



**FAA**  
**Airspace Policy, Environmental Policy Team (AJV-114)**

## **Environmental Review of Proposed Change of Operating Authorization Requirement at Newark Liberty International Airport**

### **Proposed Action**

The proposed action would change the current requirement for an airline to obtain a Federal Aviation Administration (FAA) Operating Authorization (slot) at Newark Liberty International Airport (EWR) in advance of a scheduled arrival or departure of a commercial flight in the slot controlled hours from 6 a.m. to 11 p.m. Eastern Time. The proposed FAA action would change the current Level 3 designation at EWR, which requires an advance airport runway slot in a specific half-hour period, to Level 2, which establishes a formal yet voluntary process for review and voluntary approval of revision of schedules and schedule revisions.

### **Alternatives Analyzed**

The FAA reviewed alternatives:

No Action Alternative: The FAA takes no action and allows current slot rule at EWR to expire.

Base Case Alternative: The FAA retains the current Level 3 designation at EWR

Proposed Alternative: The FAA changes EWR slot rule to Level 2 as described above.

The FAA Office of Forecast and Performance Analysis reviewed historical and current operations and developed annual/daily operations forecast for each alternative for years 2017 and 2022.

The environmental review was conducted using these alternatives.

### **Noise**

The FAA conducted noise screening using Area Equivalent Method (AEM), as described in FAA 1050.1 Desk Reference in order to rule out the need for more detailed noise analysis.

The aircraft types in the operations forecasts were reviewed and matched to the aircraft types within AEM; if the aircraft type was unavailable in AEM, the aircraft substitution list within the AEM spreadsheet was used to find a suitable substitute. The aircraft types and operational counts were entered into the AEM spreadsheet using the Base Case as the baseline and the Proposed action as the alternative for both 2017 and 2022. In addition the FAA also ran the scenario with the No Action Alternative as the baseline and the Proposed Action as the alternative for 2017 and 2022.

The results of each of these scenarios are shown below in Tables 1-1 to 1-4. The results of AEM indicate that DNL noise contours will decrease in area (reduction in noise) where the Base Case is the baseline in both 2017 and 2022. In the scenario where the No Action Alternative is the baseline, the AEM analysis indicates an insubstantial decrease in area of the DNL noise contours indicating no real change in noise.

<b>2017</b>			
<b>DNL (dBA)</b>	<b>Base Case Baseline Area (Sq. Mi.)</b>	<b>Level 2 Alternative Area (Sq. Mi.)</b>	<b>Change in Area (Sq. Mi.)</b>
65	6.2	5.6	-9.5%
60	16.0	14.4	-9.8%
55	41.6	37.4	-10.1%
50	109.2	97.8	-10.5%
45	289.4	258.2	-10.8%

*Table 1-1 2017 Base Case vs Proposed Action Results*

<b>2022</b>			
<b>DNL (dBA)</b>	<b>Base Case Baseline Area (Sq. Mi.)</b>	<b>Level 2 Alternative Area (Sq. Mi.)</b>	<b>Change in Area (Sq. Mi.)</b>
65	7.1	6.5	-9.2%
60	18.4	16.6	-9.7%
55	47.9	43.0	-10.2%
50	125.6	112.0	-10.8%
45	332.2	294.4	-11.4%

*Table 1-2 2022 Base Case vs Proposed Action Results*

<b>2017</b>			
<b>DNL (dBA)</b>	<b>Expires Case Baseline Area (Sq. Mi.)</b>	<b>Level 2 Alternative Area (Sq. Mi.)</b>	<b>Change in Area (Sq. Mi.)</b>
65	5.6	5.6	-0.2%
60	14.4	14.4	-0.1%
55	37.4	37.4	0.0%
50	97.7	97.8	0.1%
45	257.7	258.2	0.2%

Table 1-3 2017 No Action vs Proposed Action

<b>2022</b>			
<b>DNL (dBA)</b>	<b>Baseline Area (Sq. Mi.)</b>	<b>Alternative Area (Sq. Mi.)</b>	<b>Change in Area (Sq. Mi.)</b>
65	6.5	6.5	-0.5%
60	16.7	16.6	-0.4%
55	43.1	43.0	-0.2%
50	112.1	112.0	-0.1%
45	294.2	294.4	0.1%

Table 1-4 2022 No Action vs Proposed Action

## **Air Quality**

EWR is located in the New York-Northern New Jersey-Connecticut nonattainment area, which is designated as a marginal nonattainment area for 8-hour ozone. The area is also designated as a maintenance area for carbon monoxide and for particulate matter (2.5 micrograms (µg) per cubic meter). The area is designated attainment for the remaining criteria pollutants. In accordance with the FAA Presumed To Conform (PTC) list (72 FR 41578, July 30, 2007), "...air traffic actions below the mixing height are also presumed to conform when modifications to routes and procedures are designed to enhance operational efficiency (i.e., reduce delays), increase fuel efficiency, or reduce community noise impacts by means of engine thrust reductions."

Although the action is presumed to conform, the potential impact on National Ambient Air Quality Standards of the NPRM was evaluated. FAA's Aviation Environmental Design Tool (AEDT) version 2b Service Pack 2 (SP2) was used to estimate potential emission changes of criteria pollutants of concern for which the area EWR is located in are designated nonattainment or maintenance under the Clean Air Act. The review of air quality changes considered emissions from aircraft engines. These estimates were then compared with de minimis thresholds under the general conformity provisions (40 CFR Part 93) to determine the potential for the proposed action to cause exceedances of the National Ambient Air Quality Standards (NAAQS). FAA Order 1050.1F, Chapter 4-4.3, Exhibit 4-1, defines significant impacts as emissions that would cause an area to exceed one or more of the NAAQSs during the time periods analyzed, or to increase the frequency or severity of any such existing violations.

The emissions were evaluated by comparing the Proposed Action scenarios with the No Action alternative scenario. The differences in emissions between the alternative action scenarios and the no action alternative scenario are compared to the de minimis thresholds with respect to all relevant pollutants. The three scenarios are listed in Table 2.

**Table 2**

<b>Scenario</b>	<b>Description</b>
No Action	Order Expires
Alternative 1	Base Case (Retain Level 3)
Alternative 2	Proposed Action (Level 2)

The No Action scenario allows the current Level 3 Slot Control Rule to expire and move EWR into an unrestricted environment with no cap on operations levels. Alternative 1 essentially retains the current Level 3 Slot Control Rule at EWR. Alternative 2 imposes a Level 2 Slot Control Rule at EWR.

The emissions resulting from Alternative 1 or Alternative 2 when compared to taking no action (i.e., unrestricted by letting current order expire) are below General Conformity de minimis thresholds with respect to all relevant pollutants. Therefore, there is no potential for significant air quality impacts under either scenario. Either Alternative 1 or Alternative 2 results in a reduction of criteria pollutant emissions, compared to taking no action.

The comparison of Alternative 1 and Alternative 2 is also made since the current condition is the Level 3 Slot Control Rule and could be replaced with the Level 2 Slot Control Rule at EWR. Implementing a Level 2 Slot Control Rule will result in increased emissions compared to the current Level 3 Slot Control Rule at EWR. However, the resulting increase in emissions is in General Conformity relative to de minimis thresholds with respect to all relevant pollutants. Therefore, there is no potential for significant air quality impacts.

Tables 3 and 4 list the predicted annual emission inventory results for the three scenarios evaluated along with the applicable de minimis thresholds for the analysis years 2017 and 2022, respectively.

**Table 3. NPRM EWR 2017 Annual Emissions Inventory (tons per year)**

	CO	VOC	NOx	SOx	PM 2.5
Alternative 1 - Level 3	2,540.5	415.8	2,499.8	266.3	23.9
No Action - Order Expires	2,668.4	433.8	2,638.5	279.9	24.9
Alternative 1 vs. No Action Comparison	-127.9	-18.1	-138.6	-13.6	-1.0
<b>Alternative 2 - Level 2</b>					
Alternative 2 - Level 2	2,586.2	421.8	2,554.6	272.1	24.3
No Action - Order Expires	2,668.4	433.8	2,638.5	279.9	24.9
Alternative 2 vs. No Action Comparison	-82.2	-12.0	-83.9	-7.7	-0.6
<b>Alternative 1 - Level 3</b>					
Alternative 2 - Level 2	2,586.2	421.8	2,554.6	272.1	24.3
Alternative 1 - Level 3	2,540.5	415.8	2,499.8	266.3	23.9
Alternative 2 vs. Alternative 1 Comparison	45.7	6.0	54.7	5.8	0.4
<b>Applicable De Minimis Threshold</b>					
Applicable De Minimis Threshold	100	50	100	100	100

**Table 4. NPRM EWR 2022 Annual Emissions Inventory (tons per year)**

	CO	VOC	NOx	SOx	PM 2.5
Alternative 1 - Level 3	2,961.7	432.4	2,802.1	307.9	26.4
No Action - Order Expires	3,144.5	455.5	3,009.5	328.0	27.9
Alternative 1 vs. No Action Comparison	-182.8	-23.1	-207.4	-20.1	-1.5
<b>Alternative 2 - Level 2</b>					
Alternative 2 - Level 2	3,028.7	440.2	2,880.7	316.2	27.0
No Action - Order Expires	3,144.5	455.5	3,009.5	328.0	27.9
Alternative 2 vs. No Action Comparison	-115.8	-15.3	-128.8	-11.8	-0.9
<b>Alternative 2 - Level 2</b>					
Alternative 2 - Level 2	3,028.7	440.2	2,880.7	316.2	27.0
Alternative 1 - Level 3	2,961.7	432.4	2,802.1	307.9	26.4
Alternative 2 vs. Alternative 1 Comparison	67.0	7.7	78.6	8.3	0.6
<b>Applicable De Minimis Threshold</b>					
Applicable De Minimis Threshold	100	50	100	100	100

### Climate Change/Greenhouse Gases

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The impact of proposed Federal actions on climate change is of growing public concern. The Council on Environmental Quality (CEQ) has issued a Revised Draft Guidance for Greenhouse Gas Emissions and Climate Change Impacts that describes how federal agencies should consider the effects of greenhouse gas (GHG) and climate change in NEPA reviews<sup>1</sup>.

Due to reductions in aircraft activity between the No Action versus Alternative 1 scenarios and the No Action and Alternative 2 scenarios, reductions in fuel burn and CO<sub>2</sub> are projected in 2017 and

<sup>1</sup> CEQ Revised Draft Guidance for Greenhouse Gas Emissions and Climate Change Impacts, released on December 18<sup>th</sup>, 2014.

2022. Therefore, less CO2 would be emitted by aircraft under the implementation of Level 2 Slot Controls or Level 3 Slot Controls compared the unrestricted No Action scenario (Order Expires).

Due to the increase in aircraft activity between the Alternative 2 and the Alternative 1 scenarios there would be an increase fuel burn and CO2. The annual increase for CO2 emissions in 2017 and 2022 at EWR are below the CEQ reference point of 25,000 metric tons for quantitative reporting. Even though the overall CO2 emissions are below the CEQ 25,000 metric ton reference point, AEDT 2b SP2 reports the fuel burn and CO2 emission along with criteria pollutant emissions. Therefore, the values for each scenario and comparison of Alternatives are listed in Table 5.

**Table 5. NPRM EWR 2017 and 2022 Annual CO2 Inventory**  
(Metric Tons per year)

	2017		2022	
	Fuel Burn (Metric Tons)	CO2 (Metric Tons)	Fuel Burn(Metric Tons)	CO2 (Metric Tons)
Alternative 1 - Level 3	206,111	650,281	238,301	751,838
No Action - Order Expires	216,609	683,402	253,870	800,958
Alternative 1 vs. No Action Comparison	-10,498	-33,121	-15,569	-49,120
<b>Alternative 2 - Level 2</b>				
Alternative 2 - Level 2	210,616	664,494	244,703	772,037
No Action - Order Expires	216,609	683,402	253,870	800,958
Alternative 2 vs. No Action Comparison	-5,993	-18,908	-9,167	-28,921
<b>Alternative 2 - Level 2</b>				
Alternative 2 - Level 2	210,616	664,494	244,703	772,037
Alternative 1 - Level 3	206,111	650,281	238,301	751,838
Alternative 2 vs. Alternative 1 Comparison	4,505	14,213	6,402	20,199

The U.S. General Accounting Office (GAO) reports that aviation accounts "for about 3 percent of total U.S. greenhouse gas emissions from human sources" compared with other industrial sources, including the remainder of the transportation sector (23%) and industry (41%). US GAO Environment: Aviation's Effects on the Global Atmosphere Are Potentially Significant and Expected to Grow," GAO/RCED-00-57, February 2000, p.4. The scientific community and FAA are leading/participating in several efforts to more precisely estimate aviation's role and effect on the global atmosphere and climate change.

When viewed in the context of available information, the CO<sub>2</sub> emissions attributable to the EWR NPRM show reductions, compared to the unrestricted scenario. Therefore, the NRPM has no potential to significantly increase aviation's CO<sub>2</sub> contribution to greenhouse gas emissions when comparing to the No Action scenario.

There is an increase in CO<sub>2</sub> emissions when implementing a Level 2 Slot Control (Alternative 2) compared to keeping the Level 3 Slot Control (Alternative 1). Due to aviation contributing to approximately 3% of total U.S. GHG emissions and that the increase is below the CEQ reference point for quantitative analysis, the NRPM does not significantly increase aviation's CO<sub>2</sub> contribution to greenhouse gas emissions.

## **Conclusion**

Based on the above analysis, and consistent with paragraph 5 2.b of FAA Order 1050.1F, the FAA has determined the proposed action at EWR would not change the approach or departure procedures or the current routes of aircraft, result in a significant increase in noise, or an increase air emissions that exceed applicable de minimis thresholds. As such the proposed action would not involve any extraordinary circumstances because they would not:

- 1) Cause an adverse effect on cultural resources protected under the National Historic Preservation Act of 1966, as amended, 54 U.S.C. §300101 et seq.;
- 2) have the potential to cause a significant impact on properties protected under Section 4(f);
- 3) have the potential to cause a significant impact, ecological, or scenic resources of Federal, state, tribal, or local significance (e.g., federally listed or proposed endangered, threatened, or candidate species, or designated or proposed critical habitat under the Endangered Species Act, 16 U.S.C. §§ 1531-1544);
- 4) have the potential to cause a significant impact on the following resources: resources protected by the Fish and Wildlife Coordination Act, 16 U.S.C. §§ 661-667d; wetlands; floodplains; coastal zones; national marine sanctuaries; wilderness areas; National Resource Conservation Service-designated prime and unique farmlands; energy supply and natural resources; resources



protected under the Wild and Scenic Rivers Act, 16 U.S.C. §§ 1271-1287, and rivers or river segments listed on the Nationwide Rivers Inventory (NRI); and solid waste management;

5) cause a division or disruption of an established community, or a disruption of orderly, planned development, or an inconsistency with plans or goals that have been adopted by the community in which the project is located;

6) cause an increase in congestion from surface transportation (by causing decrease in level of service below acceptable levels determined by appropriate transportation agency, such as a highway agency);

7) have the potential to cause a significant impact on noise levels of noise sensitive areas;

8) have the potential to cause a significant impact on air quality or a violation of Federal, state, tribal, or local air quality standards under the Clean Air Act, 42 U.S.C. §§ 7401-7671q;

9) have the potential to cause a significant impact on water quality, sole source aquifers, a public water supply system, or state or tribal water quality standards established under the Clean Water Act, 33 U.S.C. §§ 1251-1387, and the Safe Drinking Water Act, 42 U.S.C. §§ 300f-300j-26;

10) cause impacts on the quality of the human environment that are likely to be highly controversial on environmental grounds, as defined in paragraph 5 2.b of FAA Order 1050.1F;

11) be likely to be inconsistent with any Federal, state, tribal, or local law relating to the environmental aspects of the proposed action; or

12) otherwise have the potential to directly, indirectly, or cumulatively create a significant impact on the human environment.