions (mton/yr)				
YEAR	**CO_2**	**CH_4**	**N_2O**	**CO_2e**
2024	5,136,454,179	25,626,912	1,500,708	5,163,581,798
2025	5,136,454,179	25,626,912	1,500,708	5,163,581,798
2026 [SS Year]	5,136,454,179	25,626,912	1,500,708	5,163,581,798
2027	5,136,454,179	25,626,912	1,500,708	5,163,581,798
2028	5,136,454,179	25,626,912	1,500,708	5,163,581,798
2029	5,136,454,179	25,626,912	1,500,708	5,163,581,798
2030	5,136,454,179	25,626,912	1,500,708	5,163,581,798
2031	5,136,454,179	25,626,912	1,500,708	5,163,581,798
2032	5,136,454,179	25,626,912	1,500,708	5,163,581,798
2033	5,136,454,179	25,626,912	1,500,708	5,163,581,798
2034	5,136,454,179	25,626,912	1,500,708	5,163,581,798
2035	5,136,454,179	25,626,912	1,500,708	5,163,581,798
2036	5,136,454,179	25,626,912	1,500,708	5,163,581,798

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 (a.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 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)					
		CO_2	CH_4	N_2O	CO_2e
2024-2036	State Total	756,879,023	1,394,526	90,897	758,364,446
2024-2036	U.S. Total	66,773,904,327	333,149,852	19,509,199	67,126,563,378
2024-2036	Action	32,851	1.218275	0.5665	32,996
Percent of State Totals		0.00434032%	0.00008736%	0.00062323%	0.00435096%
Percent of U.S. Totals		0.00004920%	0.00000037%	0.00000290%	0.00004916%

Climate Change Assessment (as SC GHG):

On a global scale, the potential climate change effects of an action are indirectly addressed and put into context through providing the theoretical SC GHG associated with an action. The SC GHG is an administrative and theoretical tool intended to provide additional context to a GHG's potential impacts through approximating the long-term monetary damage that may result from GHG emissions effect on climate change. It is important to note that the SC GHG is a monetary quantification, in 2020 U.S. dollars, of the theoretical economic damages that could result from emitting GHGs into the atmosphere.

The SC GHG estimates are derived using the methodology and discount factors in the "Technical Support Document: Social Cost of Carbon, Methane, and Nitrous Oxide Interim Estimates under Executive Order 13990," released by the Interagency Working Group on Social Cost of Greenhouse Gases (IWG SC GHGs) in February 2021.

The speciated IWG Annual SC GHG Emission associated with an action (or alternative) are first estimated as annual unit cost (cost per metric ton, $/mton). Results of the annual IWG Annual SC GHG Emission Assessments are tabulated in the IWG Annual SC GHG Cost per Metric Ton Table below:

IWG SC GHG Discount Factor: 2.5%

IWG Annual SC GHG Cost per Metric Ton ($/mton [In 2020 $])			
YEAR	CO_2	CH_4	N_2O
2024	$82.00	$2,200.00	$29,000.00
2025	$83.00	$2,200.00	$30,000.00
2026 [SS Year]	$84.00	$2,300.00	$30,000.00
2027	$86.00	$2,300.00	$31,000.00
2028	$87.00	$2,400.00	$32,000.00
2029	$88.00	$2,500.00	$32,000.00
2030	$89.00	$2,500.00	$33,000.00
2031	$91.00	$2,600.00	$33,000.00
2032	$92.00	$2,600.00	$34,000.00
2033	$94.00	$2,700.00	$35,000.00
2034	$95.00	$2,800.00	$35,000.00
2035	$96.00	$2,800.00	$36,000.00
2036	$98.00	$2,900.00	$36,000.00

Action-related SC GHG were estimated by calendar-year for the projected action's lifecycle. Annual estimates were found by multiplying the annual emission for a given year by the corresponding IWG Annual SC GHG Emission value (see table above).

Action-Related Annual SC GHG ($K/yr [In 2020 $])				
YEAR	**CO_2**	**CH_4**	**N_2O**	**GHG**
2024	$83.07	$0.08	$0.26	$83.41
2025	$177.47	$0.17	$0.98	$178.62
2026 [SS Year]	$226.80	$0.23	$1.43	$228.46
2027	$232.20	$0.23	$1.48	$233.91
2028	$234.90	$0.24	$1.53	$236.67
2029	$237.60	$0.25	$1.53	$239.38
2030	$240.30	$0.25	$1.57	$242.12
2031	$245.70	$0.26	$1.57	$247.53
2032	$248.40	$0.26	$1.62	$250.28
2033	$253.80	$0.27	$1.67	$255.74
2034	$256.50	$0.28	$1.67	$258.45
2035	$259.20	$0.28	$1.72	$261.20
2036	$264.60	$0.29	$1.72	$266.61

The following two tables summarize the U.S. and State's Annual SC GHG by calendar-year. The U.S. and State's Annual SC GHG are in 2020 dollars and were estimated by each year for the projected action lifecycle. Annual SC GHG estimates were found by multiplying the U.S. and State's annual five-year average GHG emissions for a given year by the corresponding IWG Annual SC GHG Cost per Metric Ton value.

State's Annual SC GHG ($K/yr [In 2020 $])				
YEAR	**CO_2**	**CH_4**	**N_2O**	**GHG**
2024	$4,774,159.99	$235,996.73	$202,770.16	$5,212,926.88
2025	$4,832,381.45	$235,996.73	$209,762.23	$5,278,140.42
2026 [SS Year]	$4,890,602.92	$246,723.85	$209,762.23	$5,347,089.00
2027	$5,007,045.84	$246,723.85	$216,754.31	$5,470,524.00
2028	$5,065,267.31	$257,450.98	$223,746.38	$5,546,464.67
2029	$5,123,488.77	$268,178.10	$223,746.38	$5,615,413.25
2030	$5,181,710.23	$268,178.10	$230,738.46	$5,680,626.79
2031	$5,298,153.16	$278,905.23	$230,738.46	$5,807,796.84
2032	$5,356,374.62	$278,905.23	$237,730.53	$5,873,010.38
2033	$5,472,817.55	$289,632.35	$244,722.60	$6,007,172.50
2034	$5,531,039.01	$300,359.47	$244,722.60	$6,076,121.09
2035	$5,589,260.48	$300,359.47	$251,714.68	$6,141,334.63
2036	$5,705,703.40	$311,086.60	$251,714.68	$6,268,504.68

U.S. Annual SC GHG ($K/yr [In 2020 $])				
YEAR	**CO_2**	**CH_4**	**N_2O**	**GHG**
2024	$421,189,242.68	$56,379,205.70	$43,520,521.44	$521,088,969.82
2025	$426,325,696.86	$56,379,205.70	$45,021,229.08	$527,726,131.63
2026 [SS Year]	$431,462,151.04	$58,941,896.86	$45,021,229.08	$535,425,276.98
2027	$441,735,059.39	$58,941,896.86	$46,521,936.72	$547,198,892.97
2028	$446,871,513.57	$61,504,588.03	$48,022,644.35	$556,398,745.96
2029	$452,007,967.75	$64,067,279.20	$48,022,644.35	$564,097,891.30
2030	$457,144,421.93	$64,067,279.20	$49,523,351.99	$570,735,053.12
2031	$467,417,330.29	$66,629,970.37	$49,523,351.99	$583,570,652.65
2032	$472,553,784.47	$66,629,970.37	$51,024,059.62	$590,207,814.46
2033	$482,826,692.83	$69,192,661.54	$52,524,767.26	$604,544,121.62
2034	$487,963,147.01	$71,755,352.70	$52,524,767.26	$612,243,266.97
2035	$493,099,601.18	$71,755,352.70	$54,025,474.90	$618,880,428.78
2036	$503,372,509.54	$74,318,043.87	$54,025,474.90	$631,716,028.31

Relative Comparison of SC GHG:

To provide additional real-world context to the potential climate change impact associate with an action, a Relative Comparison of SC GHG Assessment is also performed. While the SC GHG estimates capture an indirect approximation of global climate damages, the Relative Comparison of SC GHG Assessment provides a better perspective from a regional and global scale.

The Relative Comparison of SC GHG Assessment uses the rule of reason and the concept of proportionality along with the consideration of the affected area (a.e., global, national, and regional) and the SC GHG as the degree (intensity) of the proposed action's effects. The Relative Comparison Assessment provides real-world context and allows for a reasoned choice among alternatives through a relative contrast analysis which weighs each alternative's SC GHG proportionally against (or relative to) existing global, national, and regional SC GHG. The below table provides a relative comparison between an action's SC GHG vs. state and U.S. projected SC GHG for the same time period:

Total SC GHG ($K [In 2020 $])					
		CO_2	**CH_4**	**N_2O**	**GHG**
2024-2036	State Total	$67,828,004.75	$3,518,496.68	$2,978,623.70	$74,325,125.14
2024-2036	U.S. Total	$5,983,969,118.54	$840,562,703.10	$639,301,452.94	$7,463,833,274.58
2024-2036	Action	$2,960.52	$3.10	$18.75	$2,982.37
Percent of State Totals		0.00436474%	0.00008812%	0.00062953%	0.00401260%
Percent of U.S. Totals		0.00004947%	0.00000037%	0.00000293%	0.00003996%

From a global context, the action alternative's total SC GHG percentage of total global SC GHG for the same time period is: 0.00000535%.*

* Global value based on the U.S. emits 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).

Ryan Sauter, Senior Project Manager — Oct 16 2023

Name, Title — **Date**

DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

1. General Information

- Action Location

Base: Fort George Meade
State: Maryland
County(s): Anne Arundel
Regulatory Area(s): Baltimore, MD; Anne Arundel County and Baltimore County, MD

- Action Title: Department of Defense (DoD) Cyber Crime Center

- Project Number/s (if applicable):

- Projected Action Start Date: 1 / 2024

- Action Purpose and Need:

The purpose of the Proposed Action is to provide an administrative facility located on FMMD. The Proposed Action is intended to increase collaboration with other agencies with similar missions on FMMD.

The need for the Proposed Action is to facilitate optimal mission performance of the DC3. In 2015 the DC3 was directed by the Secretary of the Air Force to terminate further leasing of commercial facilities and pursue funding for military construction on FMMD. Since 2000, DC3 has leased 105,511 square feet (SF) of space in three separate buildings in Linthicum, Maryland. These leased facilities are aging, lack the proper security, and need upgrades Continued use of the current leased space would conflict with the 2015 directive, require extensive and costly renovations to commercial facilities, and severely limit DC3's collaboration with other agencies with similar missions located on FMMD.

- Action Description:

PROPOSED ACTION
The Proposed Action includes the construction and operation of a new, approximately 238,800 SF facility within a secured fenced area. Because the DC3 encompasses two major missions, an operations program and an academy program, the building design concept consists of two wings: the operations wing (two four-story buildings and a four-story connector building) and an academy wing (one four-story building and a connector one-story building). The site design also includes a parking structure, sidewalks, landscaping, stormwater management facilities, and utility service connections.
The Proposed Action involves the construction of the headquarters complex on an approximately 33-acre heavily wooded parcel on FMMD. Early conceptual designs also include construction of an access roadt. The Proposed Action would be constructed in three phases, or “packages”.

NO ACTION ALTERNATIVE
Under the No Action Alternative, the Proposed Action would not be implemented. This entails DC3 continuing to use the current leased buildings in Linthicum, Maryland. The No Action Alternative does not address the needs of DC3 to securely consolidate their operations and collaborate with other co-located federal agencies with similar missions. The academy program lacks the classroom space and equipment to conduct investigation and response training for DoD certifications. Leased spaces are also difficult and costly to reconfigure or modify to meet new mission parameters. Further, continued use of the current leased spaces would not meet the DC3’s need to comply with the higher command’s 2015 directive.

- Point of Contact

Name: Ryan Sauter
Title: Senior Project Manager
Organization: EAS INC
Email: ryan.sauter@easbio.coom
Phone Number: 651.341.9955

- Activity List:

Activity Type		Activity Title
2.	Construction / Demolition	Grading and Construction of the 238,000 sq ft facility and associated campus
3.	Heating	Add Heating for 1/3 of sq footage
4.	Heating	Add Heating for 1/3 of sq footage
5.	Heating	Add Heating for 1/3 of sq footage
6.	Personnel	Add 1/3 of Personnel
7.	Personnel	Add 1/3 of Personnel
8.	Personnel	Add 1/3 of Personnel

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: Anne Arundel
Regulatory Area(s): Baltimore, MD; Anne Arundel County and Baltimore County, MD

- Activity Title: Grading and Construction of the 238,000 sq ft facility and associated campus

- Activity Description:
Numerical inputs for ACAM modeling consist of the following:
• The total area to be cleared and graded for the project is approximately 36.5 acres.
• The total area to be paved as a roadway, including the access road and perimeter road is approximately 7.3 acres.
• The total area to be paved as a parking lot is approximately 11.7 acres.
• The building to be constructed is a 238,800 sq ft, four-story building with a footprint of approximately 116,000 sq ft.
• Construction will take place over the course of two years.

- Activity Start Date
Start Month: 1
Start Month: 2024

- Activity End Date
Indefinite: False
End Month: 11
End Month: 2025

- Activity Emissions:

Pollutant	Total Emissions (TONs)
VOC	3.442463
SO_x	0.012020
NO_x	6.190777
CO	6.318293

Pollutant	Total Emissions (TONs)
PM 10	96.036183
PM 2.5	0.224115
Pb	0.000000
NH_3	0.012670

- Activity Emissions of GHG:

Pollutant	Total Emissions (TONs)
CH_4	0.054523
N_2O	0.010557

Pollutant	Total Emissions (TONs)
CO_2	1482.438107
CO_2e	1486.946670

- Global Scale Activity Emissions for SCGHG:

Pollutant	Total Emissions (TONs)
CH_4	0.054523
N_2O	0.010557

Pollutant	Total Emissions (TONs)
CO_2	1482.438107
CO_2e	1486.946670

2.1 Site Grading Phase

2.1.1 Site Grading Phase Timeline Assumptions

- Phase Start Date
Start Month: 1
Start Quarter: 1
Start Year: 2024

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

2.1.2 Site Grading Phase Assumptions

- General Site Grading Information
Area of Site to be Graded (ft^2): 1603777
Amount of Material to be Hauled On-Site (yd^3): 16980
Amount of Material to be Hauled Off-Site (yd^3): 16980

- 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	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

2.1.3 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	0.41507	0.00542	3.50127	4.19664	0.11916	0.10962
Graders Composite [HP: 148] [LF: 0.41]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.36076	0.00489	3.17634	3.40450	0.17539	0.16136
Other Construction Equipment Composite [HP: 82] [LF: 0.42]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.34346	0.00488	3.24084	3.56285	0.20853	0.19184
Rubber Tired Dozers Composite [HP: 367] [LF: 0.4]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.40864	0.00491	4.01022	3.25251	0.17852	0.16424
Scrapers Composite [HP: 423] [LF: 0.48]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.22855	0.00488	2.29173	1.71084	0.08854	0.08146
Tractors/Loaders/Backhoes Composite [HP: 84] [LF: 0.37]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.21500	0.00489	2.19159	3.49485	0.09716	0.08939

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

Excavators Composite [HP: 36] [LF: 0.38]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02382	0.00476	587.31685	589.33237
Graders Composite [HP: 148] [LF: 0.41]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02151	0.00430	530.17041	531.98982
Other Construction Equipment Composite [HP: 82] [LF: 0.42]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02144	0.00429	528.45375	530.26726
Rubber Tired Dozers Composite [HP: 367] [LF: 0.4]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02159	0.00432	532.20301	534.02939
Scrapers Composite [HP: 423] [LF: 0.48]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02146	0.00429	528.96796	530.78324
Tractors/Loaders/Backhoes Composite [HP: 84] [LF: 0.37]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02150	0.00430	529.93313	531.75173

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

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	NH_3
LDGV	0.20058	0.00207	0.11315	3.02340	0.00409	0.00362	0.02440
LDGT	0.22039	0.00269	0.19884	3.42810	0.00580	0.00513	0.02611
HDGV	0.87838	0.00602	0.93108	14.20802	0.02458	0.02175	0.05168
LDDV	0.07652	0.00107	0.08589	3.16510	0.00250	0.00230	0.00821
LDDT	0.08424	0.00122	0.13083	2.20761	0.00337	0.00310	0.00856
HDDV	0.13196	0.00424	2.59978	1.60673	0.05080	0.04673	0.03239
MC	2.45845	0.00259	0.66155	12.23901	0.02222	0.01966	0.05327

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

	CH_4	N_2O	CO_2	CO_2e
LDGV	0.01372	0.00484	311.34727	313.13131
LDGT	0.01674	0.00757	404.49114	407.16191
HDGV	0.07388	0.03087	906.90704	917.94156
LDDV	0.04325	0.00069	318.45460	319.73955
LDDT	0.03527	0.00102	364.58988	365.77468
HDDV	0.03080	0.00334	1260.27975	1262.04410
MC	0.12051	0.00307	389.77096	393.69694

2.1.4 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

2.2 Trenching/Excavating Phase

2.2.1 Trenching / Excavating Phase Timeline Assumptions

- Phase Start Date
Start Month: 9
Start Quarter: 1
Start Year: 2024

- Phase Duration
Number of Month: 2
Number of Days: 0

2.2.2 Trenching / Excavating Phase Assumptions

- General Trenching/Excavating Information
Area of Site to be Trenched/Excavated (ft^2): 3350
Amount of Material to be Hauled On-Site (yd^3): 0
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

2.2.3 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	0.41507	0.00542	3.50127	4.19664	0.11916	0.10962
Other General Industrial Equipmen Composite [HP: 35] [LF: 0.34]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.54521	0.00542	3.85582	4.77621	0.16518	0.15196
Tractors/Loaders/Backhoes Composite [HP: 84] [LF: 0.37]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.21500	0.00489	2.19159	3.49485	0.09716	0.08939

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

Excavators Composite [HP: 36] [LF: 0.38]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02382	0.00476	587.31685	589.33237
Other General Industrial Equipmen Composite [HP: 35] [LF: 0.34]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02386	0.00477	588.15144	590.16982
Tractors/Loaders/Backhoes Composite [HP: 84] [LF: 0.37]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02150	0.00430	529.93313	531.75173

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

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	NH_3
LDGV	0.20058	0.00207	0.11315	3.02340	0.00409	0.00362	0.02440
LDGT	0.22039	0.00269	0.19884	3.42810	0.00580	0.00513	0.02611
HDGV	0.87838	0.00602	0.93108	14.20802	0.02458	0.02175	0.05168
LDDV	0.07652	0.00107	0.08589	3.16510	0.00250	0.00230	0.00821
LDDT	0.08424	0.00122	0.13083	2.20761	0.00337	0.00310	0.00856
HDDV	0.13196	0.00424	2.59978	1.60673	0.05080	0.04673	0.03239
MC	2.45845	0.00259	0.66155	12.23901	0.02222	0.01966	0.05327

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

	CH_4	N_2O	CO_2	CO_2e
LDGV	0.01372	0.00484	311.34727	313.13131
LDGT	0.01674	0.00757	404.49114	407.16191
HDGV	0.07388	0.03087	906.90704	917.94156
LDDV	0.04325	0.00069	318.45460	319.73955
LDDT	0.03527	0.00102	364.58988	365.77468
HDDV	0.03080	0.00334	1260.27975	1262.04410
MC	0.12051	0.00307	389.77096	393.69694

2.2.4 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

2.3 Building Construction Phase

2.3.1 Building Construction Phase Timeline Assumptions

- Phase Start Date
Start Month: 6
Start Quarter: 1
Start Year: 2024

- Phase Duration
Number of Month: 18
Number of Days: 0

2.3.2 Building Construction Phase Assumptions

- General Building Construction Information
Building Category: Office or Industrial
Area of Building (ft^2): 238000
Height of Building (ft): 56
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	2	7
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

2.3.3 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	0.21025	0.00487	2.13057	1.68023	0.08573	0.07887
Forklifts Composite [HP: 82] [LF: 0.2]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.29170	0.00487	2.75083	3.61458	0.15732	0.14473
Generator Sets Composite [HP: 14] [LF: 0.74]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.54567	0.00793	4.37292	2.88066	0.17997	0.16558
Tractors/Loaders/Backhoes Composite [HP: 84] [LF: 0.37]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.21500	0.00489	2.19159	3.49485	0.09716	0.08939
Welders Composite [HP: 46] [LF: 0.45]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.53415	0.00735	3.78255	4.55763	0.13078	0.12031

- Construction Exhaust Greenhouse Gases 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	527.53174	529.34210
Forklifts Composite [HP: 82] [LF: 0.2]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02138	0.00428	527.03976	528.84843
Generator Sets Composite [HP: 14] [LF: 0.74]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02305	0.00461	568.31451	570.26482
Tractors/Loaders/Backhoes Composite [HP: 84] [LF: 0.37]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02150	0.00430	529.93313	531.75173
Welders Composite [HP: 46] [LF: 0.45]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02305	0.00461	568.28951	570.23973

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

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	NH_3
LDGV	0.20058	0.00207	0.11315	3.02340	0.00409	0.00362	0.02440
LDGT	0.22039	0.00269	0.19884	3.42810	0.00580	0.00513	0.02611
HDGV	0.87838	0.00602	0.93108	14.20802	0.02458	0.02175	0.05168
LDDV	0.07652	0.00107	0.08589	3.16510	0.00250	0.00230	0.00821
LDDT	0.08424	0.00122	0.13083	2.20761	0.00337	0.00310	0.00856
HDDV	0.13196	0.00424	2.59978	1.60673	0.05080	0.04673	0.03239
MC	2.45845	0.00259	0.66155	12.23901	0.02222	0.01966	0.05327

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

	CH_4	N_2O	CO_2	CO_2e
LDGV	0.01372	0.00484	311.34727	313.13131
LDGT	0.01674	0.00757	404.49114	407.16191
HDGV	0.07388	0.03087	906.90704	917.94156
LDDV	0.04325	0.00069	318.45460	319.73955
LDDT	0.03527	0.00102	364.58988	365.77468
HDDV	0.03080	0.00334	1260.27975	1262.04410
MC	0.12051	0.00307	389.77096	393.69694

2.3.4 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

$VMT_{VE} = BA * BH * (0.42 / 1000) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
BA: Area of Building (ft^2)
BH: Height of Building (ft)
(0.42 / 1000): Conversion Factor ft^3 to trips (0.42 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 * (0.38 / 1000) * HT

VMT_{VT}: Vender Trips Vehicle Miles Travel (miles)
BA: Area of Building (ft^2)
BH: Height of Building (ft)
(0.38 / 1000): Conversion Factor ft^3 to trips (0.38 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

2.4 Architectural Coatings Phase

2.4.1 Architectural Coatings Phase Timeline Assumptions

- Phase Start Date
Start Month: 7
Start Quarter: 1
Start Year: 2025

- Phase Duration
Number of Month: 5
Number of Days: 0

2.4.2 Architectural Coatings Phase Assumptions

- General Architectural Coatings Information
Building Category: Non-Residential
Total Square Footage (ft^2): 238000
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

2.4.3 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	0.20058	0.00207	0.11315	3.02340	0.00409	0.00362	0.02440
LDGT	0.22039	0.00269	0.19884	3.42810	0.00580	0.00513	0.02611
HDGV	0.87838	0.00602	0.93108	14.20802	0.02458	0.02175	0.05168
LDDV	0.07652	0.00107	0.08589	3.16510	0.00250	0.00230	0.00821
LDDT	0.08424	0.00122	0.13083	2.20761	0.00337	0.00310	0.00856
HDDV	0.13196	0.00424	2.59978	1.60673	0.05080	0.04673	0.03239
MC	2.45845	0.00259	0.66155	12.23901	0.02222	0.01966	0.05327

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

	CH_4	N_2O	CO_2	CO_2e
LDGV	0.01372	0.00484	311.34727	313.13131
LDGT	0.01674	0.00757	404.49114	407.16191
HDGV	0.07388	0.03087	906.90704	917.94156
LDDV	0.04325	0.00069	318.45460	319.73955
LDDT	0.03527	0.00102	364.58988	365.77468
HDDV	0.03080	0.00334	1260.27975	1262.04410
MC	0.12051	0.00307	389.77096	393.69694

2.4.4 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

2.5 Paving Phase

2.5.1 Paving Phase Timeline Assumptions

- Phase Start Date
Start Month: 7
Start Quarter: 1
Start Year: 2025

- Phase Duration
Number of Month: 5
Number of Days: 0

2.5.2 Paving Phase Assumptions

- General Paving Information
Paving Area (ft^2): 827357

- 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
Pavers Composite	1	8
Paving Equipment Composite	2	8
Rollers Composite	2	6

- 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

2.5.3 Paving Phase Emission Factor(s)

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

Pavers Composite [HP: 81] [LF: 0.42]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.24787	0.00486	2.64574	3.44523	0.13933	0.12819
Paving Equipment Composite [HP: 89] [LF: 0.36]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.20238	0.00487	2.21583	3.41771	0.08945	0.08229
Rollers Composite [HP: 36] [LF: 0.38]						
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**
Emission Factors	0.56682	0.00541	3.67816	4.11298	0.16639	0.15308

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

Pavers Composite [HP: 81] [LF: 0.42]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02136	0.00427	526.53742	528.34436
Paving Equipment Composite [HP: 89] [LF: 0.36]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02141	0.00428	527.68636	529.49724
Rollers Composite [HP: 36] [LF: 0.38]				
	CH_4	**N_2O**	**CO_2**	**CO_2e**
Emission Factors	0.02381	0.00476	586.90234	588.91644

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

	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**NH_3**
LDGV	0.20058	0.00207	0.11315	3.02340	0.00409	0.00362	0.02440
LDGT	0.22039	0.00269	0.19884	3.42810	0.00580	0.00513	0.02611
HDGV	0.87838	0.00602	0.93108	14.20802	0.02458	0.02175	0.05168
LDDV	0.07652	0.00107	0.08589	3.16510	0.00250	0.00230	0.00821
LDDT	0.08424	0.00122	0.13083	2.20761	0.00337	0.00310	0.00856
HDDV	0.13196	0.00424	2.59978	1.60673	0.05080	0.04673	0.03239
MC	2.45845	0.00259	0.66155	12.23901	0.02222	0.01966	0.05327

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

	CH_4	**N_2O**	**CO_2**	**CO_2e**
LDGV	0.01372	0.00484	311.34727	313.13131
LDGT	0.01674	0.00757	404.49114	407.16191
HDGV	0.07388	0.03087	906.90704	917.94156
LDDV	0.04325	0.00069	318.45460	319.73955
LDDT	0.03527	0.00102	364.58988	365.77468
HDDV	0.03080	0.00334	1260.27975	1262.04410
MC	0.12051	0.00307	389.77096	393.69694

2.5.4 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

$VOC_P = (2.62 * PA) / 43560$

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)

3. Heating

3.1 General Information & Timeline Assumptions

- Add or Remove Activity from Baseline? Add

- Activity Location
County: Anne Arundel
Regulatory Area(s): Baltimore, MD; Anne Arundel County and Baltimore County, MD

- Activity Title: Add Heating for 1/3 of sq footage

- Activity Description:
Construction of the building is to occur in 3 phases. This activity represents the first phase of approximately 79,335 sq ft.

- Activity Start Date
Start Month: 11
Start Year: 2024

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

- Activity Emissions of Criteria Pollutants:

Pollutant	Emissions Per Year (TONs)
VOC	0.015438
SO_x	0.001684
NO_x	0.280695
CO	0.235784

Pollutant	Emissions Per Year (TONs)
PM 10	0.021333
PM 2.5	0.021333
Pb	0.000000
NH_3	0.000000

- Global Scale Activity Emissions of Greenhouse Gases:

Pollutant	Emissions Per Year (TONs)
CH_4	0.006344
N_2O	0.006344

Pollutant	Emissions Per Year (TONs)
CO_2	336.887075
CO_2e	337.235136

3.2 Heating Assumptions

- Heating
Heating Calculation Type: Heat Energy Requirement Method

- Heat Energy Requirement Method
Area of floorspace to be heated (ft^2): 79335
Type of fuel: Natural Gas
Type of boiler/furnace: Commercial/Institutional (0.3 - 9.9 MMBtu/hr)
Heat Value ($MMBtu/ft^3$): 0.00105
Energy Intensity ($MMBtu/ft^2$): 0.0743

- Default Settings Used: Yes

- Boiler/Furnace Usage
Operating Time Per Year (hours): 900 (default)

3.3 Heating Emission Factor(s)

- Heating Criteria Pollutant Emission Factors (lb/1000000 scf)

VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3
5.5	0.6	100	84	7.6	7.6		

- Heating Greenhouse Gases Pollutant Emission Factors (lb/1000000 scf)

CH_4	N_2O	CO_2	CO_2e
2.26	2.26	120019	120143

3.4 Heating Formula(s)

- Heating Fuel Consumption ft^3 per Year

FC_{HER}= HA * EI / HV / 1000000

FC_{HER}: Fuel Consumption for Heat Energy Requirement Method
HA: Area of floorspace to be heated (ft^2)
EI: Energy Intensity Requirement ($MMBtu/ft^2$)
HV: Heat Value ($MMBTU/ft^3$)
1000000: Conversion Factor

- Heating Emissions per Year

HE_{POL}= FC * EF_{POL} / 2000

HE_{POL}: Heating Emission Emissions (TONs)
FC: Fuel Consumption
EF_{POL}: Emission Factor for Pollutant
2000: Conversion Factor pounds to tons

4. Heating

4.1 General Information & Timeline Assumptions

- Add or Remove Activity from Baseline? Add

- Activity Location

County: Anne Arundel
Regulatory Area(s): Baltimore, MD; Anne Arundel County and Baltimore County, MD

- Activity Title: Add Heating for 1/3 of sq footage

- Activity Description:

Construction of the building is to occur in 3 phases. This activity represents the first phase of approximately 79,335 sq ft.

- Activity Start Date

Start Month: 5
Start Year: 2025

- Activity End Date

Indefinite: Yes
End Month: N/A
End Year: N/A

- Activity Emissions of Criteria Pollutants:

Pollutant	Emissions Per Year (TONs)
VOC	0.015438
SO_x	0.001684
NO_x	0.280695
CO	0.235784

Pollutant	Emissions Per Year (TONs)
PM 10	0.021333
PM 2.5	0.021333
Pb	0.000000
NH_3	0.000000

- Global Scale Activity Emissions of Greenhouse Gases:

Pollutant	Emissions Per Year (TONs)
CH_4	0.006344
N_2O	0.006344

Pollutant	Emissions Per Year (TONs)
CO_2	336.887075
CO_2e	337.235136

4.2 Heating Assumptions

- Heating
Heating Calculation Type: Heat Energy Requirement Method

- Heat Energy Requirement Method
Area of floorspace to be heated (ft^2): 79335
Type of fuel: Natural Gas
Type of boiler/furnace: Commercial/Institutional (0.3 - 9.9 MMBtu/hr)
Heat Value ($MMBtu/ft^3$): 0.00105
Energy Intensity ($MMBtu/ft^2$): 0.0743

- Default Settings Used: Yes

- Boiler/Furnace Usage
Operating Time Per Year (hours): 900 (default)

4.3 Heating Emission Factor(s)

- Heating Criteria Pollutant Emission Factors (lb/1000000 scf)

VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3
5.5	0.6	100	84	7.6	7.6		

- Heating Greenhouse Gases Pollutant Emission Factors (lb/1000000 scf)

CH_4	N_2O	CO_2	CO_2e
2.26	2.26	120019	120143

4.4 Heating Formula(s)

- Heating Fuel Consumption ft^3 per Year
FC_{HER}= HA * EI / HV / 1000000

FC_{HER}: Fuel Consumption for Heat Energy Requirement Method
HA: Area of floorspace to be heated (ft^2)
EI: Energy Intensity Requirement ($MMBtu/ft^2$)
HV: Heat Value ($MMBTU/ft^3$)
1000000: Conversion Factor

- Heating Emissions per Year

HE_{POL}= FC * EF_{POL} / 2000

HE_{POL}: Heating Emission Emissions (TONs)
FC: Fuel Consumption
EF_{POL}: Emission Factor for Pollutant
2000: Conversion Factor pounds to tons

5. Heating

5.1 General Information & Timeline Assumptions

- Add or Remove Activity from Baseline? Add

- Activity Location

County: Anne Arundel
Regulatory Area(s): Baltimore, MD; Anne Arundel County and Baltimore County, MD

- Activity Title: Add Heating for 1/3 of sq footage

- Activity Description:

Construction of the building is to occur in 3 phases. This activity represents the first phase of approximately 79,335 sq ft.

- Activity Start Date

Start Month: 11
Start Year: 2025

- Activity End Date

Indefinite: Yes
End Month: N/A
End Year: N/A

- Activity Emissions of Criteria Pollutants:

Pollutant	Emissions Per Year (TONs)
VOC	0.015438
SO_x	0.001684
NO_x	0.280695
CO	0.235784

Pollutant	Emissions Per Year (TONs)
PM 10	0.021333
PM 2.5	0.021333
Pb	0.000000
NH_3	0.000000

- Global Scale Activity Emissions of Greenhouse Gases:

Pollutant	Emissions Per Year (TONs)
CH_4	0.006344
N_2O	0.006344

Pollutant	Emissions Per Year (TONs)
CO_2	336.887075
CO_2e	337.235136

5.2 Heating Assumptions

- Heating

Heating Calculation Type: Heat Energy Requirement Method

- Heat Energy Requirement Method
Area of floorspace to be heated (ft^2): 79335
Type of fuel: Natural Gas
Type of boiler/furnace: Commercial/Institutional (0.3 - 9.9 MMBtu/hr)
Heat Value ($MMBtu/ft^3$): 0.00105
Energy Intensity ($MMBtu/ft^2$): 0.0743

- Default Settings Used: Yes

- Boiler/Furnace Usage
Operating Time Per Year (hours): 900 (default)

5.3 Heating Emission Factor(s)

- Heating Criteria Pollutant Emission Factors (lb/1000000 scf)

VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3
5.5	0.6	100	84	7.6	7.6		

- Heating Greenhouse Gases Pollutant Emission Factors (lb/1000000 scf)

CH_4	N_2O	CO_2	CO_2e
2.26	2.26	120019	120143

5.4 Heating Formula(s)

- Heating Fuel Consumption ft^3 per Year
FC_{HER}= HA * EI / HV / 1000000

FC_{HER}: Fuel Consumption for Heat Energy Requirement Method
HA: Area of floorspace to be heated (ft^2)
EI: Energy Intensity Requirement ($MMBtu/ft^2$)
HV: Heat Value ($MMBTU/ft^3$)
1000000: Conversion Factor

- Heating Emissions per Year
HE_{POL}= FC * EF_{POL} / 2000

HE_{POL}: Heating Emission Emissions (TONs)
FC: Fuel Consumption
EF_{POL}: Emission Factor for Pollutant
2000: Conversion Factor pounds to tons

6. Personnel

6.1 General Information & Timeline Assumptions

- Add or Remove Activity from Baseline? Add

- Activity Location
County: Anne Arundel
Regulatory Area(s): Baltimore, MD; Anne Arundel County and Baltimore County, MD

- Activity Title: Add 1/3 of Personnel

- Activity Description:
Construction is to occur in 3 phases. This represents the # of personnel added for 1/3rd of construction.

- Activity Start Date
Start Month: 11
Start Year: 2024

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

- Activity Emissions of Criteria Pollutants:

Pollutant	Emissions Per Year (TONs)
VOC	0.459328
SO_x	0.004414
NO_x	0.315541
CO	6.194398

Pollutant	Emissions Per Year (TONs)
PM 10	0.009836
PM 2.5	0.008702
Pb	0.000000
NH_3	0.046702

- Global Scale Activity Emissions of Greenhouse Gases:

Pollutant	Emissions Per Year (TONs)
CH_4	0.031724
N_2O	0.011601

Pollutant	Emissions Per Year (TONs)
CO_2	664.494375
CO_2e	668.739633

6.2 Personnel Assumptions

- Number of Personnel
Active Duty Personnel: 0
Civilian Personnel: 314
Support Contractor Personnel: 0
Air National Guard (ANG) Personnel: 0
Reserve Personnel: 0

- Default Settings Used: Yes

- Average Personnel Round Trip Commute (mile): 20 (default)

- Personnel Work Schedule
Active Duty Personnel: 5 Days Per Week (default)
Civilian Personnel: 5 Days Per Week (default)
Support Contractor Personnel: 5 Days Per Week (default)
Air National Guard (ANG) Personnel: 4 Days Per Week (default)
Reserve Personnel: 4 Days Per Month (default)

6.3 Personnel On Road Vehicle Mixture

- On Road Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	37.55	60.32	0	0.03	0.2	0	1.9
GOVs	54.49	37.73	4.67	0	0	3.11	0

6.4 Personnel Emission Factor(s)

- On Road Vehicle Criteria Pollutant Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	NH_3
LDGV	0.20058	0.00207	0.11315	3.02340	0.00409	0.00362	0.02440
LDGT	0.22039	0.00269	0.19884	3.42810	0.00580	0.00513	0.02611
HDGV	0.87838	0.00602	0.93108	14.20802	0.02458	0.02175	0.05168
LDDV	0.07652	0.00107	0.08589	3.16510	0.00250	0.00230	0.00821
LDDT	0.08424	0.00122	0.13083	2.20761	0.00337	0.00310	0.00856
HDDV	0.13196	0.00424	2.59978	1.60673	0.05080	0.04673	0.03239
MC	2.45845	0.00259	0.66155	12.23901	0.02222	0.01966	0.05327

- On Road Vehicle Greenhouse Gases Emission Factors (grams/mile)

	CH_4	N_2O	CO_2	CO_2e
LDGV	0.01372	0.00484	311.34727	313.13131
LDGT	0.01674	0.00757	404.49114	407.16191
HDGV	0.07388	0.03087	906.90704	917.94156
LDDV	0.04325	0.00069	318.45460	319.73955
LDDT	0.03527	0.00102	364.58988	365.77468
HDDV	0.03080	0.00334	1260.27975	1262.04410
MC	0.12051	0.00307	389.77096	393.69694

6.5 Personnel Formula(s)

- Personnel Vehicle Miles Travel for Work Days per Year

$VMT_P = NP * WD * AC$

VMT_P: Personnel Vehicle Miles Travel (miles/year)
NP: Number of Personnel
WD: Work Days per Year
AC: Average Commute (miles)

- Total Vehicle Miles Travel per Year

$VMT_{Total} = VMT_{AD} + VMT_C + VMT_{SC} + VMT_{ANG} + VMT_{AFRC}$

VMT_{Total}: Total Vehicle Miles Travel (miles)
VMT_{AD}: Active Duty Personnel Vehicle Miles Travel (miles)
VMT_C: Civilian Personnel Vehicle Miles Travel (miles)
VMT_{SC}: Support Contractor Personnel Vehicle Miles Travel (miles)
VMT_{ANG}: Air National Guard Personnel Vehicle Miles Travel (miles)
VMT_{AFRC}: Reserve Personnel Vehicle Miles Travel (miles)

- Vehicle Emissions per Year

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

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

7. Personnel

7.1 General Information & Timeline Assumptions

- Add or Remove Activity from Baseline? Add

- Activity Location
County: Anne Arundel
Regulatory Area(s): Baltimore, MD; Anne Arundel County and Baltimore County, MD

- Activity Title: Add 1/3 of Personnel

- Activity Description:
Construction is to occur in 3 phases. This represents the # of personnel added for 1/3rd of construction.

- Activity Start Date
Start Month: 5
Start Year: 2025

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

- Activity Emissions of Criteria Pollutants:

Pollutant	Emissions Per Year (TONs)
VOC	0.440830
SO_x	0.004315
NO_x	0.279839
CO	5.880045

Pollutant	Emissions Per Year (TONs)
PM 10	0.009601
PM 2.5	0.008496
Pb	0.000000
NH_3	0.046098

- Global Scale Activity Emissions of Greenhouse Gases:

Pollutant	Emissions Per Year (TONs)
CH_4	0.029798
N_2O	0.010981

Pollutant	Emissions Per Year (TONs)
CO_2	650.532683
CO_2e	654.546466

7.2 Personnel Assumptions

- Number of Personnel
Active Duty Personnel: 0
Civilian Personnel: 314
Support Contractor Personnel: 0
Air National Guard (ANG) Personnel: 0
Reserve Personnel: 0

- Default Settings Used: Yes

- Average Personnel Round Trip Commute (mile): 20 (default)

- Personnel Work Schedule
Active Duty Personnel: 5 Days Per Week (default)
Civilian Personnel: 5 Days Per Week (default)
Support Contractor Personnel: 5 Days Per Week (default)
Air National Guard (ANG) Personnel: 4 Days Per Week (default)
Reserve Personnel: 4 Days Per Month (default)

7.3 Personnel On Road Vehicle Mixture

- On Road Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	37.55	60.32	0	0.03	0.2	0	1.9
GOVs	54.49	37.73	4.67	0	0	3.11	0

7.4 Personnel Emission Factor(s)

- On Road Vehicle Criteria Pollutant Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	NH_3
LDGV	0.19243	0.00202	0.09877	2.86957	0.00400	0.00354	0.02413
LDGT	0.20849	0.00263	0.17501	3.23926	0.00564	0.00499	0.02571
HDGV	0.85560	0.00606	0.85135	13.44634	0.02420	0.02141	0.05136
LDDV	0.07409	0.00103	0.08004	3.10900	0.00259	0.00239	0.00821
LDDT	0.08066	0.00120	0.12040	2.13679	0.00328	0.00302	0.00856
HDDV	0.11776	0.00414	2.42363	1.54878	0.04239	0.03900	0.03225
MC	2.45691	0.00259	0.65964	12.09191	0.02222	0.01966	0.05364

- On Road Vehicle Greenhouse Gases Emission Factors (grams/mile)

	CH_4	N_2O	CO_2	CO_2e
LDGV	0.01287	0.00463	303.86930	305.56986
LDGT	0.01555	0.00713	396.30994	398.82083
HDGV	0.07031	0.02930	912.03906	922.51644
LDDV	0.04209	0.00069	307.07805	308.33412
LDDT	0.03477	0.00102	358.66770	359.84009
HDDV	0.03034	0.00335	1232.18126	1233.93604
MC	0.11887	0.00307	389.89397	393.77968

7.5 Personnel Formula(s)

- Personnel Vehicle Miles Travel for Work Days per Year

$VMT_P = NP * WD * AC$

VMT_P: Personnel Vehicle Miles Travel (miles/year)
NP: Number of Personnel
WD: Work Days per Year
AC: Average Commute (miles)

- Total Vehicle Miles Travel per Year

$VMT_{Total} = VMT_{AD} + VMT_C + VMT_{SC} + VMT_{ANG} + VMT_{AFRC}$

VMT_{Total}: Total Vehicle Miles Travel (miles)
VMT_{AD}: Active Duty Personnel Vehicle Miles Travel (miles)
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VMT_{SC}: Support Contractor Personnel Vehicle Miles Travel (miles)
VMT_{ANG}: Air National Guard Personnel Vehicle Miles Travel (miles)
VMT_{AFRC}: Reserve Personnel Vehicle Miles Travel (miles)

- Vehicle Emissions per Year

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

V_{POL}: Vehicle Emissions (TONs)
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8. Personnel

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- Activity Location
County: Anne Arundel
Regulatory Area(s): Baltimore, MD; Anne Arundel County and Baltimore County, MD

- Activity Title: Add 1/3 of Personnel

- Activity Description:
Construction is to occur in 3 phases. This represents the # of personnel added for 1/3rd of construction

- Activity Start Date
Start Month: 11
Start Year: 2025

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

- Activity Emissions of Criteria Pollutants:

Pollutant	Emissions Per Year (TONs)
VOC	0.440830
SO_x	0.004315
NO_x	0.279839
CO	5.880045

Pollutant	Emissions Per Year (TONs)
PM 10	0.009601
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