

APPENDIX D  
*AVIATION EMISSIONS AND  
AIR QUALITY*

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*AVIATION EMISSIONS AND AIR  
QUALITY BACKGROUND*

## D.1 Aviation Emissions and Air Quality Background

The 2019 Master Plan Update (MPU) developed forecasts for the Boise Airport (Airport) as part of the MPU process, which the Federal Aviation Administration (FAA) approved. The FAA approved the use of the 2019 MPU forecasts for the Environmental Assessment (EA) in a memo dated August 2024 (see **Appendix H**). **Table D-1** presents the aircraft operations data for the years being analyzed for impacts due to the Proposed Action compared to the No Action Alternative. These include: 2019 (existing conditions year), 2028, 2029, and 2030 (three construction years), 2030 (opening year for the Proposed Action), and 2035 (five years post opening year for the Proposed Action). The forecast is the same regardless of the implementation of the Proposed Action and the operations for the No Action Alternative and Proposed Action are the same for all analysis years. **Appendix I.2** contains detailed aircraft fleet mix data used in the EA analysis.

Table D-1

Aircraft Operations at the Airport for the Proposed Action Analysis Years

Year	Passenger Airlines	Cargo <sup>/a/</sup>	GA	Other Air Taxi	Military <sup>/b/</sup>	Total Operations
2019	45,487	5,484	66,425	6,490	16,349	140,235
2028	50,994	6,703	75,310	7,346	16,349	156,702
2029	51,616	6,832	76,715	7,442	16,349	158,954
2030	52,229	6,956	78,222	7,535	16,349	161,291
2035	54,540	7,541	86,694	7,904	16,349	173,028

Notes:

<sup>/a/</sup> - The FAA Terminal Area Forecast (TAF) does not list cargo operations separately; however, the 2019 MPU separated cargo into its own category.

<sup>/b/</sup> - Airport Master Plan Update forecast constant military operations for years 2020 through 2035 based on lack of justification for military missions increasing or decreasing.

Source: FAA, 2021; Ricondo, 2019; RS&H, 2024.

### D.1.1 Affected Environment

The General Study Area is located in Ada County. According to the USEPA Greenbook, Ada County is classified as an attainment area for Lead (Pb), Nitrogen Dioxide (NO<sub>2</sub>), 8-Hour Ozone (O<sub>3</sub>), Particulate Matter 2.5 Micrometers (PM<sub>2.5</sub>), and Sulphur Dioxide

(SO<sub>2</sub>), a maintenance area for Particulate Matter 10 Micrometers (PM<sub>10</sub>) and “Not Classified” for Carbon Monoxide (CO).<sup>1</sup> However, according to the Idaho Department of Environmental Quality (IDEQ), the maintenance periods for both PM<sub>10</sub> and CO have “sunset”, which means Ada County is no longer in “Nonattainment” status for any of the National Ambient Air Quality Standards (NAAQS). The maintenance period for PM<sub>10</sub> was “sunset” on November 26, 2023, and the maintenance period for CO was “sunset” on December 27, 2022.<sup>2</sup>

Existing aircraft taxiing air pollutant emissions for the were computed using the FAA’s AEDT, version 3e (see **Table D-2**).

Table D-2  
Existing Taxiing Aircraft Taxi Emissions (in Tons)

Activity	Annual Aircraft Operations	CO	VOC <sup>1</sup>	NO <sub>x</sub> <sup>1</sup>	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub> <sup>2</sup>	Pb <sup>3</sup>
Existing Conditions <sup>4</sup> Taxi In/Taxi Out	140,235	344.59	67.89	34.41	10.14	0.82	0.82	0.04

Source: HMMH, 2025.

## D.1.2 Environmental Consequences

### D.1.2.1 No Action Alternative

#### Construction Emissions

Under the No Action Alternative, no construction would occur. No emissions would be created from fuel combustion in construction equipment and vehicles. Additionally, no fugitive dust emissions would be created from disturbed ground and haul routes. As a result, there would be no effect on air quality.

#### Operational Emissions

The No Action Alternative aircraft taxi emissions were computed using the FAA’s Aviation Environmental Design Tool (AEDT), version 3e. For taxi times, calendar year

<sup>1</sup> USEPA. (2025, May). Green Book, Idaho Nonattainment/Maintenance Status for Each County by Year for All Criteria Pollutants. Accessed June 2025, from USEPA: [https://www3.epa.gov/airquality/greenbook/anayo\\_id.html](https://www3.epa.gov/airquality/greenbook/anayo_id.html).

<sup>2</sup> Email correspondence with Idaho Department of Environmental Quality on August 26, 2023.

2023 average taxi times were obtained from the FAA Aviation System Performance Metrics (ASPM) database for each of the No Action model scenarios and for runway ends that have not changed in the Proposed Action as inputs. The ASPM data provided average taxi times for Runway 10L/28R (see **Table D-3**). Note that the Runway 28L end will be extended first so the shortened Runway 10R end will only be paired with the extended Runway 28L end (see **Table D-3**). Taxi distances from each Runway 10R/28L end to the closest and farthest terminal location are reported in **Table D-4** for the No Action Alternative.

Table D-3  
No Action Alternative Taxi Times

Runway End	Taxi Out Time (minutes)	Taxi In Time (minutes)
10L	14.89	4.61
10R	16.02	3.91
28L	14.19	5.74
28R	14.89	4.61

Source: HMMH, 2025.

Table D-4  
No Action Alternative Taxi Distances to Terminal for Runway 10R/28L

Runway	No Action Alternative Taxi Distance from Closest Terminal Location	No Action Alternative Taxi Distance from Farthest Terminal Location
10R End	5,445 feet	8,965 feet
28L End	4,565 feet	6,305 feet

Source: RS&H, 2022.

Aircraft operations levels from the 2019 MPU were used in AEDT to determine aircraft air pollutant emissions because of taxiing (see **Table D-1**). **Appendix I.2** summarizes the aircraft fleet mix and number of annual operations used in the modeling for No Action Alternative. No change in aircraft taxi time or distance would occur under the No Action Alternative. **Table D-5** presents the No Action Alternative aircraft taxi air pollutant emissions (see **Appendix D.4** for more information).

Table D-5  
No Action Alternative Aircraft Taxi Emissions (in Tons)

	CO	VOC	NO <sub>2</sub>	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
No Action Alternative	261.51	53.62	26.16	7.7	0.64	0.64

Source: HMMH, 2023.

#### D.1.2.2 Proposed Action

The Proposed Action would not increase or change aircraft operations or increase enplanements (i.e., passengers) at the Airport beyond the forecast levels (see **Table D-1**). Therefore, the consideration of potential air quality effects is limited to the possibility that construction emissions and aircraft taxi emissions could exceed the NAAQS for a criteria pollutant.

The FAA lists four Screening Criteria questions in the current Air Quality Handbook to determine the appropriate level of analysis for attainment areas (see **Table D-6**).<sup>3</sup> The Screening Criteria questions apply to the construction period and the operational period of a proposed action. The four screening criteria questions were applied to the Proposed Action and there are no emissions from the activity levels above the amounts specified in the four Screening Criteria questions (see **Table D-6**); therefore, a construction emissions inventory (CEI) or operational emissions inventory is not required. However, a quantitative analysis of the Proposed Action's construction emissions using the U.S. Environmental Protection Agency's (USEPA's) Motor Vehicle Emission Simulator (MOVES4), as well a quantitative analysis of the Proposed Action's operational emissions due to the change in taxiing distances and times using the Aviation Environmental Design Tool (AEDT) were prepared and can be found in **Appendix I**.

<sup>3</sup> FAA. (2024, July 24). Technical Support Document for Attainment Area Screening Methodology. Retrieved February 27, 2025, from Aviation Emissions and Air Quality Handbook: [https://www.faa.gov/regulations\\_policies/policy\\_guidance/envir\\_policy/airquality\\_handbook](https://www.faa.gov/regulations_policies/policy_guidance/envir_policy/airquality_handbook).

Table D-6  
 FAA Air Quality Handbook Screening Criteria for Attainment Areas

Screening Criteria Question	Proposed Action Response
Will the FAA decision result in an increase of more than 14,000 commercial aircraft operations per year, or if the project is in an Ozone Transportation Region (OTR), more than 5,000 general aviation (GA) aircraft operations per year?	No, the Proposed Action would not increase operations at the Airport either during construction or operation and is not in an OTR.
Will the FAA decision result in an increase of more than 340,000 minutes of aircraft delay per year?	No, taxi times increase by about one minute, but would still be under 340,000 minutes even in 2035.
Will the FAA decision result in an additional 25 million Vehicle Miles Traveled (VMT) per year?	No, the Proposed action would result in about an additional 2.3 million VMT during 2028 construction of the Proposed Action, and by about 0.7 million VMT during 2029 construction of the Proposed Action. Operation of the Proposed Action would not result in additional VMT as the Proposed Action would not increase operations at the Airport.
Will the FAA decision result in the use of more than 125 construction vehicles or GSE during a year, or if the project is in the OTR, 50 construction vehicles or GSE during a year?	No, the construction of the Proposed Action is anticipated to use about 119 construction vehicles per year. Operation of the Proposed Action would not increase operation at the Airport and therefore, is not anticipated to use more than 125 GSE in a year and is not in an OTR.

Source: FAA, 2024; RS&H, 2025.

## Construction Emissions

Mobile sources of air emissions include combustion of fuels in motor vehicles and other engines and equipment that can be moved from one location to another. These are

typically classified as “road sources” and “non-road sources.” Road sources include automobiles, light-duty and heavy-duty trucks. Non-road sources include construction equipment.

Construction emissions were quantified using the USEPA’s Motor Vehicle Emission Simulator (MOVES4). Although the Airport is in attainment for all NAAQS, emissions estimates were prepared for CO, PM<sub>10</sub>, volatile organic compounds (VOCs) and nitrogen oxides (NO<sub>x</sub>), which are precursors to the air pollutant O<sub>3</sub>, and estimates for SO<sub>2</sub>, and PM<sub>2.5</sub>, were prepared. While MOVES4 does not provide emission estimates of NO<sub>2</sub> or SO<sub>2</sub>, the model does provide estimates of NO<sub>x</sub> and sulfur oxides (SO<sub>x</sub>) emissions of which NO<sub>2</sub> and SO<sub>2</sub> are components, respectively.

Factors influencing construction emissions include but are not limited to: construction duration; construction type; materials used; estimated cost of construction; number, type, duration, and intensity of construction equipment usage; vehicle miles traveled; ambient meteorological conditions; fuel type used; and anticipated quantity of materials consumed. This analysis assumes construction would occur within a 36-month period. Assuming all construction would occur in a 36-month period provides a conservative analysis (i.e., overestimates potential construction-related emissions).

**Table D-7** shows the construction-related emissions from the Proposed Action (see **Appendix D.4** for the detailed output). The *de minimis* threshold for maintenance and attainment areas is 100 tons per year for each criteria pollutant.

The Airport, located in Ada County, is classified as either an attainment or maintenance area for all criteria pollutants. The construction emissions inventory analysis demonstrates the Proposed Action would not cause an increase in construction air emissions above the *de minimis* thresholds for any of the NAAQS during either construction year.

Table D-7  
Construction Emissions Inventory (Tons) for Proposed Action

Construction Year	Criteria Pollutant	CO	NO <sub>x</sub>	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	VOC
<b>Year 1 - 2028</b>							
Year 1 – 2028	Non-road Emissions	0.79	2.49	0.01	0.17	0.16	0.19
Year 1 – 2028	On-road Emissions	6.84	0.84	0.01	0.12	0.04	0.23
Year 1 – 2028	Fugitive Emissions	1.21	0.08	0.01	1.03	--	18.52
<b>Year 1 – 2028</b>	<b>Total Emissions Construction Year 1</b>	<b>8.84</b>	<b>3.41</b>	<b>0.03</b>	<b>1.31</b>	<b>0.20</b>	<b>18.93</b>
Year 1 – 2028	<i>De minimis</i>	100	100	100	100	100	100
Year 1 – 2028	Exceeds <i>de minimis</i> ?	No	No	No	No	No	No
<b>Year 2 - 2029</b>							
Year 2 – 2029	Non-road Emissions	0.33	1.12	0.01	0.07	0.07	0.08
Year 2 – 2029	On-road Emissions	2.28	0.25	0.00	0.04	0.01	0.08
Year 2 – 2029	Fugitive Emissions	0.58	0.04	0.01	0.50	--	8.87
<b>Year 2 – 2029</b>	<b>Total Emissions Construction Year 2</b>	<b>3.18</b>	<b>1.41</b>	<b>0.016</b>	<b>0.61</b>	<b>0.08</b>	<b>9.03</b>
Year 2 – 2029	<i>De minimis</i>	100	100	100	100	100	100
Year 2 – 2029	Exceeds <i>de minimis</i> ?	No	No	No	No	No	No
<b>Year 3 - 2030</b>							
Year 3 - 2030	Non-road Emissions	0.00	0.01	0.00	0.00	0.00	0.00
Year 3 – 2030	On-road Emissions	0.14	0.00	0.00	0.00	0.00	0.00
Year 3 – 2030	Fugitive Emissions	--	--	--	--	--	--
<b>Year 3 – 2030</b>	<b>Total Emissions Construction Year 3</b>	<b>0.14</b>	<b>0.01</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.01</b>
Year 3 – 2030	<i>De minimis</i>	100	100	100	100	100	100
Year 3 – 2030	Exceeds <i>de minimis</i> ?	No	No	No	No	No	No

Note: Values may not add up due to rounding.

Source: HMMH, 2025.

## Operational Emissions

The Proposed Action would not increase or change aircraft operations or types of aircraft or increase enplanements (i.e., passengers) at the Airport beyond the forecast levels. However, the Proposed Action would result in changes to taxi distance due to the changes in Runway 10R/28L end locations following construction completion in 2029. The runway shift and extension would move the Runway 10R end closer to the terminal area while moving the Runway 28L end further away from the terminal area. **Table D-8** shows the No Action Alternative aircraft taxi distances to the existing runway thresholds from the closest and farthest aircraft parking positions at the passenger terminal, and the anticipated aircraft taxi distances under the Proposed Action. With the Proposed Action, taxi distances from the closest terminal location would decrease by 710 feet to the Runway 10R end and increase by 1,765 feet to the Runway 28L end. Likewise, the taxi distances from the farthest terminal location would decrease by 690 feet to the Runway 10R end and increase by 1,770 feet to the Runway 28L end.

Table D-8

Aircraft Taxi Distances From Passenger Terminal to Runway Thresholds

Runway	No Action Alternative Taxi Distance from Closest Terminal Location	Proposed Action Taxi Distance from Closest Terminal Location	Difference in Taxi Distance	No Action Alternative Taxi Distance from Farthest Terminal Location	Proposed Action Taxi Distance from Farthest Terminal Location	Difference in Taxi Distance
10R End	5,445 feet	4,735 feet	-710 feet	8,965 feet	8,275 feet	-690 feet
28L End	4,565 feet	6,330 feet	+1,765 feet	6,305 feet	8,075 feet	+1,770 feet

Source: RS&H, 2022.

The changes in the operational emissions inventory were measured by comparing the time it takes for aircraft to taxi under the No Action Alternative relative to the time it would take for aircraft to taxi under the Proposed Action. To estimate taxi times for the existing and modified runway ends for Runway 10R/28L, a default taxi speed of 15 knots was used along with the change in distance between the runway ends to compute the difference in taxi time. This results in the taxi times provided below in **Table D-9**. **Table D-9** also shows the average time that aircraft would taxi with Proposed Action in 2030 following completion of the runway shift and extension compared to the No Action Alternative. The Proposed Action would increase the taxi-in time for arriving aircraft on Runway 10R by about 1 minute, while decreasing the taxi out time for aircraft departing on Runway 10R by about 1 minute. The Proposed Action would decrease taxi in time for arriving aircraft on Runway 28L, while increasing the taxi out time for departing aircraft on Runway 28L by about 1 minute.

Table D-9

Proposed Action Aircraft Taxi Times Compared to the No Action Alternative

Runway End	Taxi Out Time (minutes)	Taxi In Times (minutes)
10L (No Change)	14.89	4.61
10R (No Action Alternative)	16.02	3.91
10R (Proposed Action)	15.35	5.07
<b>Difference</b>	<b>-0.77</b>	<b>+1.16</b>
28R (No Change)	14.89	4.61
28L (No Action Alternative)	14.19	5.74
28L (Proposed Action)	15.35	5.07
<b>Difference</b>	<b>+1.16</b>	<b>-0.67</b>

Source: HMMH, 2025.

Aircraft taxi air pollutant emissions for the Proposed Action were computed using the FAA's AEDT, version 3e. **Table D-10** presents the aircraft taxi emission inventory for the Proposed Action compared to the No Action Alternative (see **Appendix D.4** for the detailed output). The Proposed Action would decrease emissions during construction and increase emissions for all criteria pollutants for operation. This increase in emissions would occur because the aircraft taxi times are overall greater with Proposed

Action. However, none of the criteria pollutant emissions from the Proposed Action would exceed *de minimis* thresholds when compared to the No Action Alternative, as seen in **Table D-10**.

Table D-10

Proposed Action Aircraft Taxi Emissions (in Tons) Compared to the No Action Alternative

Activity	Annual Aircraft Operations	CO	VOC <sup>1</sup>	NO <sub>x</sub> <sup>1</sup>	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub> <sup>2</sup>	Pb <sup>3</sup>
<b>2028</b>								
2028 No Action Alternative Taxi Emissions	156,702	413.94	77.49	42.12	13.74	1.07	1.07	0.04
2028 Proposed Action Taxi Emissions	156,702	411.91	76.94	42.07	13.72	1.07	1.07	0.04
<b>Net Change in 2028 Aircraft Taxi Emissions</b>	<b>0</b>	<b>-2.03</b>	<b>-0.55</b>	<b>-0.04</b>	<b>-0.02</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
2028	<i>De minimis</i>	100	100	100	100	100	100	25
2028	Exceeds <i>de minimis</i> ?	No	No	No	No	No	No	No
<b>2029</b>								
2029 No Action Alternative Taxi Emissions	158,954	418.75	78.26	42.66	13.91	1.09	1.09	0.04
2029 Proposed Action Taxi Emissions	158,954	417.30	77.82	42.68	13.91	1.08	1.08	0.04
<b>Net Change in 2029 Aircraft Taxi Emissions</b>	<b>0</b>	<b>-1.46</b>	<b>-0.45</b>	<b>0.03</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
2029	<i>De minimis</i>	100	100	100	100	100	100	25
2029	Exceeds <i>de minimis</i> ?	No	No	No	No	No	No	No
<b>2030</b>								
2030 No Action Alternative Taxi Emissions	161,291	423.68	79.07	43.19	14.07	1.10	1.10	0.04
2030 Proposed Action Taxi Emissions	161,291	429.68	80.27	43.77	14.27	1.11	1.11	0.04

Activity	Annual Aircraft Operations	CO	VOC <sup>1</sup>	NO <sub>x</sub> <sup>1</sup>	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub> <sup>2</sup>	Pb <sup>3</sup>
<b>Net Change in 2030 Aircraft Taxi Emissions</b>	<b>0</b>	<b>5.99</b>	<b>1.20</b>	<b>0.59</b>	<b>0.20</b>	<b>0.02</b>	<b>0.02</b>	<b>0.00</b>
2030	<i>De minimis</i>	100	100	100	100	100	100	25
2030	Exceeds <i>de minimis</i> ?	No	No	No	No	No	No	No
<b>2035</b>								
2035 No Action Alternative Taxi Emissions	173,028	447.73	83.33	45.38	14.77	1.16	1.16	0.05
2035 Proposed Action Taxi Emissions	173,028	454.01	84.57	46.00	14.98	1.17	1.17	0.05
<b>Net Change in 2035 Aircraft Taxi Emissions</b>	<b>0</b>	<b>6.27</b>	<b>1.24</b>	<b>0.62</b>	<b>0.21</b>	<b>0.02</b>	<b>0.02</b>	<b>0.00</b>
2035	<i>De minimis</i>	100	100	100	100	100	100	25
2035	Exceeds <i>de minimis</i> ?	No	No	No	No	No	No	No

## Notes:

1. Following standard industry practice, O<sub>3</sub> emissions were evaluated VOC and NO<sub>x</sub>, which are precursors in the formation of O<sub>3</sub>.
2. As a conservative estimate, PM<sub>2.5</sub> emissions were assumed to be the same for PM<sub>10</sub>.
3. Pb emissions were estimated externally using EPA's Pb emissions calculation procedures as referenced in Calculating Piston-Engine Aircraft Airport Inventories for Pb for the 2011 National Emissions Inventory.
4. Aircraft emissions are the sum of the Taxi In/Taxi Out emissions only.
5. Totals may not add due to rounding.

Source: HMMH January 2025.

## General Conformity

According to the FAA Order 1050.1 Desk Reference, “*the General Conformity Rule establishes the procedures and criteria for determining whether certain Federal actions conform to state or Federal (EPA) air quality implementation plans (SIPs/FIP).*”

Conformity is defined as demonstrating a project or action conforms to the State Implementation Plan's (SIP's) purpose of eliminating or reducing the severity and number of violations of the NAAQS and achieving expeditious attainment of such standards.<sup>4</sup> If the General Conformity evaluation for the Proposed Action were to show

<sup>4</sup> 42 United States Code (U.S.C.) Title 42 § 7506.

that the applicable thresholds for any NAAQS were equaled or exceeded due to the Proposed Action, further, more detailed analysis to demonstrate conformity would be required. Conversely, if emissions of an action are less than the *de minimis* threshold levels, then the action is considered too small to adversely affect the air quality status of the area and is automatically considered to conform with the applicable SIP.

General Conformity Rule is only considered when a Federal action is proposed to occur in a USEPA-designated nonattainment or maintenance area. Since the Proposed Action lies within Ada County, which is in attainment for all NAAQS, it is not subject to the USEPA's General Conformity Regulations.

Additionally, the Proposed Action's construction emissions and operational emissions for taxiing aircraft are below *de minimis* thresholds as compared to the No Action Alternative. Therefore, the Proposed Action is considered too small to adversely affect the air quality status of the area and is considered to conform with the SIP (see **Table D-11**).

Table D-11

Construction and Net Operational Emissions for the Proposed Action for Each Year Compared to US EPA De Minimis Thresholds

Year	CO	NOx <sup>1</sup>	SO <sub>2</sub> <sup>1</sup>	PM <sub>10</sub>	PM <sub>2.5</sub> <sup>1</sup>	VOC <sup>1</sup>	Lead <sup>1</sup>
<b>2028</b>							
2028 Construction Emissions	8.84	3.41	0.03	1.31	0.20	18.93	0.00
2028 Net Aircraft Operational Emissions Delta (Proposed Action minus No Action) <sup>3</sup>	-2.03	-0.04	-0.02	0.00	0.00	-0.55	0.00
<b>2028 Total Emissions (Construction + Net Operational)</b>	<b>6.81</b>	<b>3.37</b>	<b>0.01</b>	<b>1.31</b>	<b>0.20</b>	<b>18.40</b>	<b>0.00</b>
UEPA <i>de minimis</i> Threshold	100	100	100	100	100	100	25
Emissions below <i>de minimis</i> thresholds?	Yes	Yes	Yes	Yes	Yes	Yes	Yes
<b>2029</b>							
2029 Construction Emissions	3.18	1.41	0.02	0.61	0.08	9.03	0.00

Year	CO	NOx <sup>1</sup>	SO <sub>2</sub> <sup>1</sup>	PM <sub>10</sub>	PM <sub>2.5</sub> <sup>1</sup>	VOC <sup>1</sup>	Lead <sup>1</sup>
2029 Net Aircraft Operational Emissions Delta (Proposed Action minus No Action) <sup>3</sup>	-1.46	0.03	0.00	0.00	0.00	-0.45	0.00
<b>2029 Total Emissions (Construction + Net Operational)</b>	<b>1.72</b>	<b>1.44</b>	<b>0.02</b>	<b>0.61</b>	<b>0.08</b>	<b>8.60</b>	<b>0.00</b>
USEPA <i>de minimis</i> Threshold	100	100	100	100	100	100	25
Emissions below <i>de minimis</i> thresholds?	Yes	Yes	Yes	Yes	Yes	Yes	Yes
<b>2030</b>							
2030 Construction Emissions	0.14	0.01	0.00	0.00	0.00	0.01	0.00
2030 Net Aircraft Operational Emissions Delta (Proposed Action minus No Action) <sup>3</sup>	5.99	0.59	0.20	0.02	0.02	1.20	0.00
<b>2030 Total Emissions (Construction + Net Operational)</b>	<b>6.13</b>	<b>0.60</b>	<b>0.20</b>	<b>0.02</b>	<b>0.02</b>	<b>1.21</b>	<b>0.00</b>
USEPA <i>de minimis</i> Threshold	100	100	100	100	100	100	25
Emissions below <i>de minimis</i> thresholds?	Yes	Yes	Yes	Yes	Yes	Yes	Yes
<b>2035</b>							
<b>2035 Net Aircraft Operational Emissions Delta (Proposed Action minus No Action)<sup>3</sup></b>	<b>6.27</b>	<b>0.62</b>	<b>0.21</b>	<b>0.02</b>	<b>0.02</b>	<b>1.24</b>	<b>0.00</b>
USEPA <i>de minimis</i> Threshold	100	100	100	100	100	100	25
Emissions below <i>de minimis</i> thresholds?	Yes	Yes	Yes	Yes	Yes	Yes	Yes

## Notes:

- General Conformity does not apply for these pollutants in the Boise Airport (BOI) area because the area is designated attainment/unclassifiable for these NAAQS. The General Conformity *de minimis* threshold for maintenance area were conservatively used to determine significance under the National Environmental Policy Act (NEPA) for these pollutants.
- Pb emissions for construction emissions were not estimated since the fuel use for these sources are gasoline and diesel which do not contain Pb.
- Net Aircraft emissions from **Table D-10** Total Proposed Action Aircraft minus Total Proposed No Action Aircraft.

Source: HMMH, April 2025.

APPENDIX D.2  
*AGENCY CORRESPONDENCE*

## FW: Question about maintenance area end dates

DL

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To: Bruner, Heidi S (FAA) <Heidy.S.Bruner@faa.gov>

Mon 2025-06-02 4:40 PM

You don't often get email from david.luft@deq.idaho.gov. [Learn why this is important](#)

**CAUTION:** This email originated from outside of the Federal Aviation Administration (FAA). Do not click on links or open attachments unless you recognize the sender and know the content is safe.

Heidy, please see below.

Regards,

**David Luft | Air Quality Manager, Boise Region**

Idaho Department of Environmental Quality

1445 N. Orchard, Boise, ID 83706

Office: (208) 373-0201

[david.luft@deq.idaho.gov](mailto:david.luft@deq.idaho.gov)

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**From:** Mary Anderson <Mary.Anderson@deq.idaho.gov>

**Sent:** Friday, August 26, 2022 3:03 PM

**To:** David Luft <David.Luft@deq.idaho.gov>

**Subject:** Question about maintenance area end dates

Dave, here are the dates when the 20 year maintenance period ends for northern Ada County:

PM10 – November 26, 2023

CO – December 27, 2022

**Mary Anderson | Air Quality Planning Bureau Chief**

Idaho Department of Environmental Quality

1410 N Hilton, Boise, ID 83706

Office Phone: (208) 373-0202

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**Our mission:** To protect human health and the quality of Idaho's air, land, and water.

APPENDIX D.3

*CONSTRUCTION EMISSIONS INVENTORY  
MODELING OUTPUTS*

Project Component	NEW Construction Year (as of 11/22/2024)	Duration (months)	Cost (\$)	asphalt/concrete	number of lights	Linear Feet	Square Feet	Note	acres	
Construct Taxiway B off of Taxiway W	2029	4	\$ 9,540,000.00	Asphalt		-	238692		5.5	
Remove Portion of Taxiway F	2029	1	\$ 340,000.00			-	183978		4.2	
Construct new conduit for the NAVAIDs cabling for complete the FAA Fiber Optic Loop Near Taxiway B only	2028	2	\$ 700,000.00			19052	-			
<b>Extend Runway 28L by 1,578 Feet</b>	2028	7	\$ 31,395,000.00	Concrete		-	322638		7.4	
Construct Taxiway P of the Runway 28L end	2028	3	\$ 6,000,000.00	Asphalt		-	175615		4.0	
Relocate Runway 10R Distance Measuring Equipment (DME)	2028	1	\$ 150,000.00			-	72150		1.7	
Replace and Relocate Runway 10R Localizer	2028	3	\$ 1,200,000.00			-	149266		3.4	
Relocate Runway 10R Rollout Runway Visual Range (RVR)	2028	1	\$ 100,000.00			-	5000		0.1	
Replace and Relocate Runway 28L VASI with PAPIs in a new location	2028	1	\$ 135,000.00		1 papi	-	20075		0.5	
Replace and Relocate Runway 28L Medium Intensity Approach Lighting System with Runway Alignment Indicator Lights (MALSR) in a new location	2028	1	\$ 2,500,000.00		9 light stations	3200	-			
Construct a new conduit for the NAVAIDs cabling for complete the FAA Fiber Optic Loop for the rest of the loop	2028	1	\$ 2,100,000.00			9653	-			
Re-route of the existing FAA fiber optic	2028	1	\$ 875,000.00			-	-	see line 12 and line 4		
<b>Remove 1,341 Feet from the end of Runway 10R</b>	2029	3	\$ 8,400,000.00			-	279093		6.4	
Remove Portions of Taxiway J	2029	1	\$ 1,500,000.00			-	322586		7.4	
Relocate Runway 10R Approach Lighting System with Sequenced Flashing Lights (ALSF-2)	2029	3	\$ 6,000,000.00		21 light stations	2500	-			
Replace and Relocate Runway 10R VASI with Precision Approach Path Indicators (PAPIs) in a new location	2029	1	\$ 135,000.00		1 papi	-	21971		0.5	
Relocate and Replace Runway 10R Glideslope (GS)	2029	1	\$ 1,100,000.00			-	50907		1.2	
Remove the ALSF-2 support bridge	2030	3	\$ 2,000,000.00			-	3000		0.1	
Amend instrument flight procedures (IFPs)			\$ 200,000.00			-	-	no physical changes		
			\$ 74,370,000.00							











Emission Source	CO	NOx	SO	PM <sub>10</sub>	PM <sub>2.5</sub>	VOC	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	GHGs
NonRoad	0.331	1.124	0.007	0.073	0.071	0.083	2690.392	--	--	--
OnRoad	2.275	0.264	0.002	0.008	0.013	0.075	344.412	0.008	0.021	--
Fugitive	0.578	0.038	0.007	0.485	--	8.873	--	--	--	--
<b>TOTAL</b>	<b>3.18</b>	<b>1.41</b>	<b>0.016</b>	<b>0.61</b>	<b>0.088</b>	<b>9.03</b>	<b>2,755</b>	<b>0.008</b>	<b>0.02</b>	<b>2,758</b>

Total GHG Emissions are in Metric Tons Per Year

Airport Construction Emissions Inventory Tool (ACEIT)  
Version 1.0  
Run Date & Time: 4/2/2025 11:25:21 AM

EMISSIONS INVENTORY - DETAILS:

Non-Road Sources  
Units for Non-Greenhouse Gases Emission: Short Ton  
Units for Greenhouse Gases (CO<sub>2</sub>, CH<sub>4</sub>, and N<sub>2</sub>O) Emission: Metric Ton

Scenario ID	Year	Project	Construction Activity	Equipment	MOVES Equipment	MOVES LOOKUP	Fuel	HP Ave. Age	Load Factor	Hours of Activity	MOVES NONROAD Emissions on Factors g/hp-h						NONROAD Emissions (Tons Per Year)							
											CO	NOx	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	VOC	CO <sub>2</sub>	CO	NOx	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	VOC	CO <sub>2</sub>
											1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	2030	Demolition - Building	Building Demolition	Bob Cat	Tractor/Loaders/Backhoes	Tractor/Loaders/Backhoes75	Diesel	75	0.21	72	0.975281	2.900864	0.001909	0.123484	0.118779	0.189282	696.44545	0.0012191	0.0036262	2.438E-06	0.0001544	0.0001497	0.0002395	0.869256
1	2030	Demolition - Building	Building Demolition	Dump Truck	Off-highway Trucks	Off-highway Trucks600	Diesel	600	0.59	72	0.0197272	0.1125302	0.0014138	0.006362	0.0061711	0.009554	536.89246	0.0005543	0.0031616	3.972E-05	0.0001787	0.0001734	0.0002684	15.081925
1	2030	Demolition - Building	Building Demolition	Excavator with Bucket	Excavators	Excavators175	Diesel	175	0.38	36	0.0499196	0.1691049	0.0014337	0.0109871	0.0106074	0.0062966	536.89882	0.0002929	0.0008929	5.792E-06	4.302E-05	4.367E-05	3.387E-05	2.1984735
1	2030	Demolition - Building	Building Demolition	Generator Sets	Other Construction Equipment	Other Construction Equipment40	Diesel	40	0.43	36	0.2779609	0.3282369	0.0015688	0.020189	0.019834	0.0023871	509.88117	0.0001897	0.0017257	1.071E-05	1.378E-05	1.317E-05	6.306E-05	0.4697213
1	2030	Demolition - Building	Building Demolition	Pickup Truck	Off-highway Trucks	Off-highway Trucks600	Diesel	600	0.39	42	0.0187272	0.1125302	0.0014138	0.006362	0.0061711	0.009554	536.89246	0.0003233	0.0018443	2.317E-05	0.0001043	0.0001011	0.0001596	8.7977893
<b>TOTAL (Tons Per Year)</b>											<b>0.0024893</b>	<b>0.0110506</b>	<b>7.218E-05</b>	<b>0.0004982</b>	<b>0.0004813</b>	<b>0.0007585</b>	<b>27.355235</b>							

On-Road Sources  
Units for Non-Greenhouse Gases Emission: Short Ton  
Units for Greenhouse Gases (CO<sub>2</sub>, CH<sub>4</sub>, and N<sub>2</sub>O) Emission: Metric Ton

Scenario ID	Year	Project	Equipment	Equipment Category	MOVES LOOKUP	On-road Activity	Fuel	Roadway Type	Road Type Distance (miles)	Distance for fug PM	Number of Vehicles	Number of Employees	Number of Days	Project Length	Project Width	Project Area	Building Height	Open Space Height	Number of Trees	Activity Rate	VMT	MOVES On-road Emissions on Factors g/air/mile						On-road Emissions (Tons Per Year)												
																						CO	NOx	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	VOC	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO	NOx	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	VOC	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	
																						1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
1	2030	Demolition - Building	Dump Truck	Single Unit Short-haul Truck	DieselUrban Unrestricted AccessSingle Unit Short-haul Truck	Material Delivery	Diesel	Urban Unrestricted Access	45	0	1	--	65	--	--	1000	30	--	--	0	0.9860284	1.1028206	0.0026477	0.1117018	0.0441787	0.0625157	790.50868	0.0127345	0.1147849	0	0	0	0	0	0	0	0			
1	2030	Demolition - Building	Passenger Car	Passenger Car	GasolineUrban Unrestricted AccessPassenger Car	Employee Commute	Gasoline	Urban Unrestricted Access	30	--	22	22	65	--	--	--	--	--	--	--	42900	2.9296428	0.067802	0.0021438	0.0256082	0.0072476	0.0002027	294.56806	0.0087688	0.0017164	0.1385411	0.0032063	0.0001014	0.0012111	0.0003427	0.0042854	13.929948	0.0004142	8.117E-05	
<b>TOTAL (Tons Per Year)</b>																						<b>0.1385411</b>	<b>0.0032063</b>	<b>0.0001014</b>	<b>0.0012111</b>	<b>0.0003427</b>	<b>0.0042854</b>	<b>13.929948</b>	<b>0.0004142</b>	<b>8.117E-05</b>										

Emission Scope	CO	NOx	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	VOC	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub> e
NonRoad	0.002	0.011	0.0001	0.000	0.0005	0.001	27.355	--	--	--
OnRoad	0.139	0.003	0.0001	0.001	0.0003	0.004	13.930	0.0004	0.0001	--
Fugitive	--	--	--	--	--	--	--	--	--	--
<b>TOTAL</b>	<b>0.14</b>	<b>0.014</b>	<b>0.0002</b>	<b>0.002</b>	<b>0.0008</b>	<b>0.005</b>	<b>37</b>	<b>0.0004</b>	<b>0.0001</b>	<b>37</b>

Total GHG Emissions are in Metric Tons Per Year

APPENDIX D.4

*OPERATIONAL EMISSIONS ANALYSIS  
FOR AIRCRAFT TAXIING*

## 2019 Baseline Aircraft Taxi Emissions

Day to Year Conversion

1.00

Operation Group	Mode	Fuel (ST)	Distance (mi)	Duration	CO (ST)	THC (ST)	TOG (ST)	VOC (ST)	NMHC (ST)	NOx (ST)	nvPM Mass (ST)	nvPM Number	PMSO (ST)	PMFO (ST)	CO2 (ST)	H2O (ST)	SOx (ST)	PM 2.5 (ST)	PM 10 (ST)
2019_Allops_C	Startup	0	0	0.00	0.00	7.52	8.70	8.655	8.70	0.000	--	--	0.00E+00	0.00E+00	0.00	0.00	0.0000	0.0000	0.0000
2019_Allops_C	Taxi Out	6,603	0	151.48	267.15	45.85	52.57	51.937	52.29	26.236	6.87E+04	3.95E+21	2.85E-01	2.67E-01	20,832.00	8,167.80	7.73E+00	0.6280	0.6280
2019_Allops_C	Climb Ground	8,612	35,566	156.72	281.03	53.95	61.91	61.223	61.63	71.213	1.77E+05	5.08E+21	3.72E-01	3.29E-01	27,172.00	10,654.00	1.01E+01	0.8966	0.8966
2019_Allops_C	Climb Below 1000 ft AFE	9,771	146,633	163.80	317.02	54.55	62.54	61.791	62.22	95.620	2.32E+05	5.64E+21	4.21E-01	3.87E-01	30,829.00	12,087.00	1.14E+01	1.0630	1.0630
2019_Allops_C	Climb Below Mixing Height	12,387	350,918	178.00	364.65	55.44	63.49	62.670	63.11	148.710	3.64E+05	7.01E+21	5.34E-01	4.61E-01	39,079.00	15,322.00	1.45E+01	1.3962	1.3962
2019_Allops_C	Climb Below 10000 ft AFE	20,795	1,343,302	226.69	550.43	58.86	67.13	66.054	66.57	308.730	7.41E+05	1.02E+22	8.38E-01	7.11E-01	65,609.00	25,724.00	2.44E+01	2.3655	2.3655
2019_Allops_C	Above 10000 ft AFE	983	157,562	0.70	10.03	1.01	1.17	1.160	1.17	7.601	2.67E+04	--	3.54E-02	2.95E-02	3,100.70	1,215.70	1.1510	0.0944	0.0944
2019_Allops_C	Descend Below 10000 ft AFE	7,485	1,515,001	90.56	398.51	24.06	27.24	26.640	26.89	47.970	1.01E+05	4.48E+21	3.12E-01	3.27E-01	23,616.00	9,259.40	8.77E+00	0.7496	0.7496
2019_Allops_C	Descend Below Mixing Height	6,112	839,416	68.60	296.11	20.29	23.02	22.551	22.75	41.360	7.55E+04	3.98E+21	2.63E-01	2.85E-01	19,284.00	7,560.90	7.16E+00	0.6312	0.6312
2019_Allops_C	Descend Below 1000 ft AFE	3,321	305,550	43.54	205.06	16.43	18.68	18.327	18.48	19.354	3.69E+04	2.02E+21	1.42E-01	1.87E-01	10,478.00	4,108.10	3.89E+00	0.3694	0.3694
2019_Allops_C	Descend Ground	2,386	19,424	30.64	81.90	14.25	16.38	16.211	16.32	11.628	2.66E+04	1.50E+21	1.03E-01	8.79E-02	7,526.40	2,950.90	2.79E+00	0.2201	0.2201
2019_Allops_C	Taxi In	2,051	0	29.04	77.44	14.01	16.11	15.951	16.05	8.173	2.14E+04	1.23E+21	8.86E-02	8.16E-02	6,471.00	2,537.10	2.40E+00	0.1938	0.1938
2019_Allops_C	Full Flight	29,263	3,015,865	317.95	958.96	83.93	95.54	93.855	94.63	364.300	8.68E+05	1.47E+22	1.19E+00	1.07E+00	92,326.00	36,199.00	3.43E+01	3.2095	3.2095
2019_Allops_C	GSE LTO	0	0	22738:49:00.000	65.17	0.00	2.90	2.686	2.56	10.204	--	--	0.00	0.00	0.00	0.00	0.0369	0.5415	0.5684
2019_Allops_C	APU	0	0	98.52	17.59	0.36	0.42	0.419	0.42	7.245	--	--	0.00	0.00	0.00	0.00	1.1348	0.8850	0.8850
		Fuel (ST)	Distance (mi)	Duration	CO (ST)	THC (ST)	TOG (ST)	VOC (ST)	NMHC (ST)	NOx (ST)	nvPM Mass (ST)	nvPM Number	PMSO (ST)	PMFO (ST)	CO2 (ST)	H2O (ST)	SOx (ST)	PM 2.5 (ST)	PM 10 (ST)
<b>Taxi</b>		<b>8,653.97</b>	<b>0.00</b>	<b>180.52</b>	<b>344.59</b>	<b>59.86</b>	<b>68.67</b>	<b>67.89</b>	<b>68.35</b>	<b>34.41</b>	<b>9.00E+04</b>	<b>5.19E+21</b>	<b>0.37</b>	<b>0.35</b>	<b>2.73E+04</b>	<b>10,704.90</b>	<b>1.01E+01</b>	<b>0.82</b>	<b>0.82</b>

\*\*\*Emissions presented in the table above are in (tons/year)\*\*\*

Calendar Year	Operational Category	CO (tons/year)	VOC (tons/year)	NO <sub>x</sub> (tons/year)	SO <sub>x</sub> (tons/year)	PM <sub>10</sub> (tons/year)	PM <sub>2.5</sub> (tons/year)
2019 Baseline	Taxi	344.59	67.89	34.41	10.14	0.822	0.822

## 2028 No Action Aircraft Taxi Emissions

Day to Year Conversion

366.00

\*\*\*NOTE: 2028 is a Leap Year\*\*\*

Operation Group	Mode	Fuel (ST)	Distance (mi)	Duration	CO (ST)	THC (ST)	TOG (ST)	VOC (ST)	NMHC (ST)	NOx (ST)	SOx (ST)	PMSO (ST)	PMFO (ST)	PM10 (ST)	PM2.5 (ST)	nvPM Mass (ST)	nvPM Number	CO2 (ST)	CH4 (ST)	CO2e (ST)	H2O (ST)
2028 Allops_C	Startup	0	0	0.00	0.00	0.03	0.03	0.030	0.03	0.000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00	--	--	0.0000	--	0.00	0.00
2028 Allops_C	Taxi Out	22	0	176.6341	0.87	0.14	0.16	0.162	0.16	0.088	2.87E-02	1.06E-03	8.29E-04	2.24E-03	0.00	0.00	1.71E+19	68.0990	--	68.10	26.70
2028 Allops_C	Climb Ground	29	112	182.87	0.91	0.17	0.20	0.194	0.19	0.261	3.82E-02	1.41E-03	1.01E-03	3.22E-03	0.00	0.00	2.14E+19	90.8440	--	90.84	35.62
2028 Allops_C	Climb Below 1000 ft AFE	33	459	190.79	1.03	0.17	0.20	0.195	0.20	0.352	4.35E-02	1.60E-03	1.16E-03	3.79E-03	0.00	0.00	2.36E+19	103.3300	--	103.33	40.51
2028 Allops_C	Climb Below Mixing Height (3000 ft AFE)	42	1,084	206.61	1.18	0.17	0.20	0.198	0.20	0.550	5.57E-02	2.05E-03	1.34E-03	4.99E-03	0.00	0.00	2.89E+19	132.2900	--	132.29	51.87
2028 Allops_C	Climb Below 10000 ft AFE	70	4,013	259.45	1.76	0.18	0.21	0.206	0.21	1.121	9.31E-02	3.06E-03	2.19E-03	8.65E-03	0.01	0.00	4.45E+19	221.2100	--	221.21	86.73
2028 Allops_C	Above 10000 ft AFE	2	435	0.72	0.02	0.00	0.00	0.003	0.00	0.018	2.96E-03	8.02E-05	6.68E-05	1.47E-04	0.00	--	--	7.0276	--	7.03	2.76
2028 Allops_C	Descend Below 10000 ft AFE	25	4,657	94.00	1.24	0.07	0.08	0.077	0.08	0.166	3.31E-02	1.16E-03	1.05E-03	2.69E-03	0.00	0.00	2.26E+19	78.6840	--	78.68	30.85
2028 Allops_C	Descend Below Mixing Height (3000 ft AFE)	21	2,619	71.41	0.91	0.06	0.07	0.067	0.07	0.146	2.75E-02	1.01E-03	9.24E-04	2.36E-03	0.00	0.00	2.00E+19	65.3660	--	65.37	25.63
2028 Allops_C	Descend Below 1000 ft AFE	12	968	46.84	0.63	0.05	0.06	0.057	0.06	0.072	1.53E-02	5.61E-04	6.15E-04	1.39E-03	0.00	0.00	1.00E+19	36.4230	--	36.42	14.28
2028 Allops_C	Descend Ground	8	70	31.84	0.28	0.04	0.05	0.051	0.05	0.041	1.06E-02	3.90E-04	2.83E-04	8.15E-04	0.00	0.00	6.86E+18	25.1550	--	25.16	9.86
2028 Allops_C	Taxi In	7	0	30.06512	0.26	0.04	0.05	0.050	0.05	0.027	8.89E-03	3.28E-04	2.56E-04	6.93E-04	0.00	0.00	5.31E+18	21.1350	--	21.14	8.29
2028 Allops_C	Full Flight	97	9,104	354.17	3.02	0.26	0.29	0.286	0.29	1.305	1.29E-01	4.31E-03	3.30E-03	1.15E-02	0.01	0.00	6.71E+19	306.9300	--	306.93	120.34
2028 Allops_C	APU	3	--	119.58	0.02	0.00	0.00	0.001	0.00	0.022	3.01E-03	--	--	0.00	0.00	--	--	10.7650	--	10.77	--
2028 Allops_C	GSE LTO	--	--	26775:38:00.000	0.32	0.01	0.01	0.009	0.01	0.009	6.09E-05	--	--	0.00	0.00	--	--	4.4214	0.0009	4.45	--
		Fuel (ST)	Distance (mi)	Duration	CO (ST)	THC (ST)	TOG (ST)	VOC (ST)	NMHC (ST)	NOx (ST)	SOx (ST)	PMSO (ST)	PMFO (ST)	PM10 (ST)	PM2.5 (ST)	nvPM Mass (ST)	nvPM Number	CO2 (ST)	CH4 (ST)	CO2e (ST)	H2O (ST)
<b>Taxi</b>		<b>28.28</b>	<b>0.00</b>	<b>206.70</b>	<b>1.13</b>	<b>0.19</b>	<b>0.21</b>	<b>0.21</b>	<b>0.21</b>	<b>0.12</b>	<b>0.04</b>	<b>1.38E-03</b>	<b>1.09E-03</b>	<b>2.93E-03</b>	<b>2.93E-03</b>	<b>0.00</b>	<b>2.24E+19</b>	<b>89.23</b>	<b>--</b>	<b>89.23</b>	<b>34.99</b>

\*\*\*Emissions presented in the table above are in (tons/day)\*\*\*

Calendar Year	Operational Category	CO (tons/year)	VOC (tons/year)	NOx (tons/year)	SOx (tons/year)	PM10 (tons/year)	PM2.5 (tons/year)
2028 No Action	Taxi	413.94	77.49	42.12	13.74	1.073	1.073

## 2028 Proposed Action Aircraft Taxi Emissions

Day to Year Conversion

366.00

\*\*\*NOTE: 2028 is a Leap Year\*\*\*

Operation Group	Mode	Fuel (ST)	Distance (mi)	Duration	CO (ST)	THC (ST)	TOG (ST)	VOC (ST)	NMHC (ST)	NOx (ST)	SOx (ST)	PMSO (ST)	PMFO (ST)	PM10 (ST)	PM2.5 (ST)	nvPM Mass (ST)	nvPM Number	CO2 (ST)	CH4 (ST)	CO2e (ST)	H2O (ST)
2028PA_Allops_C	Startup	0	0	0.00	0.00	0.03	0.03	0.030	0.03	0.000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00	--	--	0.0000	--	0.00	0.00
2028PA_Allops_C	Taxi Out	22	0	230.6760	0.87	0.14	0.16	0.161	0.16	0.088	2.86E-02	1.06E-03	8.27E-04	2.23E-03	0.00	0.00	1.71E+19	68.0750	--	68.08	26.69
2028PA_Allops_C	Climb Ground	29	113	238.68	0.91	0.17	0.20	0.193	0.19	0.261	3.82E-02	1.41E-03	1.01E-03	3.22E-03	0.00	0.00	2.14E+19	90.8710	--	90.87	35.63
2028PA_Allops_C	Climb Below 1000 ft AFE	33	459	248.50	1.03	0.17	0.20	0.195	0.20	0.353	4.35E-02	1.60E-03	1.15E-03	3.79E-03	0.00	0.00	2.36E+19	103.3500	--	103.35	40.52
2028PA_Allops_C	Climb Below Mixing Height (3000 ft AFE)	42	1,084	268.83	1.17	0.17	0.20	0.197	0.20	0.551	5.57E-02	2.05E-03	1.34E-03	4.99E-03	0.00	0.00	2.89E+19	132.2900	--	132.29	51.87
2028PA_Allops_C	Climb Below 10000 ft AFE	70	3,984	336.97	1.75	0.18	0.21	0.206	0.21	1.120	9.28E-02	3.06E-03	2.18E-03	8.64E-03	0.01	0.00	4.45E+19	220.6200	--	220.62	86.50
2028PA_Allops_C	Above 10000 ft AFE	2	464	1.81	0.02	0.00	0.00	0.003	0.00	0.019	3.14E-03	8.51E-05	7.09E-05	1.56E-04	0.00	--	--	7.4540	--	7.45	2.92
2028PA_Allops_C	Descend Below 10000 ft AFE	25	4,573	122.90	1.20	0.07	0.08	0.076	0.08	0.166	3.30E-02	1.16E-03	1.01E-03	2.65E-03	0.00	0.00	2.26E+19	78.3200	--	78.32	30.71
2028PA_Allops_C	Descend Below Mixing Height (3000 ft AFE)	21	2,534	93.67	0.87	0.06	0.07	0.065	0.07	0.145	2.73E-02	1.00E-03	8.87E-04	2.31E-03	0.00	0.00	2.00E+19	65.0050	--	65.01	25.49
2028PA_Allops_C	Descend Below 1000 ft AFE	11	899	61.89	0.59	0.05	0.06	0.055	0.06	0.072	1.52E-02	5.57E-04	5.80E-04	1.35E-03	0.00	0.00	9.97E+18	36.1860	--	36.19	14.19
2028PA_Allops_C	Descend Ground	8	69	42.57	0.27	0.04	0.05	0.050	0.05	0.041	1.05E-02	3.88E-04	2.77E-04	8.07E-04	0.00	0.00	6.84E+18	25.0140	--	25.01	9.81
2028PA_Allops_C	Taxi In	7	0	40.3643	0.25	0.04	0.05	0.049	0.05	0.027	8.83E-03	3.26E-04	2.51E-04	6.86E-04	0.00	0.00	5.29E+18	20.9980	--	21.00	8.23
2028PA_Allops_C	Full Flight	97	9,020	11080:11:24.340	2.97	0.25	0.29	0.284	0.29	1.304	1.29E-01	4.30E-03	3.26E-03	1.14E-02	0.01	0.00	6.71E+19	306.4000	--	306.40	120.13
2028PA_Allops_C	APU	3	--	152.78	0.02	0.00	0.00	0.001	0.00	0.022	3.01E-03	--	--	0.00	0.00	--	--	10.7650	--	10.77	--
2028PA_Allops_C	GSE LTO	--	--	35149:05:00.000	0.32	0.01	0.01	0.009	0.01	0.009	6.09E-05	--	--	0.00	0.00	--	--	4.4214	0.0009	4.45	--
		Fuel (ST)	Distance (mi)	Duration	CO (ST)	THC (ST)	TOG (ST)	VOC (ST)	NMHC (ST)	NOx (ST)	SOx (ST)	PMSO (ST)	PMFO (ST)	PM10 (ST)	PM2.5 (ST)	nvPM Mass (ST)	nvPM Number	CO2 (ST)	CH4 (ST)	CO2e (ST)	H2O (ST)
<b>Taxi</b>		<b>28.23</b>	<b>0.00</b>	<b>271.04</b>	<b>1.13</b>	<b>0.19</b>	<b>0.21</b>	<b>0.21</b>	<b>0.21</b>	<b>0.11</b>	<b>0.04</b>	<b>1.38E-03</b>	<b>1.08E-03</b>	<b>2.92E-03</b>	<b>2.92E-03</b>	<b>0.00</b>	<b>2.23E+19</b>	<b>89.07</b>	<b>--</b>	<b>89.07</b>	<b>34.92</b>

\*\*\*Emissions presented in the table above are in (tons/day)\*\*\*

Calendar Year	Operational Category	CO (tons/year)	VOC (tons/year)	NOx (tons/year)	SOx (tons/year)	PM10 (tons/year)	PM2.5 (tons/year)
2028 Proposed Action	Taxi	411.91	76.94	42.07	13.72	1.069	1.069

**2029 No Action Aircraft Taxi Emissions**

Day to Year Conversion

365.00

Operation Group	Mode	Fuel (ST)	Distance (mi)	Duration	CO (ST)	THC (ST)	TOG (ST)	VOC (ST)	NMHC (ST)	NOx (ST)	SOx (ST)	PMSO (ST)	PMFO (ST)	PM10 (ST)	PM2.5 (ST)	nvPM Mass (ST)	nvPM Number	CO2 (ST)	CH4 (ST)	CO2e (ST)	H2O (ST)
2029 Allops	Startup	0	0	0.00	0.00	0.03	0.03	0.031	0.03	0.000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00	--	--	0.0000	--	0.00	0.00
2029 Allops	Taxi Out	22	0	176.63	0.89	0.14	0.17	0.164	0.16	0.089	2.91E-02	1.07E-03	8.40E-04	2.27E-03	0.00	0.00	1.73E+19	69.1180	--	69.12	27.10
2029 Allops	Climb Ground	29	114	182.87	0.93	0.17	0.20	0.196	0.20	0.265	3.88E-02	1.43E-03	1.02E-03	3.27E-03	0.00	0.00	2.18E+19	92.2000	--	92.20	36.15
2029 Allops	Climb Below 1000 ft AFE	33	467	190.79	1.04	0.17	0.20	0.198	0.20	0.358	4.41E-02	1.62E-03	1.17E-03	3.84E-03	0.00	0.00	2.40E+19	104.8800	--	104.88	41.12
2029 Allops	Climb Below Mixing Height (3000 ft AFE)	43	1,103	206.61	1.20	0.18	0.20	0.200	0.20	0.559	5.65E-02	2.08E-03	1.36E-03	5.06E-03	0.01	0.00	2.93E+19	134.2900	--	134.29	52.65
2029 Allops	Climb Below 10000 ft AFE	71	4,081	259.45	1.79	0.19	0.21	0.209	0.21	1.138	9.45E-02	3.11E-03	2.22E-03	8.78E-03	0.01	0.00	4.53E+19	224.5800	--	224.58	88.05
2029 Allops	Above 10000 ft AFE	2	436	0.72	0.02	0.00	0.00	0.003	0.00	0.018	2.96E-03	8.04E-05	6.70E-05	1.47E-04	0.00	--	--	7.0470	--	7.05	2.76
2029 Allops	Descend Below 10000 ft AFE	25	4,731	94.00	1.26	0.07	0.08	0.078	0.08	0.169	3.36E-02	1.18E-03	1.07E-03	2.73E-03	0.00	0.00	2.30E+19	79.8670	--	79.87	31.31
2029 Allops	Descend Below Mixing Height (3000 ft AFE)	21	2,663	71.41	0.93	0.06	0.07	0.068	0.07	0.148	2.79E-02	1.03E-03	9.40E-04	2.40E-03	0.00	0.00	2.04E+19	66.3680	--	66.37	26.02
2029 Allops	Descend Below 1000 ft AFE	12	986	46.84	0.64	0.05	0.06	0.057	0.06	0.074	1.56E-02	5.69E-04	6.26E-04	1.41E-03	0.00	0.00	1.02E+19	36.9890	--	36.99	14.50
2029 Allops	Descend Ground	8	71	31.84	0.28	0.05	0.05	0.051	0.05	0.042	1.07E-02	3.96E-04	2.86E-04	8.27E-04	0.00	0.00	6.98E+18	25.5330	--	25.53	10.01
2029 Allops	Taxi In	7	0	30.07	0.26	0.04	0.05	0.051	0.05	0.028	9.02E-03	3.33E-04	2.59E-04	7.03E-04	0.00	0.00	5.40E+18	21.4490	--	21.45	8.41
2029 Allops	Full Flight	99	9,248	354.17	3.07	0.26	0.30	0.290	0.29	1.325	1.31E-01	4.37E-03	3.35E-03	1.17E-02	0.01	0.00	6.82E+19	311.4900	--	311.49	122.13
2029 Allops	APU	3	--	119.58	0.02	0.00	0.00	0.001	0.00	0.022	3.06E-03	--	--	0.00	0.00	--	--	10.9440	--	10.94	--
2029 Allops	GSE LTO	--	--	26775:38:00.0	0.32	0.01	0.01	0.010	0.01	0.009	6.18E-05	--	--	0.00	0.00	--	--	4.4900	0.0010	4.52	--
		Fuel (ST)	Distance (mi)	Duration	CO (ST)	THC (ST)	TOG (ST)	VOC (ST)	NMHC (ST)	NOx (ST)	SOx (ST)	PMSO (ST)	PMFO (ST)	PM10 (ST)	PM2.5 (ST)	nvPM Mass (ST)	nvPM Number	CO2 (ST)	CH4 (ST)	CO2e (ST)	H2O (ST)
<b>Taxi</b>		<b>28.71</b>	<b>0.00</b>	<b>206.70</b>	<b>1.15</b>	<b>0.19</b>	<b>0.22</b>	<b>0.21</b>	<b>0.22</b>	<b>0.12</b>	<b>0.04</b>	<b>1.41E-03</b>	<b>1.10E-03</b>	<b>2.97E-03</b>	<b>2.97E-03</b>	<b>0.00</b>	<b>2.28E+19</b>	<b>90.57</b>	<b>--</b>	<b>90.57</b>	<b>35.51</b>

\*\*\*Emissions presented in the table above are in (tons/day)\*\*\*

Calendar Year	Operational Category	CO (tons/year)	NOx (tons/year)	SOx (tons/year)	PM10 (tons/year)	PM2.5 (tons/year)
2029 No Action	Taxi	418.75	78.26	42.66	13.91	1.086

## 2029 Proposed Action Aircraft Taxi Emissions

Day to Year Conversion

365.00

Operation Group	Mode	Fuel (ST)	Distance (mi)	Duration	CO (ST)	THC (ST)	TOG (ST)	VOC (ST)	NMHC (ST)	NOx (ST)	SOx (ST)	PMSO (ST)	PMFO (ST)	PM10 (ST)	PM2.5 (ST)	nvPM Mass (ST)	nvPM Number	CO2 (ST)	CH4 (ST)	CO2e (ST)	H2O (ST)
2029PA_Allops_C	Startup	0	0	0.00	0.00	0.03	0.03	0.031	0.03	0.000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00	--	--	0.0000	--	0.00	0.00
2029PA_Allops_C	Taxi Out	22	0	362.30	0.89	0.14	0.17	0.163	0.16	0.089	2.91E-02	1.07E-03	8.39E-04	2.27E-03	0.00	0.00	1.74E+19	69.2000	--	69.20	27.13
2029PA_Allops_C	Climb Ground	29	114	374.73	0.93	0.17	0.20	0.196	0.20	0.266	3.88E-02	1.43E-03	1.02E-03	3.27E-03	0.00	0.00	2.18E+19	92.3410	--	92.34	36.21
2029PA_Allops_C	Climb Below 1000 ft AFE	33	467	389.15	1.04	0.17	0.20	0.198	0.20	0.358	4.42E-02	1.63E-03	1.17E-03	3.85E-03	0.00	0.00	2.40E+19	105.0100	--	105.01	41.17
2029PA_Allops_C	Climb Below Mixing Height (3000 ft AFE)	43	1,102	10102:49:37.700	1.19	0.18	0.20	0.200	0.20	0.559	5.65E-02	2.08E-03	1.36E-03	5.07E-03	0.01	0.00	2.94E+19	134.4000	--	134.40	52.70
2029PA_Allops_C	Climb Below 10000 ft AFE	71	4,047	12654:11:12.460	1.78	0.19	0.21	0.209	0.21	1.137	9.42E-02	3.10E-03	2.21E-03	8.77E-03	0.01	0.00	4.53E+19	224.0100	--	224.01	87.83
2029PA_Allops_C	Above 10000 ft AFE	2	469	2.14	0.02	0.00	0.00	0.003	0.00	0.019	3.17E-03	8.60E-05	7.17E-05	1.58E-04	0.00	--	--	7.5356	--	7.54	2.95
2029PA_Allops_C	Descend Below 10000 ft AFE	25	4,633	191.05	1.21	0.07	0.08	0.077	0.08	0.168	3.35E-02	1.17E-03	1.03E-03	2.69E-03	0.00	0.00	2.30E+19	79.5090	--	79.51	31.17
2029PA_Allops_C	Descend Below Mixing Height (3000 ft AFE)	21	2,564	144.92	0.88	0.06	0.07	0.066	0.07	0.148	2.78E-02	1.02E-03	8.98E-04	2.35E-03	0.00	0.00	2.03E+19	66.0140	--	66.01	25.88
2029PA_Allops_C	Descend Below 1000 ft AFE	12	905	94.82	0.59	0.05	0.06	0.056	0.06	0.073	1.55E-02	5.66E-04	5.85E-04	1.36E-03	0.00	0.00	1.02E+19	36.7790	--	36.78	14.42
2029PA_Allops_C	Descend Ground	8	70	65.79	0.28	0.04	0.05	0.050	0.05	0.042	1.07E-02	3.94E-04	2.81E-04	8.20E-04	0.00	0.00	6.96E+18	25.4370	--	25.44	9.97
2029PA_Allops_C	Taxi In	7	0	62.34	0.26	0.04	0.05	0.050	0.05	0.028	8.99E-03	3.31E-04	2.54E-04	6.97E-04	0.00	0.00	5.39E+18	21.3570	--	21.36	8.37
2029PA_Allops_C	Full Flight	99	9,150	17290:46:44.990	3.02	0.26	0.29	0.288	0.29	1.325	1.31E-01	4.36E-03	3.31E-03	1.16E-02	0.01	0.00	6.82E+19	311.0600	--	311.06	121.96
2029PA_Allops_C	APU	3	--	240.49	0.02	0.00	0.00	0.001	0.00	0.022	3.06E-03	--	--	0.00	0.00	--	--	10.9440	--	10.94	--
2029PA_Allops_C	GSE LTO	--	--	54416:14:00.000	0.32	0.01	0.01	0.010	0.01	0.009	6.18E-05	--	--	0.00	0.00	--	--	4.4900	0.0010	4.52	--
		Fuel (ST)	Distance (mi)	Duration	CO (ST)	THC (ST)	TOG (ST)	VOC (ST)	NMHC (ST)	NOx (ST)	SOx (ST)	PMSO (ST)	PMFO (ST)	PM10 (ST)	PM2.5 (ST)	nvPM Mass (ST)	nvPM Number	CO2 (ST)	CH4 (ST)	CO2e (ST)	H2O (ST)
<b>Taxi</b>		<b>28.70</b>	<b>0.00</b>	<b>424.63</b>	<b>1.14</b>	<b>0.19</b>	<b>0.22</b>	<b>0.21</b>	<b>0.21</b>	<b>0.12</b>	<b>0.04</b>	<b>1.41E-03</b>	<b>1.09E-03</b>	<b>2.97E-03</b>	<b>2.97E-03</b>	<b>0.00</b>	<b>2.28E+19</b>	<b>90.56</b>	<b>--</b>	<b>90.56</b>	<b>35.51</b>

\*\*\*Emissions presented in the table above are in (tons/day)\*\*\*

Calendar Year	Operational Category	CO (tons/year)	VOC (tons/year)	NOx (tons/year)	SOx (tons/year)	PM10 (tons/year)	PM2.5 (tons/year)
2029 Proposed Action	Taxi	417.30	77.82	42.68	13.91	1.083	1.083

## 2030 No Action Aircraft Taxi Emissions

Day to Year Conversion

365.00

Operation Group	Mode	Fuel (ST)	Distance (mi)	Duration	CO (ST)	THC (ST)	TOG (ST)	VOC (ST)	NMHC (ST)	NOx (ST)	SOx (ST)	PMSO (ST)	PMFO (ST)	PM10 (ST)	PM2.5 (ST)	nvPM Mass (ST)	nvPM Number	CO2 (ST)	CH4 (ST)	CO2e (ST)	H2O (ST)
2030 Allops	Startup	0	0	0.00	0.00	0.03	0.03	0.031	0.03	0.000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00	--	--	0.0000	--	0.00	0.00
2030 Allops	Taxi Out	22	0	176.63	0.90	0.15	0.17	0.165	0.17	0.090	2.94E-02	1.09E-03	8.49E-04	2.30E-03	0.00	0.00	1.76E+19	69.9410	--	69.94	27.42
2030 Allops	Climb Ground	30	116	182.87	0.94	0.17	0.20	0.198	0.20	0.268	3.93E-02	1.45E-03	1.03E-03	3.31E-03	0.00	0.00	2.21E+19	93.2920	--	93.29	36.58
2030 Allops	Climb Below 1000 ft AFE	34	474	190.79	1.06	0.18	0.20	0.200	0.20	0.362	4.46E-02	1.64E-03	1.19E-03	3.89E-03	0.00	0.00	2.43E+19	106.1200	--	106.12	41.61
2030 Allops	Climb Below Mixing Height (3000 ft AFE)	43	1,119	206.61	1.21	0.18	0.21	0.202	0.20	0.566	5.72E-02	2.10E-03	1.38E-03	5.13E-03	0.01	0.00	2.97E+19	135.9100	--	135.91	53.29
2030 Allops	Climb Below 10000 ft AFE	72	4,140	259.45	1.81	0.19	0.21	0.212	0.21	1.153	9.56E-02	3.15E-03	2.24E-03	8.89E-03	0.01	0.00	4.59E+19	227.3100	--	227.31	89.12
2030 Allops	Above 10000 ft AFE	2	436	0.72	0.02	0.00	0.00	0.003	0.00	0.018	2.96E-03	8.04E-05	6.70E-05	1.47E-04	0.00	--	--	7.0470	--	7.05	2.76
2030 Allops	Descend Below 10000 ft AFE	26	4,795	94.00	1.28	0.07	0.08	0.079	0.08	0.171	3.40E-02	1.19E-03	1.08E-03	2.77E-03	0.00	0.00	2.33E+19	80.8280	--	80.83	31.69
2030 Allops	Descend Below Mixing Height (3000 ft AFE)	21	2,701	71.41	0.94	0.06	0.07	0.068	0.07	0.150	2.83E-02	1.04E-03	9.54E-04	2.43E-03	0.00	0.00	2.07E+19	67.1850	--	67.19	26.34
2030 Allops	Descend Below 1000 ft AFE	12	1,002	46.84	0.65	0.05	0.06	0.058	0.06	0.074	1.58E-02	5.77E-04	6.35E-04	1.43E-03	0.00	0.00	1.03E+19	37.4510	--	37.45	14.68
2030 Allops	Descend Ground	8	72	31.84	0.28	0.05	0.05	0.052	0.05	0.042	1.09E-02	4.01E-04	2.90E-04	8.37E-04	0.00	0.00	7.08E+18	25.8390	--	25.84	10.13
2030 Allops	Taxi In	7	0	30.07	0.26	0.05	0.05	0.051	0.05	0.028	9.13E-03	3.37E-04	2.62E-04	7.12E-04	0.00	0.00	5.48E+18	21.7030	--	21.70	8.51
2030 Allops	Full Flight	100	9,371	354.17	3.12	0.26	0.30	0.293	0.30	1.341	1.33E-01	4.42E-03	3.40E-03	1.18E-02	0.01	0.00	6.92E+19	315.1800	--	315.18	123.57
2030 Allops	APU	4	--	119.58	0.02	0.00	0.00	0.001	0.00	0.023	3.10E-03	--	--	0.00	0.00	--	--	11.0920	--	11.09	--
2030 Allops	GSE LTO	--	--	26775:38:00.00	0.33	0.02	0.02	0.015	0.01	0.010	6.25E-05	--	--	0.00	0.00	--	--	4.6841	0.0025	4.75	--
		Fuel (ST)	Distance (mi)	Duration	CO (ST)	THC (ST)	TOG (ST)	VOC (ST)	NMHC (ST)	NOx (ST)	SOx (ST)	PMSO (ST)	PMFO (ST)	PM10 (ST)	PM2.5 (ST)	nvPM Mass (ST)	nvPM Number	CO2 (ST)	CH4 (ST)	CO2e (ST)	H2O (ST)
<b>Taxi</b>		<b>29.05</b>	<b>0.00</b>	<b>206.70</b>	<b>1.16</b>	<b>0.19</b>	<b>0.22</b>	<b>0.22</b>	<b>0.22</b>	<b>0.12</b>	<b>0.04</b>	<b>1.42E-03</b>	<b>1.11E-03</b>	<b>3.01E-03</b>	<b>3.01E-03</b>	<b>0.00</b>	<b>2.31E+19</b>	<b>91.64</b>	<b>--</b>	<b>91.64</b>	<b>35.93</b>

\*\*\*Emissions presented in the table above are in (tons/day)\*\*\*

Calendar Year	Operational Category	CO (tons/year)	VOC (tons/year)	NOx (tons/year)	SOx (tons/year)	PM10 (tons/year)	PM2.5 (tons/year)
2030 No Action	Taxi	423.68	79.07	43.19	14.07	1.098	1.098

## 2030 Proposed Action Aircraft Taxi Emissions

Day to Year Conversion

365.00

Operation Group	Mode	Fuel (ST)	Distance (mi)	Duration	CO (ST)	THC (ST)	TOG (ST)	VOC (ST)	NMHC (ST)	NOx (ST)	SOx (ST)	PMSO (ST)	PMFO (ST)	PM10 (ST)	PM2.5 (ST)	nvPM Mass (ST)	nvPM Number	CO2 (ST)	CH4 (ST)	CO2e (ST)	H2O (ST)
2030 Allops C	Startup	0	0	0.00	0.00	0.03	0.03	0.031	0.03	0.000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00	--	--	0.0000	--	0.00	0.00
2030 Allops C	Taxi Out	22	0	178.53	0.90	0.15	0.17	0.167	0.17	0.091	2.96E-02	1.09E-03	8.56E-04	2.32E-03	0.00	0.00	1.77E+19	70.4560	--	70.46	27.62
2030 Allops C	Climb Ground	30	116	184.77	0.94	0.18	0.20	0.200	0.20	0.269	3.95E-02	1.46E-03	1.04E-03	3.32E-03	0.00	0.00	2.22E+19	93.8070	--	93.81	36.78
2030 Allops C	Climb Below 1000 ft AFE	34	474	192.69	1.06	0.18	0.20	0.201	0.20	0.363	4.49E-02	1.65E-03	1.19E-03	3.91E-03	0.00	0.00	2.44E+19	106.6400	--	106.64	41.81
2030 Allops C	Climb Below Mixing Height (3000 ft AFE)	43	1,119	208.51	1.22	0.18	0.21	0.204	0.21	0.567	5.74E-02	2.11E-03	1.38E-03	5.14E-03	0.01	0.00	2.99E+19	136.4200	--	136.42	53.49
2030 Allops C	Climb Below 10000 ft AFE	72	4,140	261.35	1.82	0.19	0.22	0.213	0.21	1.153	9.58E-02	3.16E-03	2.25E-03	8.91E-03	0.01	0.00	4.60E+19	227.8200	--	227.82	89.32
2030 Allops C	Above 10000 ft AFE	2	436	0.72	0.02	0.00	0.00	0.003	0.00	0.018	2.96E-03	8.04E-05	6.70E-05	1.47E-04	0.00	--	--	7.0470	--	7.05	2.76
2030 Allops C	Descend Below 10000 ft AFE	26	4,795	95.00	1.29	0.07	0.08	0.081	0.08	0.172	3.43E-02	1.21E-03	1.09E-03	2.80E-03	0.00	0.00	2.35E+19	81.6180	--	81.62	32.00
2030 Allops C	Descend Below Mixing Height (3000 ft AFE)	22	2,701	72.41	0.95	0.06	0.07	0.070	0.07	0.151	2.86E-02	1.05E-03	9.63E-04	2.45E-03	0.00	0.00	2.08E+19	67.9750	--	67.98	26.65
2030 Allops C	Descend Below 1000 ft AFE	12	1,002	47.84	0.66	0.05	0.06	0.060	0.06	0.075	1.61E-02	5.89E-04	6.45E-04	1.45E-03	0.00	0.00	1.05E+19	38.2410	--	38.24	14.99
2030 Allops C	Descend Ground	8	72	32.84	0.29	0.05	0.05	0.054	0.05	0.043	1.12E-02	4.13E-04	2.99E-04	8.63E-04	0.00	0.00	7.26E+18	26.6290	--	26.63	10.44
2030 Allops C	Taxi In	7	0	31.07	0.27	0.05	0.05	0.053	0.05	0.029	9.46E-03	3.49E-04	2.71E-04	7.37E-04	0.00	0.00	5.67E+18	22.4930	--	22.49	8.82
2030 Allops C	Full Flight	100	9,371	357.07	3.14	0.27	0.30	0.297	0.30	1.343	1.33E-01	4.44E-03	3.41E-03	1.19E-02	0.01	0.00	6.95E+19	316.4900	--	316.49	124.09
2030 Allops C	APU	4	--	119.58	0.02	0.00	0.00	0.001	0.00	0.023	3.10E-03	--	--	0.00	0.00	--	--	11.0920	--	11.09	--
2030 Allops C	GSE LTO	--	--	26775:38:00.00	0.33	0.02	0.02	0.015	0.01	0.010	6.25E-05	--	--	0.00	0.00	--	--	4.6841	0.0025	4.75	--
		Fuel (ST)	Distance (mi)	Duration	CO (ST)	THC (ST)	TOG (ST)	VOC (ST)	NMHC (ST)	NOx (ST)	SOx (ST)	PMSO (ST)	PMFO (ST)	PM10 (ST)	PM2.5 (ST)	nvPM Mass (ST)	nvPM Number	CO2 (ST)	CH4 (ST)	CO2e (ST)	H2O (ST)
<b>Taxi</b>		<b>29.46</b>	<b>0.00</b>	<b>209.60</b>	<b>1.18</b>	<b>0.19</b>	<b>0.22</b>	<b>0.22</b>	<b>0.22</b>	<b>0.12</b>	<b>0.04</b>	<b>1.44E-03</b>	<b>1.13E-03</b>	<b>3.05E-03</b>	<b>3.05E-03</b>	<b>0.00</b>	<b>2.34E+19</b>	<b>92.95</b>	<b>--</b>	<b>92.95</b>	<b>36.44</b>

\*\*\*Emissions presented in the table above are in (tons/day)\*\*\*

Calendar Year	Operational Category	CO (tons/year)	VOC (tons/year)	NO <sub>x</sub> (tons/year)	SO <sub>x</sub> (tons/year)	PM <sub>10</sub> (tons/year)	PM <sub>2.5</sub> (tons/year)
2030 Proposed Action	Taxi	429.68	80.27	43.77	14.27	1.114	1.114

## 2035 No Action Aircraft Taxi Emissions

Day to Year Conversion

365.00

Operation Group	Mode	Fuel (ST)	Distance (mi)	Duration	CO (ST)	THC (ST)	TOG (ST)	VOC (ST)	NMHC (ST)	NOx (ST)	SOx (ST)	PMSO (ST)	PMFO (ST)	PM10 (ST)	PM2.5 (ST)	nvPM Mass (ST)	nvPM Number	CO2 (ST)	CH4 (ST)	CO2e (ST)	H2O (ST)
2035 Allops	Startup	0	0	0.00	0.00	0.03	0.03	0.033	0.03	0.000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00	--	--	0.0000	--	0.00	0.00
2035 Allops	Taxi Out	23	0	176.63	0.95	0.15	0.18	0.174	0.18	0.095	3.09E-02	1.14E-03	8.96E-04	2.42E-03	0.00	0.00	1.87E+19	73.4230	--	73.42	28.79
2035 Allops	Climb Ground	31	122	182.87	0.99	0.18	0.21	0.209	0.21	0.282	4.12E-02	1.52E-03	1.09E-03	3.48E-03	0.00	0.00	2.34E+19	97.8910	--	97.89	38.38
2035 Allops	Climb Below 1000 ft AFE	35	509	190.79	1.12	0.19	0.21	0.211	0.21	0.381	4.69E-02	1.72E-03	1.25E-03	4.09E-03	0.00	0.00	2.57E+19	111.3700	--	111.37	43.66
2035 Allops	Climb Below Mixing Height (3000 ft AFE)	45	1,202	206.61	1.29	0.19	0.22	0.213	0.21	0.595	6.01E-02	2.21E-03	1.46E-03	5.40E-03	0.01	0.00	3.14E+19	142.7400	--	142.74	55.96
2035 Allops	Climb Below 10000 ft AFE	76	4,431	259.45	1.96	0.20	0.23	0.223	0.22	1.212	1.00E-01	3.31E-03	2.37E-03	9.37E-03	0.01	0.00	4.84E+19	238.8000	--	238.80	93.63
2035 Allops	Above 10000 ft AFE	2	436	0.72	0.02	0.00	0.00	0.003	0.00	0.018	2.97E-03	8.04E-05	6.70E-05	1.47E-04	0.00	--	--	7.0474	--	7.05	2.76
2035 Allops	Descend Below 10000 ft AFE	27	5,108	94.00	1.39	0.08	0.09	0.084	0.08	0.179	3.58E-02	1.26E-03	1.17E-03	2.94E-03	0.00	0.00	2.47E+19	84.9970	--	85.00	33.33
2035 Allops	Descend Below Mixing Height (3000 ft AFE)	22	2,890	71.41	1.02	0.07	0.07	0.073	0.07	0.158	2.97E-02	1.09E-03	1.03E-03	2.59E-03	0.00	0.00	2.19E+19	70.7060	--	70.71	27.72
2035 Allops	Descend Below 1000 ft AFE	13	1,089	46.84	0.70	0.06	0.06	0.061	0.06	0.078	1.66E-02	6.07E-04	6.86E-04	1.52E-03	0.00	0.00	1.10E+19	39.4590	--	39.46	15.47
2035 Allops	Descend Ground	9	77	31.84	0.30	0.05	0.06	0.055	0.06	0.044	1.14E-02	4.21E-04	3.06E-04	8.83E-04	0.00	0.00	7.50E+18	27.1250	--	27.13	10.64
2035 Allops	Taxi In	7	0	30.07	0.28	0.05	0.05	0.054	0.05	0.029	9.58E-03	3.53E-04	2.76E-04	7.50E-04	0.00	0.00	5.81E+18	22.7710	--	22.77	8.93
2035 Allops	Full Flight	105	9,974	354.17	3.37	0.28	0.32	0.310	0.31	1.410	1.39E-01	4.64E-03	3.60E-03	1.25E-02	0.01	0.00	7.31E+19	330.8500	--	330.85	129.72
2035 Allops	APU	4	--	119.58	0.02	0.00	0.00	0.001	0.00	0.024	3.28E-03	--	--	0.00	0.00	--	--	11.7230	--	11.72	--
2035 Allops	GSE LTO	--	--	26775:38:00.00	0.36	0.02	0.02	0.016	0.01	0.010	6.57E-05	--	--	0.00	0.00	--	--	4.9362	0.0027	5.01	--
		Fuel (ST)	Distance (mi)	Duration	CO (ST)	THC (ST)	TOG (ST)	VOC (ST)	NMHC (ST)	NOx (ST)	SOx (ST)	PMSO (ST)	PMFO (ST)	PM10 (ST)	PM2.5 (ST)	nvPM Mass (ST)	nvPM Number	CO2 (ST)	CH4 (ST)	CO2e (ST)	H2O (ST)
<b>Taxi</b>		<b>30.49</b>	<b>0.00</b>	<b>206.70</b>	<b>1.23</b>	<b>0.20</b>	<b>0.23</b>	<b>0.23</b>	<b>0.23</b>	<b>0.12</b>	<b>0.04</b>	<b>1.49E-03</b>	<b>1.17E-03</b>	<b>3.17E-03</b>	<b>3.17E-03</b>	<b>0.00</b>	<b>2.45E+19</b>	<b>96.19</b>	<b>--</b>	<b>96.19</b>	<b>37.72</b>

\*\*\*Emissions presented in the table above are in (tons/day)\*\*\*

Calendar Year	Operational Category	CO (tons/year)	VOC (tons/year)	NO <sub>x</sub> (tons/year)	SO <sub>x</sub> (tons/year)	PM <sub>10</sub> (tons/year)	PM <sub>2.5</sub> (tons/year)
2035 No Action	Taxi	447.73	83.33	45.38	14.77	1.157	1.157

## 2035 Proposed Action Aircraft Taxi Emissions

Day to Year Conversion

365.00

Operation Group	Mode	Fuel (ST)	Distance (mi)	Duration	CO (ST)	THC (ST)	TOG (ST)	VOC (ST)	NMHC (ST)	NOx (ST)	SOx (ST)	PMSO (ST)	PMFO (ST)	PM10 (ST)	PM2.5 (ST)	nvPM Mass (ST)	nvPM Number	CO2 (ST)	CH4 (ST)	CO2e (ST)	H2O (ST)
2035 Allops	Startup	0	0	0.00	0.00	0.03	0.03	0.033	0.03	0.000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00	--	--	0.0000	--	0.00	0.00
2035 Allops	Taxi Out	23	0	178.53	0.96	0.16	0.18	0.176	0.18	0.096	3.11E-02	1.15E-03	9.03E-04	2.44E-03	0.00	0.00	1.88E+19	73.9640	--	73.96	29.00
2035 Allops	Climb Ground	31	122	184.77	1.00	0.19	0.21	0.210	0.21	0.282	4.14E-02	1.53E-03	1.09E-03	3.49E-03	0.00	0.00	2.35E+19	98.4310	--	98.43	38.59
2035 Allops	Climb Below 1000 ft AFE	35	509	192.69	1.13	0.19	0.21	0.212	0.21	0.381	4.71E-02	1.73E-03	1.26E-03	4.11E-03	0.00	0.00	2.58E+19	111.9100	--	111.91	43.88
2035 Allops	Climb Below Mixing Height (3000 ft AFE)	45	1,202	208.51	1.30	0.19	0.22	0.215	0.22	0.596	6.03E-02	2.22E-03	1.46E-03	5.42E-03	0.01	0.00	3.16E+19	143.2800	--	143.28	56.18
2035 Allops	Climb Below 10000 ft AFE	76	4,431	261.35	1.96	0.20	0.23	0.225	0.23	1.213	1.01E-01	3.32E-03	2.38E-03	9.38E-03	0.01	0.00	4.85E+19	239.3400	--	239.34	93.84
2035 Allops	Above 10000 ft AFE	2	436	0.72	0.02	0.00	0.00	0.003	0.00	0.018	2.97E-03	8.04E-05	6.70E-05	1.47E-04	0.00	--	--	7.0474	--	7.05	2.76
2035 Allops	Descend Below 10000 ft AFE	27	5,107	95.00	1.40	0.08	0.09	0.086	0.09	0.181	3.61E-02	1.27E-03	1.18E-03	2.97E-03	0.00	0.00	2.49E+19	85.8280	--	85.83	33.65
2035 Allops	Descend Below Mixing Height (3000 ft AFE)	23	2,890	72.41	1.03	0.07	0.08	0.075	0.08	0.159	3.01E-02	1.11E-03	1.04E-03	2.61E-03	0.00	0.00	2.21E+19	71.5370	--	71.54	28.05
2035 Allops	Descend Below 1000 ft AFE	13	1,089	47.84	0.71	0.06	0.06	0.063	0.06	0.080	1.70E-02	6.20E-04	6.96E-04	1.55E-03	0.00	0.00	1.12E+19	40.2910	--	40.29	15.80
2035 Allops	Descend Ground	9	77	32.84	0.31	0.05	0.06	0.057	0.06	0.045	1.18E-02	4.34E-04	3.16E-04	9.10E-04	0.00	0.00	7.70E+18	27.9570	--	27.96	10.96
2035 Allops	Taxi In	7	0	31.07	0.29	0.05	0.06	0.056	0.06	0.031	9.93E-03	3.66E-04	2.86E-04	7.77E-04	0.00	0.00	6.01E+18	23.6030	--	23.60	9.25
2035 Allops	Full Flight	105	9,974	357.07	3.39	0.28	0.32	0.313	0.32	1.411	1.40E-01	4.66E-03	3.62E-03	1.25E-02	0.01	0.00	7.34E+19	332.2200	--	332.22	130.26
2035 Allops	APU	4	--	119.58	0.02	0.00	0.00	0.001	0.00	0.024	3.28E-03	--	--	0.00	0.00	--	--	11.7230	--	11.72	--
2035 Allops	GSE LTO	--	--	26775:38:00.00	0.36	0.02	0.02	0.016	0.01	0.010	6.57E-05	--	--	0.00	0.00	--	--	4.9362	0.0027	5.01	--
		Fuel (ST)	Distance (mi)	Duration	CO (ST)	THC (ST)	TOG (ST)	VOC (ST)	NMHC (ST)	NOx (ST)	SOx (ST)	PMSO (ST)	PMFO (ST)	PM10 (ST)	PM2.5 (ST)	nvPM Mass (ST)	nvPM Number	CO2 (ST)	CH4 (ST)	CO2e (ST)	H2O (ST)
<b>Taxi</b>		<b>30.92</b>	<b>0.00</b>	<b>209.60</b>	<b>1.24</b>	<b>0.20</b>	<b>0.23</b>	<b>0.23</b>	<b>0.23</b>	<b>0.13</b>	<b>0.04</b>	<b>1.51E-03</b>	<b>1.19E-03</b>	<b>3.22E-03</b>	<b>3.22E-03</b>	<b>0.00</b>	<b>2.48E+19</b>	<b>97.57</b>	<b>--</b>	<b>97.57</b>	<b>38.25</b>

\*\*\*Emissions presented in the table above are in (tons/day)\*\*\*

Calendar Year	Operational Category	CO (tons/year)	VOC (tons/year)	NO <sub>x</sub> (tons/year)	SO <sub>x</sub> (tons/year)	PM <sub>10</sub> (tons/year)	PM <sub>2.5</sub> (tons/year)
2035 Proposed Action	Taxi	454.01	84.57	46.00	14.98	1.174	1.174

**2019 Baseline Taxi Lead Emissions**

<b>Taxi Emissions</b>		
<b>Time Duration</b>	<b>Emissions (Short Tons)</b>	<b>Emissions (lb.)</b>
Per Month	2.99E-03	5.98
Per Year	0.0359	71.74

	<b>Fuel Lb</b>	<b>GALLONS</b>
Full Flight	856,908	142,818
Taxi	96,945	16,158

**UPDATED EQUATION BASED ON FUEL BURN BASELINE (Short Tons)**

$$E_{pb} = (x \text{ gal of avgas burned} \times 2.12 \times 0.95) / 907,180$$

**2019 Baseline Avgas AEDT Output**

Operation Group	Mode	Fuel (ST)	Distance (mi)	Duration	CO (ST)	THC (ST)	TOG (ST)	VOC (ST)	NMHC (ST)	NOx (ST)	nvPM Mass (ST)	nvPM Number	PMSO (ST)	PMFO (ST)	CO2 (ST)	H2O (ST)	SOx (ST)	PM 2.5 (ST)	PM 10 (ST)	
2019_Avgas_C	Startup	0	0.00E+00	00:00.0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	--	--	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2019_Avgas_C	Taxi Out	40.26246	0.00E+00	13:38.0	5.13E+01	2.51E+00	2.46E+00	2.10E+00	2.19E+00	1.94E-02	--	--	1.74E-03	1.47E-02	1.27E+02	4.98E+01	4.72E-02	1.64E-02	1.64E-02	1.64E-02
2019_Avgas_C	Climb Ground	47.70827	4.40E+03	01:57.5	6.10E+01	2.62E+00	2.56E+00	2.18E+00	2.28E+00	3.17E-02	--	--	2.05E-03	2.46E-02	1.51E+02	5.90E+01	5.59E-02	2.66E-02	2.66E-02	2.66E-02
2019_Avgas_C	Climb Below 1000 ft AFE	74.39489	5.14E+04	34:26.6	9.52E+01	2.98E+00	2.92E+00	2.48E+00	2.60E+00	8.23E-02	--	--	3.09E-03	5.73E-02	2.35E+02	9.20E+01	8.71E-02	6.04E-02	6.04E-02	6.04E-02
2019_Avgas_C	Climb Below Mixing Height	106.86703	1.11E+05	37:00.9	1.40E+02	3.43E+00	3.36E+00	2.86E+00	2.99E+00	1.33E-01	--	--	4.49E-03	9.72E-02	3.37E+02	1.32E+02	1.25E-01	1.02E-01	1.02E-01	1.02E-01
2019_Avgas_C	Climb Below 10000 ft AFE	224.53092	3.48E+05	45:43.6	3.13E+02	5.18E+00	5.07E+00	4.32E+00	4.52E+00	3.09E-01	3.15E+03	--	8.74E-03	1.03E-01	7.08E+02	2.78E+02	2.63E-01	1.15E-01	1.15E-01	1.15E-01
2019_Avgas_C	Above 10000 ft AFE	0	0.00E+00	00:00.0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	--	--	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2019_Avgas_C	Descend Below 10000 ft AFE	203.9232	3.65E+05	50:10.2	2.72E+02	3.28E+00	3.21E+00	2.74E+00	2.86E+00	2.90E-01	1.45E+03	--	8.29E-03	1.22E-01	6.43E+02	2.52E+02	2.39E-01	1.32E-01	1.32E-01	1.32E-01
2019_Avgas_C	Descend Below Mixing Height	150.61978	2.49E+05	29:08.3	1.97E+02	2.50E+00	2.45E+00	2.09E+00	2.18E+00	2.27E-01	--	--	6.37E-03	1.20E-01	4.75E+02	1.86E+02	1.76E-01	1.27E-01	1.27E-01	1.27E-01
2019_Avgas_C	Descend Below 1000 ft AFE	102.49707	1.68E+05	01:02.1	1.31E+02	1.82E+00	1.78E+00	1.52E+00	1.59E+00	1.67E-01	--	--	4.29E-03	8.24E-02	3.23E+02	1.27E+02	1.20E-01	8.67E-02	8.67E-02	8.67E-02
2019_Avgas_C	Descend Ground	10.44569	1.44E+03	37:13.6	1.35E+01	5.60E-01	5.49E-01	4.68E-01	4.89E-01	6.85E-03	--	--	4.40E-04	4.61E-03	3.30E+01	1.29E+01	1.22E-02	5.05E-03	5.05E-03	5.05E-03
2019_Avgas_C	Taxi In	8.21022	0.00E+00	32:25.0	1.05E+01	5.29E-01	5.18E-01	4.42E-01	4.62E-01	4.05E-03	--	--	3.50E-04	3.08E-03	2.59E+01	1.02E+01	9.62E-03	3.44E-03	3.44E-03	3.44E-03
2019_Avgas_C	Full Flight	428.45412	7.13E+05	35:53.8	5.85E+02	8.46E+00	8.28E+00	7.06E+00	7.38E+00	5.99E-01	4.60E+03	--	1.70E-02	2.25E-01	1.35E+03	5.30E+02	5.02E-01	2.47E-01	2.47E-01	2.47E-01
2019_Avgas_C	GSE LTO	0	0	15.54166667	0.01381	0	0.01223	0.01204	0.01125	0.02553	--	--	0	0	0	0.00E+00	1.10E-04	0.00107	0.00111	0.00111

\*\*\*Emissions presented in the table above are in (tons/year)\*\*\*

sum taxi emissions 96945.36

**2028 No Action Taxi Lead Emissions**

<b>Taxi Emissions</b>		
<b>Time Duration</b>	<b>Emissions (Short Tons)</b>	<b>Emissions (lb.)</b>
Per Month	3.52E-03	7.03
Per Year	0.0422	84.39

	<b>Fuel Lb</b>	<b>GALLONS</b>
Full Flight	986,004	164,334
Taxi	114,034	19,006

**UPDATED EQUATION BASED ON FUEL BURN NO ACTION(Short Tons)**

$$E_{pb} = (x \text{ gal of avgas burned} \times 2.12 \times 0.95) / 907,180$$

2028 No Action Avgas AEDT Output

Operation Group	Mode	Fuel (ST)	Distance (mi)	Duration	CO (ST)	THC (ST)	TOG (ST)	VOC (ST)	NMHC (ST)	NOx (ST)	SOx (ST)	PM10 (ST)	PM2.5 (ST)	nvPM Mass (ST)	nvPM Number	CO2 (ST)	CH4 (ST)	CO2e (ST)	H2O (ST)		
2028_Avgas_C	Taxi Out	0.12757	0.00E+00	13:26.0	1.62E-01	7.65E-03	7.49E-03	6.38E-03	6.67E-03	6.10E-05	0.00016933	6.2457E-06	4.45E-05	5.07E-05	5.07E-05	--	--	4.02E-01	--	0.40247	0.1578
2028_Avgas_C	Climb Ground	0.14938	1.37E+01	15:58.0	1.90E-01	7.95E-03	7.79E-03	6.64E-03	6.94E-03	1.01E-04	0.00019828	7.2916E-06	7.38E-05	8.11E-05	8.11E-05	--	--	4.71E-01	--	0.47129	0.18478
2028_Avgas_C	Climb Below 1000 ft AFE	0.23665	1.74E+02	14:42.9	3.00E-01	9.13E-03	8.94E-03	7.62E-03	7.96E-03	2.75E-04	0.00031412	0.000011148	1.79E-04	1.91E-04	1.91E-04	--	--	7.47E-01	--	0.74663	0.29274
2028_Avgas_C	Climb Below Mixing Height (3000 ft AFE)	0.33908	3.61E+02	41:03.0	4.39E-01	1.06E-02	1.04E-02	8.82E-03	9.22E-03	4.20E-04	0.00045009	0.000016163	2.91E-04	3.07E-04	3.07E-04	--	--	1.07E+00	--	1.0698	0.41945
2028_Avgas_C	Climb Below 10000 ft AFE	0.7106	1.10E+03	36:12.6	9.85E-01	1.61E-02	1.58E-02	1.35E-02	1.41E-02	9.03E-04	0.00094322	0.000029538	3.02E-04	3.32E-04	3.32E-04	--	--	2.24E+00	--	2.2419	0.87901
2028_Avgas_C	Above 10000 ft AFE	0	0.00E+00	00:00.0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0	0.00E+00	0.00E+00	0.00E+00	--	--	0.00E+00	--	0	0
2028_Avgas_C	Descend Below 10000 ft AFE	0.63643	1.12E+03	58:30.8	8.36E-01	1.03E-02	1.01E-02	8.61E-03	9.00E-03	1.03E-03	0.00084477	0.000028437	3.92E-04	4.20E-04	4.20E-04	--	--	2.01E+00	--	2.0079	0.78726
2028_Avgas_C	Descend Below Mixing Height (3000 ft AFE)	0.4625	7.61E+02	52:43.1	5.91E-01	7.77E-03	7.61E-03	6.48E-03	6.78E-03	8.11E-04	6.14E-04	0.000022175	3.87E-04	4.09E-04	4.09E-04	--	--	1.46E+00	--	1.4592	0.57212
2028_Avgas_C	Descend Below 1000 ft AFE	0.31131	5.21E+02	05:35.8	3.86E-01	5.64E-03	5.53E-03	4.71E-03	4.92E-03	6.13E-04	0.00041322	0.000014773	2.64E-04	2.78E-04	2.78E-04	--	--	9.82E-01	--	0.98219	0.38509
2028_Avgas_C	Descend Ground	0.039949	1.03E+01	32:05.0	5.18E-02	1.98E-03	1.94E-03	1.65E-03	1.73E-03	3.27E-05	0.000053027	0.000001933	2.03E-05	2.22E-05	2.22E-05	--	--	1.26E-01	--	0.12604	0.049417
2028_Avgas_C	Taxi In	0.028214	0.00E+00	32:25.0	3.66E-02	1.82E-03	1.78E-03	1.52E-03	1.58E-03	1.32E-05	0.00003745	1.3814E-06	1.06E-05	1.19E-05	1.19E-05	--	--	8.90E-02	--	0.089015	0.0349
2028_Avgas_C	Full Flight	1.347	2.22E+03	34:43.4	1.82E+00	2.65E-02	2.59E-02	2.21E-02	2.31E-02	1.93E-03	0.001788	0.000057974	6.94E-04	7.52E-04	7.52E-04	--	--	4.25E+00	--	4.2499	1.6663
2028_Avgas_C	GSE LTO	--	--	20:00.0	2.07E-06	1.29E-07	1.38E-07	1.36E-07	1.27E-07	3.51E-06	3.41E-07	--	--	1.98E-07	4.39E-08	--	--	1.11E-03	3.66E-08	0.0011121	--

\*\*\*Emissions presented in the table above are in (tons/day)\*\*\*

sum taxi emissions 114033.888

**2028 Proposed Action Taxi Lead Emissions**

<b>Taxi Emissions</b>		
<b>Time Duration</b>	<b>Emissions (Short Tons)</b>	<b>Emissions (lb.)</b>
Per Day	1.15E-04	0.23
Per Month	3.49E-03	6.98
Per Year	0.0419	83.80

**2028 Proposed Action Taxi Fuel Burn**

	<b>Fuel Lb</b>	<b>GALLONS</b>
Full Flight	961,775	160,296
Taxi	113,241	18,874

**UPDATED EQUATION BASED ON FUEL BURN PROPOSED ACTION (Short Tons)**

$$E_{pb} = (x \text{ gal of avgas burned} \times 2.12 \times 0.95) / 907,180$$

**2028 Proposed Action Avgas AEDT Output**

Operation Group	Mode	Fuel (ST)	Distance (mi)	Duration	CO (ST)	THC (ST)	TOG (ST)	VOC (ST)	NMHC (ST)	NOx (ST)	SOx (ST)	PMSO (ST)	PMFO (ST)	PM10 (ST)	PM2.5 (ST)	nvPM Mass (ST)	nvPM Number	CO2 (ST)	CH4 (ST)	CO2e (ST)	H2O (ST)
2028PA_Avgas_C	Startup	0	0.00E+00	00:00.0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0	0	0.00E+00	0.00E+00	0.00E+00	--	--	0.00E+00	--	0	0
2028PA_Avgas_C	Taxi Out	0.12705	0.00E+00	20:41.0	1.61E-01	7.62E-03	7.46E-03	6.36E-03	6.64E-03	6.07E-05	0.0001686	6.221E-06	4.43E-05	5.05E-05	5.05E-05	--	--	4.01E-01	--	0.40085	0.15716
2028PA_Avgas_C	Climb Ground	0.14888	1.37E+01	15:12.4	1.89E-01	7.92E-03	7.76E-03	6.61E-03	6.91E-03	1.00E-04	0.0001976	7.267E-06	7.37E-05	8.09E-05	8.09E-05	--	--	4.70E-01	--	0.46973	0.18417
2028PA_Avgas_C	Climb Below 1000 ft AFE	0.23609	1.74E+02	06:11.8	2.99E-01	9.09E-03	8.91E-03	7.59E-03	7.93E-03	2.75E-04	0.0003134	1.112E-05	1.79E-04	1.90E-04	1.90E-04	--	--	7.45E-01	--	0.74485	0.29204
2028PA_Avgas_C	Climb Below Mixing Height (3000 ft AFE)	0.3385	3.61E+02	35:13.3	4.38E-01	1.05E-02	1.03E-02	8.79E-03	9.19E-03	4.20E-04	0.0004493	1.614E-05	2.91E-04	3.07E-04	3.07E-04	--	--	1.07E+00	--	1.068	0.41872
2028PA_Avgas_C	Climb Below 10000 ft AFE	0.71002	1.09E+03	51:14.5	9.84E-01	1.61E-02	1.58E-02	1.34E-02	1.41E-02	9.03E-04	9.42E-04	2.951E-05	3.02E-04	3.32E-04	3.32E-04	--	--	2.24E+00	--	2.2401	0.8783
2028PA_Avgas_C	Above 10000 ft AFE	0	0.00E+00	00:00.0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0	0	0.00E+00	0.00E+00	0.00E+00	--	--	0.00E+00	--	0	0
2028PA_Avgas_C	Descend Below 10000 ft AFE	0.60393	1.05E+03	59:45.4	7.97E-01	9.85E-03	9.65E-03	8.22E-03	8.59E-03	9.47E-04	8.02E-04	2.685E-05	3.60E-04	3.87E-04	3.87E-04	--	--	1.91E+00	--	1.9054	0.74706
2028PA_Avgas_C	Descend Below Mixing Height (3000 ft AFE)	0.43	6.92E+02	24:39.7	5.52E-01	7.30E-03	7.16E-03	6.10E-03	6.37E-03	7.31E-04	0.0005708	2.058E-05	3.55E-04	3.76E-04	3.76E-04	--	--	1.36E+00	--	1.3567	0.53191
2028PA_Avgas_C	Descend Below 1000 ft AFE	0.27881	4.51E+02	25:13.3	3.48E-01	5.18E-03	5.07E-03	4.32E-03	4.52E-03	5.32E-04	0.0003701	1.318E-05	2.32E-04	2.45E-04	2.45E-04	--	--	8.80E-01	--	0.87966	0.34489
2028PA_Avgas_C	Descend Ground	0.038702	9.04E+00	37:55.3	5.03E-02	1.93E-03	1.89E-03	1.61E-03	1.69E-03	3.06E-05	5.137E-05	1.872E-06	1.94E-05	2.13E-05	2.13E-05	--	--	1.22E-01	--	0.12211	0.047875
2028PA_Avgas_C	Taxi In	0.027651	0.00E+00	55:05.0	3.59E-02	1.78E-03	1.74E-03	1.48E-03	1.55E-03	1.29E-05	3.67E-05	1.354E-06	1.03E-05	1.17E-05	1.17E-05	--	--	8.72E-02	--	0.087238	0.034204
2028PA_Avgas_C	Full Flight	1.3139	2.15E+03	50:59.9	1.78E+00	2.60E-02	2.54E-02	2.17E-02	2.26E-02	1.85E-03	1.74E-03	5.636E-05	6.62E-04	7.19E-04	7.19E-04	--	--	4.15E+00	--	4.1455	1.6254
2028PA_Avgas_C	GSE LTO	--	--	17.784722	2.072E-06	1.294E-07	1.384E-07	1.362E-07	1.273E-07	3.505E-06	3.413E-07	--	--	1.977E-07	4.394E-08	--	--	0.0011111	3.662E-08	0.0011121	--

\*\*\*Emissions presented in the table above are in (tons/day)\*\*\*

sum taxi emissions 113241.132

**2029 No Action Taxi Lead Emissions**

<b>Taxi Emissions</b>		
<b>Time Duration</b>	<b>Emissions (Short Tons)</b>	<b>Emissions (lb.)</b>
Per Day	1.18E-04	0.24
Per Month	3.58E-03	7.16
Per Year	0.0430	85.94

**2029 No Action Taxi Fuel Burn**

	<b>Fuel Lb</b>	<b>GALLONS</b>
Full Flight	1,004,188	167,365
Taxi	116,128	19,355

**UPDATED EQUATION BASED ON FUEL BURN NO ACTION (Short Tons)**

$$E_{pb} = (x \text{ gal of avgas burned} \times 2.12 \times 0.95) / 907,180$$

**2029 No Action Avgas AEDT Output**

Operation Group	Mode	Fuel (ST)	Distance (mi)	Duration	CO (ST)	THC (ST)	TOG (ST)	VOC (ST)	NMHC (ST)	NOx (ST)	SOx (ST)	PMSO (ST)	PMFO (ST)	PM10 (ST)	PM2.5 (ST)	nvPM Mass (ST)	nvPM Number	CO2 (ST)	CH4 (ST)	CO2e (ST)	H2O (ST)
2029_Avgas_C	Startup	0	0.00E+00	00:00.0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0	0	0.00E+00	0.00E+00	0.00E+00	--	--	0.00E+00	--	0	0
2029_Avgas_C	Taxi Out	0.13027	0.00E+00	13:26.0	1.65E-01	7.81E-03	7.65E-03	6.52E-03	6.81E-03	6.23E-05	0.00017292	6.3781E-06	4.54E-05	5.18E-05	5.18E-05	--	--	4.11E-01	--	0.41101	0.16115
2029_Avgas_C	Climb Ground	0.15254	1.40E+01	15:58.0	1.94E-01	8.12E-03	7.95E-03	6.78E-03	7.08E-03	1.03E-04	0.00020248	7.4462E-06	7.54E-05	8.29E-05	8.29E-05	--	--	4.81E-01	--	0.48128	0.1887
2029_Avgas_C	Climb Below 1000 ft AFE	0.24168	1.77E+02	14:42.9	3.06E-01	9.32E-03	9.13E-03	7.78E-03	8.13E-03	2.81E-04	0.00032079	1.1385E-05	1.83E-04	1.95E-04	1.95E-04	--	--	7.63E-01	--	0.7625	0.29896
2029_Avgas_C	Climb Below Mixing Height (3000 ft AFE)	0.34628	3.69E+02	41:03.0	4.49E-01	1.08E-02	1.06E-02	9.01E-03	9.42E-03	4.29E-04	0.00045963	1.6506E-05	2.97E-04	3.14E-04	3.14E-04	--	--	1.09E+00	--	1.0925	0.42834
2029_Avgas_C	Climb Below 10000 ft AFE	0.72564	1.12E+03	36:12.6	1.01E+00	1.65E-02	1.61E-02	1.38E-02	1.44E-02	9.22E-04	9.63E-04	3.0163E-05	3.09E-04	3.39E-04	3.39E-04	--	--	2.29E+00	--	2.2894	0.89761
2029_Avgas_C	Above 10000 ft AFE	0	0.00E+00	00:00.0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0	0	0.00E+00	0.00E+00	0.00E+00	--	--	0.00E+00	--	0	0
2029_Avgas_C	Descend Below 10000 ft AFE	0.64994	1.15E+03	58:30.8	8.54E-01	1.05E-02	1.03E-02	8.79E-03	9.19E-03	1.05E-03	8.63E-04	2.9041E-05	4.00E-04	4.29E-04	4.29E-04	--	--	2.05E+00	--	2.0506	0.80398
2029_Avgas_C	Descend Below Mixing Height (3000 ft AFE)	0.47234	7.78E+02	52:43.1	6.03E-01	7.93E-03	7.77E-03	6.62E-03	6.92E-03	8.29E-04	0.00062697	2.2647E-05	3.95E-04	4.18E-04	4.18E-04	--	--	1.49E+00	--	1.4902	0.58429
2029_Avgas_C	Descend Below 1000 ft AFE	0.31795	5.32E+02	05:35.8	3.95E-01	5.76E-03	5.65E-03	4.81E-03	5.03E-03	6.26E-04	0.00042204	1.5088E-05	2.69E-04	2.84E-04	2.84E-04	--	--	1.00E+00	--	1.0031	0.39331
2029_Avgas_C	Descend Ground	0.040793	1.05E+01	32:05.0	5.29E-02	2.02E-03	1.98E-03	1.69E-03	1.76E-03	3.34E-05	5.4146E-05	1.9738E-06	2.07E-05	2.27E-05	2.27E-05	--	--	1.29E-01	--	0.1287	0.05046
2029_Avgas_C	Taxi In	0.028809	0.00E+00	32:25.0	3.74E-02	1.85E-03	1.82E-03	1.55E-03	1.62E-03	1.34E-05	0.00003824	1.4105E-06	1.08E-05	1.22E-05	1.22E-05	--	--	9.09E-02	--	0.090891	0.035636
2029_Avgas_C	Full Flight	1.3756	2.26E+03	34:43.4	1.86E+00	2.70E-02	2.65E-02	2.25E-02	2.36E-02	1.97E-03	1.83E-03	5.9204E-05	7.09E-04	7.68E-04	7.68E-04	--	--	4.34E+00	--	4.34	1.7016
2029_Avgas_C	GSE LTO	--	--	13.9722222	2.1039E-06	1.2464E-07	1.3337E-07	1.3125E-07	1.2265E-07	3.5248E-06	3.4858E-07	--	--	1.9943E-07	4.2378E-08	--	--	0.001124	3.7392E-08	0.0011251	--

\*\*\*Emissions presented in the table above are in (tons/day)\*\*\*

sum taxi emissions 116127.67

**2029 Proposed Action Taxi Lead Emissions**

<b>Taxi Emissions</b>		
<b>Time Duration</b>	<b>Emissions (Short Tons)</b>	<b>Emissions (lb.)</b>
Per Day	1.17E-04	0.23
Per Month	3.56E-03	7.12
Per Year	0.0427	85.39

**2029 Proposed Action Taxi Fuel Burn**

	<b>Fuel Lb</b>	<b>GALLONS</b>
Full Flight	976,156	162,693
Taxi	115,384	19,231

**UPDATED EQUATION BASED ON FUEL BURN PROPOSED ACTION (Short Tons)**

$$E_{pb} = (x \text{ gal of avgas burned} \times 2.12 \times 0.95) / 907,180$$

**2029 Proposed Action Avgas AEDT Output**

Operation Group	Mode	Fuel (ST)	Distance (mi)	Duration	CO (ST)	THC (ST)	TOG (ST)	VOC (ST)	NMHC (ST)	NOx (ST)	SOx (ST)	PMSO (ST)	PMFO (ST)	PM10 (ST)	PM2.5 (ST)	nvPM Mass (ST)	nvPM Number	CO2 (ST)	CH4 (ST)	CO2e (ST)	H2O (ST)
2029PA_Avgas_C	Startup	0	0.00E+00	00:00.0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0	0	0.00E+00	0.00E+00	0.00E+00	--	--	0.00E+00	--	0	0
2029PA_Avgas_C	Taxi Out	0.12983	0.00E+00	51:52.0	1.65E-01	7.78E-03	7.63E-03	6.50E-03	6.79E-03	6.21E-05	0.00017234	6.3566E-06	4.53E-05	5.16E-05	5.16E-05	--	--	4.10E-01	--	0.40962	0.1606
2029PA_Avgas_C	Climb Ground	0.15213	1.40E+01	39:08.0	1.93E-01	8.09E-03	7.93E-03	6.75E-03	7.06E-03	1.03E-04	0.00020193	7.4259E-06	7.53E-05	8.27E-05	8.27E-05	--	--	4.80E-01	--	0.47997	0.18818
2029PA_Avgas_C	Climb Below 1000 ft AFE	0.2412	1.77E+02	58:02.9	3.06E-01	9.29E-03	9.10E-03	7.76E-03	8.11E-03	2.81E-04	0.00032016	1.1362E-05	1.83E-04	1.94E-04	1.94E-04	--	--	7.61E-01	--	0.761	0.29837
2029PA_Avgas_C	Climb Below Mixing Height (3000 ft AFE)	0.34578	3.69E+02	50:43.6	4.48E-01	1.08E-02	1.05E-02	8.98E-03	9.39E-03	4.29E-04	0.00045897	1.6482E-05	2.97E-04	3.14E-04	3.14E-04	--	--	1.09E+00	--	1.0909	0.42772
2029PA_Avgas_C	Climb Below 10000 ft AFE	0.72514	1.12E+03	41:02.9	1.00E+00	1.65E-02	1.61E-02	1.37E-02	1.44E-02	9.22E-04	9.63E-04	3.0139E-05	3.08E-04	3.39E-04	3.39E-04	--	--	2.29E+00	--	2.2878	0.897
2029PA_Avgas_C	Above 10000 ft AFE	0	0.00E+00	00:00.0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0	0	0.00E+00	0.00E+00	0.00E+00	--	--	0.00E+00	--	0	0
2029PA_Avgas_C	Descend Below 10000 ft AFE	0.61207	1.06E+03	32:23.9	8.09E-01	9.99E-03	9.79E-03	8.34E-03	8.72E-03	9.55E-04	8.12E-04	2.7186E-05	3.63E-04	3.90E-04	3.90E-04	--	--	1.93E+00	--	1.9311	0.75713
2029PA_Avgas_C	Descend Below Mixing Height (3000 ft AFE)	0.43447	6.96E+02	20:48.6	5.58E-01	7.40E-03	7.25E-03	6.17E-03	6.45E-03	7.35E-04	0.0005767	2.0793E-05	3.58E-04	3.79E-04	3.79E-04	--	--	1.37E+00	--	1.3708	0.53744
2029PA_Avgas_C	Descend Below 1000 ft AFE	0.28008	4.51E+02	46:34.0	3.50E-01	5.23E-03	5.12E-03	4.36E-03	4.56E-03	5.32E-04	0.00037177	1.3234E-05	2.32E-04	2.46E-04	2.46E-04	--	--	8.84E-01	--	0.88367	0.34647
2029PA_Avgas_C	Descend Ground	0.039416	9.05E+00	19:26.0	5.12E-02	1.97E-03	1.93E-03	1.65E-03	1.72E-03	3.10E-05	5.2319E-05	1.9064E-06	1.97E-05	2.16E-05	2.16E-05	--	--	1.24E-01	--	0.12436	0.048758
2029PA_Avgas_C	Taxi In	0.02823	0.00E+00	27:45.0	3.66E-02	1.82E-03	1.78E-03	1.52E-03	1.58E-03	1.32E-05	3.7472E-05	1.3821E-06	1.06E-05	1.19E-05	1.19E-05	--	--	8.91E-02	--	0.089066	0.034921
2029PA_Avgas_C	Full Flight	1.3372	2.18E+03	13:26.8	1.81E+00	2.64E-02	2.59E-02	2.21E-02	2.31E-02	1.88E-03	1.78E-03	5.7325E-05	6.72E-04	7.29E-04	7.29E-04	--	--	4.22E+00	--	4.2189	1.6541
2029PA_Avgas_C	GSE LTO	--	--	27.9444444	2.1039E-06	1.2464E-07	1.3337E-07	1.3125E-07	1.2265E-07	3.5248E-06	3.4858E-07	--	--	1.9943E-07	4.2378E-08	--	--	0.001124	3.7392E-08	0.0011251	--

\*\*\*Emissions presented in the table above are in (tons/day)\*\*\*

sum taxi emissions 115383.8

**2030 No Action Taxi Lead Emission Calcs**

<b>Taxi Emissions</b>		
<b>Time Duration</b>	<b>Emissions (Short Tons)</b>	<b>Emissions (lb.)</b>
Per Day	1.20E-04	0.24
Per Month	3.65E-03	7.30
Per Year	0.0438	87.60

**2030 No Action Taxi Fuel Burn**

Full Flight	1,023,606	170,601
Taxi	118,371	19,728

**UPDATED EQUATION BASED ON FUEL BURN NO ACTION(Short Tons)**

$$E_{pb} = (x \text{ gal of avgas burned} \times 2.12 \times 0.95) / 907,180$$

**2030 No Action Avgas AEDT Output**

Operation Group	Mode	Fuel (ST)	Distance (mi)	Duration	CO (ST)	THC (ST)	TOG (ST)	VOC (ST)	NMHC (ST)	NOx (ST)	SOx (ST)	PMSO (ST)	PMFO (ST)	PM10 (ST)	PM2.5 (ST)	nvPM Mass (ST)	nvPM Number	CO2 (ST)	CH4 (ST)	CO2e (ST)	H2O (ST)
2030NA_Avgas_C	Startup	0	0.00E+00	00:00.0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0	0	0.00E+00	0.00E+00	0.00E+00	--	--	0.00E+00	--	0	0
2030NA_Avgas_C	Taxi Out	0.13279	0.00E+00	13:26.0	1.69E-01	7.96E-03	7.80E-03	6.65E-03	6.95E-03	6.35E-05	0.0001763	6.501E-06	4.63E-05	5.28E-05	5.28E-05	--	--	4.19E-01	--	0.41895	0.16426
2030NA_Avgas_C	Climb Ground	0.15549	1.43E+01	15:58.0	1.98E-01	8.27E-03	8.11E-03	6.91E-03	7.22E-03	1.05E-04	0.0002064	7.59E-06	7.69E-05	8.45E-05	8.45E-05	--	--	4.91E-01	--	0.49059	0.19235
2030NA_Avgas_C	Climb Below 1000 ft AFE	0.24636	1.81E+02	14:42.9	3.12E-01	9.50E-03	9.31E-03	7.93E-03	8.29E-03	2.87E-04	0.000327	1.161E-05	1.87E-04	1.98E-04	1.98E-04	--	--	7.77E-01	--	0.77728	0.30475
2030NA_Avgas_C	Climb Below Mixing Height (3000 ft AFE)	0.35298	3.76E+02	41:03.0	4.57E-01	1.10E-02	1.08E-02	9.18E-03	9.60E-03	4.38E-04	0.0004685	1.683E-05	3.03E-04	3.20E-04	3.20E-04	--	--	1.11E+00	--	1.1136	0.43663
2030NA_Avgas_C	Climb Below 10000 ft AFE	0.73963	1.14E+03	36:12.6	1.02E+00	1.68E-02	1.65E-02	1.40E-02	1.47E-02	9.40E-04	9.82E-04	3.075E-05	3.15E-04	3.45E-04	3.45E-04	--	--	2.33E+00	--	2.3335	0.91493
2030NA_Avgas_C	Above 10000 ft AFE	0	0.00E+00	00:00.0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0	0	0.00E+00	0.00E+00	0.00E+00	--	--	0.00E+00	--	0	0
2030NA_Avgas_C	Descend Below 10000 ft AFE	0.66254	1.17E+03	58:30.8	8.70E-01	1.07E-02	1.05E-02	8.96E-03	9.36E-03	1.07E-03	8.79E-04	2.96E-05	4.08E-04	4.38E-04	4.38E-04	--	--	2.09E+00	--	2.0903	0.81956
2030NA_Avgas_C	Descend Below Mixing Height (3000 ft AFE)	0.48152	7.93E+02	52:43.1	6.15E-01	8.09E-03	7.92E-03	6.75E-03	7.05E-03	8.45E-04	0.0006392	2.309E-05	4.03E-04	4.26E-04	4.26E-04	--	--	1.52E+00	--	1.5192	0.59564
2030NA_Avgas_C	Descend Below 1000 ft AFE	0.32415	5.43E+02	05:35.8	4.02E-01	5.88E-03	5.76E-03	4.90E-03	5.13E-03	6.38E-04	0.0004303	1.538E-05	2.74E-04	2.90E-04	2.90E-04	--	--	1.02E+00	--	1.0227	0.40097
2030NA_Avgas_C	Descend Ground	0.041577	1.07E+01	32:05.0	5.39E-02	2.06E-03	2.02E-03	1.72E-03	1.80E-03	3.40E-05	5.519E-05	2.012E-06	2.11E-05	2.32E-05	2.32E-05	--	--	1.31E-01	--	0.13118	0.051431
2030NA_Avgas_C	Taxi In	0.029362	0.00E+00	32:25.0	3.81E-02	1.89E-03	1.85E-03	1.58E-03	1.65E-03	1.37E-05	3.897E-05	1.438E-06	1.10E-05	1.24E-05	1.24E-05	--	--	9.26E-02	--	0.092637	0.036321
2030NA_Avgas_C	Full Flight	1.4022	2.31E+03	34:43.4	1.90E+00	2.75E-02	2.70E-02	2.30E-02	2.40E-02	2.01E-03	1.86E-03	6.035E-05	7.23E-04	7.83E-04	7.83E-04	--	--	4.42E+00	--	4.4239	1.7345
2030NA_Avgas_C	GSE LTO	--	--	13.972222	2.122E-06	1.22E-07	1.305E-07	1.284E-07	1.2E-07	3.525E-06	3.553E-07	--	--	2.008E-07	3.812E-08	--	--	0.0011269	3.812E-08	0.0011279	--

\*\*\*Emissions presented in the table above are in (tons/day)\*\*\*

sum taxi emissions 118370.96

**2030 Proposed Action Taxi Lead Emissions**

<b>Taxi Emissions</b>		
<b>Time Duration</b>	<b>Emissions (Short Tons)</b>	<b>Emissions (lb.)</b>
Per Day	1.21E-04	0.24
Per Month	3.68E-03	7.36
Per Year	0.0442	88.37

**2030 Proposed Action Taxi Fuel Burn**

	<b>Fuel Lb</b>	<b>GALLONS</b>
Full Flight	1,024,774	170,796
Taxi	119,418	19,903

**UPDATED EQUATION BASED ON FUEL BURN PROPOSED ACTION (Short Tons)**

$$E_{pb} = (x \text{ gal of avgas burned} \times 2.12 \times 0.95) / 907,180$$

**2030 Proposed Action Avgas AEDT Output**

Operation Group	Mode	Fuel (ST)	Distance (mi)	Duration	CO (ST)	THC (ST)	TOG (ST)	VOC (ST)	NMHC (ST)	NOx (ST)	SOx (ST)	PMSO (ST)	PMFO (ST)	PM10 (ST)	PM2.5 (ST)	nvPM Mass (ST)	nvPM Number	CO2 (ST)	CH4 (ST)	CO2e (ST)	H2O (ST)
2030_Avgas_C	Startup	0	0.00E+00	00:00.0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0	0	0.00E+00	0.00E+00	0.00E+00	--	--	0.00E+00	--	0	0
2030_Avgas_C	Taxi Out	0.13326	0.00E+00	37:56.0	1.69E-01	7.99E-03	7.83E-03	6.67E-03	6.97E-03	6.37E-05	0.00017688	6.5244E-06	4.65E-05	5.30E-05	5.30E-05	--	--	4.20E-01	--	0.42044	0.16484
2030_Avgas_C	Climb Ground	0.15596	1.43E+01	40:24.1	1.98E-01	8.31E-03	8.14E-03	6.93E-03	7.25E-03	1.05E-04	0.00020701	7.6129E-06	7.70E-05	8.46E-05	8.46E-05	--	--	4.92E-01	--	0.49205	0.19292
2030_Avgas_C	Climb Below 1000 ft AFE	0.24715	1.81E+02	45:20.5	3.13E-01	9.54E-03	9.34E-03	7.96E-03	8.32E-03	2.87E-04	0.00032805	1.1644E-05	1.87E-04	1.99E-04	1.99E-04	--	--	7.80E-01	--	0.77975	0.30572
2030_Avgas_C	Climb Below Mixing Height (3000 ft AFE)	0.35376	3.77E+02	11:40.4	4.58E-01	1.10E-02	1.08E-02	9.21E-03	9.63E-03	4.38E-04	0.00046957	1.6864E-05	3.04E-04	3.21E-04	3.21E-04	--	--	1.12E+00	--	1.1161	0.4376
2030_Avgas_C	Climb Below 10000 ft AFE	0.74042	1.14E+03	06:50.1	1.03E+00	1.68E-02	1.65E-02	1.41E-02	1.47E-02	9.41E-04	9.83E-04	3.0783E-05	3.15E-04	3.46E-04	3.46E-04	--	--	2.34E+00	--	2.336	0.9159
2030_Avgas_C	Above 10000 ft AFE	0	0.00E+00	00:00.0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0	0	0.00E+00	0.00E+00	0.00E+00	--	--	0.00E+00	--	0	0
2030_Avgas_C	Descend Below 10000 ft AFE	0.66335	1.17E+03	15:14.4	8.71E-01	1.08E-02	1.06E-02	9.01E-03	9.42E-03	1.07E-03	8.81E-04	2.9643E-05	4.08E-04	4.38E-04	4.38E-04	--	--	2.09E+00	--	2.0929	0.82056
2030_Avgas_C	Descend Below Mixing Height (3000 ft AFE)	0.48233	7.93E+02	09:26.7	6.16E-01	8.15E-03	7.98E-03	6.80E-03	7.11E-03	8.45E-04	0.00064022	2.3126E-05	4.03E-04	4.26E-04	4.26E-04	--	--	1.52E+00	--	1.5217	0.59664
2030_Avgas_C	Descend Below 1000 ft AFE	0.32496	5.42E+02	22:19.4	4.03E-01	5.93E-03	5.81E-03	4.95E-03	5.18E-03	6.38E-04	0.00043134	1.5422E-05	2.75E-04	2.90E-04	2.90E-04	--	--	1.03E+00	--	1.0252	0.40197
2030_Avgas_C	Descend Ground	0.042541	1.07E+01	54:59.9	5.52E-02	2.12E-03	2.08E-03	1.77E-03	1.85E-03	3.45E-05	5.6467E-05	2.059E-06	2.15E-05	2.36E-05	2.36E-05	--	--	1.34E-01	--	0.13422	0.052623
2030_Avgas_C	Taxi In	0.030326	0.00E+00	55:20.0	3.94E-02	1.95E-03	1.91E-03	1.63E-03	1.70E-03	1.41E-05	4.0253E-05	1.4848E-06	1.13E-05	1.28E-05	1.28E-05	--	--	9.57E-02	--	0.095678	0.037513
2030_Avgas_C	Full Flight	1.4038	2.31E+03	22:04.4	1.90E+00	2.76E-02	2.71E-02	2.31E-02	2.41E-02	2.01E-03	1.86E-03	6.0427E-05	7.24E-04	7.84E-04	7.84E-04	--	--	4.43E+00	--	4.4289	1.7365
2030_Avgas_C	GSE LTO	--	--	13.9722222	2.1219E-06	1.2198E-07	1.3051E-07	1.2844E-07	1.2002E-07	3.5246E-06	3.5534E-07	--	--	2.0075E-07	3.8117E-08	--	--	0.0011269	3.8117E-08	0.0011279	N/A

\*\*\*Emissions presented in the table above are in (tons/day)\*\*\*

sum taxi emissions 119417.78

**2035 No Action Taxi Lead Emissions**

<b>Taxi Emissions</b>		
<b>Time Duration</b>	<b>Emissions (Short Tons)</b>	<b>Emissions (lb.)</b>
Per Day	1.33E-04	0.27
Per Month	4.04E-03	8.07
Per Year	0.0484	96.84

**2035 No Action Taxi Fuel Burn**

	<b>Fuel Lb</b>	<b>GALLONS</b>
Full Flight	1,131,865	188,644
Taxi	130,863	21,811

**UPDATED EQUATION BASED ON FUEL BURN NO ACTION (Short Tons)**

$$E_{pb} = (x \text{ gal of avgas burned} \times 2.12 \times 0.95) / 907,180$$

**2035 No Action Avgas AEDT Output**

Operation Group	Mode	Fuel (ST)	Distance (mi)	Duration	CO (ST)	THC (ST)	TOG (ST)	VOC (ST)	NMHC (ST)	NOx (ST)	SOx (ST)	PMSO (ST)	PMFO (ST)	PM10 (ST)	PM2.5 (ST)	nvPM Mass (ST)	nvPM Number	CO2 (ST)	CH4 (ST)	CO2e (ST)	H2O (ST)
2035_Avgas_C	Startup	0	0.00E+00	00:00.0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0	0	0.00E+00	0.00E+00	0.00E+00	--	--	0.00E+00	--	0	0
2035_Avgas_C	Taxi Out	0.14683	0.00E+00	13:26.0	1.86E-01	8.80E-03	8.62E-03	7.34E-03	7.68E-03	7.02E-05	0.0001949	7.1887E-06	5.12E-05	5.84E-05	5.84E-05	--	--	4.63E-01	--	0.46325	0.18163
2035_Avgas_C	Climb Ground	0.17194	1.58E+01	15:58.0	2.18E-01	9.15E-03	8.96E-03	7.63E-03	7.98E-03	1.16E-04	0.00022823	8.393E-06	8.50E-05	9.34E-05	9.34E-05	--	--	5.42E-01	--	0.54248	0.21269
2035_Avgas_C	Climb Below 1000 ft AFE	0.27253	2.00E+02	14:42.9	3.45E-01	1.05E-02	1.03E-02	8.77E-03	9.16E-03	3.18E-04	0.00036175	1.2837E-05	2.07E-04	2.19E-04	2.19E-04	--	--	8.60E-01	--	0.85984	0.33712
2035_Avgas_C	Climb Below Mixing Height (3000 ft AFE)	0.39035	4.17E+02	41:03.0	5.05E-01	1.22E-02	1.19E-02	1.02E-02	1.06E-02	4.85E-04	0.00051814	1.8606E-05	3.35E-04	3.54E-04	3.54E-04	--	--	1.23E+00	--	1.2316	0.48287
2035_Avgas_C	Climb Below 10000 ft AFE	0.81759	1.26E+03	36:12.6	1.13E+00	1.86E-02	1.82E-02	1.55E-02	1.62E-02	1.04E-03	1.09E-03	3.3986E-05	3.48E-04	3.82E-04	3.82E-04	--	--	2.58E+00	--	2.5795	1.0114
2035_Avgas_C	Above 10000 ft AFE	0	0.00E+00	00:00.0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0	0	0.00E+00	0.00E+00	0.00E+00	--	--	0.00E+00	--	0	0
2035_Avgas_C	Descend Below 10000 ft AFE	0.73287	1.29E+03	58:30.8	9.62E-01	1.19E-02	1.16E-02	9.91E-03	1.04E-02	1.18E-03	9.73E-04	3.2747E-05	4.52E-04	4.84E-04	4.84E-04	--	--	2.31E+00	--	2.3122	0.90656
2035_Avgas_C	Descend Below Mixing Height (3000 ft AFE)	0.53281	8.78E+02	52:43.1	6.80E-01	8.94E-03	8.76E-03	7.46E-03	7.80E-03	9.36E-04	0.00070723	2.5545E-05	4.46E-04	4.71E-04	4.71E-04	--	--	1.68E+00	--	1.681	0.65908
2035_Avgas_C	Descend Below 1000 ft AFE	0.35885	6.01E+02	05:35.8	4.45E-01	6.50E-03	6.37E-03	5.43E-03	5.67E-03	7.07E-04	0.00047632	1.7028E-05	3.04E-04	3.21E-04	3.21E-04	--	--	1.13E+00	--	1.1322	0.4439
2035_Avgas_C	Descend Ground	0.045937	1.19E+01	32:05.0	5.95E-02	2.27E-03	2.23E-03	1.90E-03	1.98E-03	3.76E-05	6.0975E-05	2.2277E-06	2.34E-05	2.56E-05	2.56E-05	--	--	1.45E-01	--	0.14493	0.056825
2035_Avgas_C	Taxi In	0.032435	0.00E+00	32:25.0	4.21E-02	2.09E-03	2.04E-03	1.74E-03	1.82E-03	1.51E-05	4.3053E-05	1.588E-06	1.21E-05	1.37E-05	1.37E-05	--	--	1.02E-01	--	0.10233	0.040122
2035_Avgas_C	Full Flight	1.5505	2.56E+03	34:43.4	2.09E+00	3.04E-02	2.98E-02	2.54E-02	2.66E-02	2.23E-03	2.06E-03	6.6734E-05	8.00E-04	8.66E-04	8.66E-04	--	--	4.89E+00	--	4.8917	1.9179
2035_Avgas_C	GSE LTO	--	--	13.9722222	2.2881E-06	1.1525E-07	1.2332E-07	1.2136E-07	1.1341E-07	3.7189E-06	3.9307E-07	--	--	2.1645E-07	3.3732E-08	--	--	0.0011835	4.2165E-08	0.0011846	--

\*\*\*Emissions presented in the table above are in (tons/day)\*\*\*

sum taxi emissions 130863.45

**2035 Proposed Action Taxi Lead Emissions**

<b>Taxi Emissions</b>		
<b>Time Duration</b>	<b>Emissions (Short Tons)</b>	<b>Emissions (lb.)</b>
Per Day	1.34E-04	0.27
Per Month	4.07E-03	8.14
Per Year	0.0488	97.70

**2035 Proposed Action Taxi Fuel Burn**

<b>Fuel Lb</b>	<b>GALLONS</b>
1,133,106	188,851
132,021	22,004

**UPDATED EQUATION BASED ON FUEL BURN PROPOSED ACTION (Short Tons)**

$$E_{pb} = (x \text{ gal of avgas burned} \times 2.12 \times 0.95) / 907,180$$

**2035 Proposed Action Avgas AEDT Output**

Operation Group	Mode	Fuel (ST)	Distance (mi)	Duration	CO (ST)	THC (ST)	TOG (ST)	VOC (ST)	NMHC (ST)	NOx (ST)	SOx (ST)	PMSO (ST)	PMFO (ST)	PM10 (ST)	PM2.5 (ST)	nvPM Mass (ST)	nvPM Number	CO2 (ST)	CH4 (ST)	CO2e (ST)	H2O (ST)
2035_Avgas_C	Startup	0	0.00E+00	00:00.0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0	0	0.00E+00	0.00E+00	0.00E+00	--	--	0.00E+00	--	0	0
2035_Avgas_C	Taxi Out	0.14735	0.00E+00	37:56.0	1.87E-01	8.83E-03	8.65E-03	7.37E-03	7.71E-03	7.04E-05	0.00019558	7.2142E-06	5.14E-05	5.86E-05	5.86E-05	--	--	4.65E-01	--	0.46488	0.18227
2035_Avgas_C	Climb Ground	0.17245	1.58E+01	40:24.1	2.19E-01	9.18E-03	8.99E-03	7.66E-03	8.01E-03	1.16E-04	0.00022891	8.4181E-06	8.52E-05	9.36E-05	9.36E-05	--	--	5.44E-01	--	0.5441	0.21333
2035_Avgas_C	Climb Below 1000 ft AFE	0.2734	2.01E+02	45:20.5	3.46E-01	1.05E-02	1.03E-02	8.80E-03	9.20E-03	3.18E-04	0.0003629	0.00001288	2.07E-04	2.20E-04	2.20E-04	--	--	8.63E-01	--	0.86258	0.33819
2035_Avgas_C	Climb Below Mixing Height (3000 ft AFE)	0.39122	4.17E+02	11:40.4	5.07E-01	1.22E-02	1.20E-02	1.02E-02	1.06E-02	4.85E-04	0.00051929	1.8648E-05	3.36E-04	3.54E-04	3.54E-04	--	--	1.23E+00	--	1.2343	0.48394
2035_Avgas_C	Climb Below 10000 ft AFE	0.81845	1.26E+03	06:50.1	1.13E+00	1.86E-02	1.82E-02	1.55E-02	1.62E-02	1.04E-03	1.09E-03	3.4029E-05	3.49E-04	3.83E-04	3.83E-04	--	--	2.58E+00	--	2.5822	1.0124
2035_Avgas_C	Above 10000 ft AFE	0	0.00E+00	00:00.0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0	0	0.00E+00	0.00E+00	0.00E+00	--	--	0.00E+00	--	0	0
2035_Avgas_C	Descend Below 10000 ft AFE	0.73376	1.29E+03	15:14.4	9.64E-01	1.19E-02	1.17E-02	9.96E-03	1.04E-02	1.18E-03	9.74E-04	3.2791E-05	4.52E-04	4.85E-04	4.85E-04	--	--	2.32E+00	--	2.315	0.90766
2035_Avgas_C	Descend Below Mixing Height (3000 ft AFE)	0.5337	8.78E+02	09:26.7	6.81E-01	9.01E-03	8.83E-03	7.52E-03	7.86E-03	9.36E-04	0.00070841	2.5589E-05	4.46E-04	4.71E-04	4.71E-04	--	--	1.68E+00	--	1.6838	0.66018
2035_Avgas_C	Descend Below 1000 ft AFE	0.35974	6.01E+02	22:19.4	4.47E-01	6.57E-03	6.43E-03	5.48E-03	5.73E-03	7.07E-04	0.0004775	1.7072E-05	3.04E-04	3.21E-04	3.21E-04	--	--	1.14E+00	--	1.135	0.445
2035_Avgas_C	Descend Ground	0.047003	1.19E+01	54:59.9	6.09E-02	2.34E-03	2.29E-03	1.95E-03	2.04E-03	3.81E-05	0.00006239	2.2748E-06	2.38E-05	2.60E-05	2.60E-05	--	--	1.48E-01	--	0.1483	0.058143
2035_Avgas_C	Taxi In	0.033501	0.00E+00	55:20.0	4.35E-02	2.15E-03	2.11E-03	1.80E-03	1.88E-03	1.56E-05	4.4467E-05	1.6402E-06	1.25E-05	1.42E-05	1.42E-05	--	--	1.06E-01	--	0.10569	0.04144
2035_Avgas_C	Full Flight	1.5522	2.56E+03	22:04.4	2.10E+00	3.05E-02	2.99E-02	2.55E-02	2.66E-02	2.23E-03	2.06E-03	0.00006682	8.00E-04	8.67E-04	8.67E-04	--	--	4.90E+00	--	4.8972	1.9201
2035_Avgas_C	GSE LTO	--	--	13.9722222	2.2881E-06	1.1525E-07	1.2332E-07	1.2136E-07	1.1341E-07	3.7189E-06	3.9307E-07	--	--	2.1645E-07	3.3732E-08	--	--	0.0011835	4.2165E-08	0.0011846	--

\*\*\*Emissions presented in the table above are in (tons/day)\*\*\*

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