U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION
EASTERN SERVICE CENTER

FINDING OF NO SIGNIFICANT IMPACT
and
RECORD OF DECISION

TETERBORO AIRPORT RNAV (GPS) RWY 19 OFFSET ENVIRONMENTAL ASSESSMENT

Teterboro Airport, Teterboro, New Jersey

September 10, 2020

I. Introduction

This document serves as the Federal Aviation Administration's (FAA) Finding of No Significant Impact and Record of Decision (FONSI/ROD) based on the information and analysis contained in the Final Environmental Assessment (EA) (2020) for the Teterboro Airport RNAV (GPS) RWY 19 Offset and all corresponding Appendices. It provides final agency determinations and environmental approvals for the federal actions necessary to implement the airspace procedure known as the Area Navigation (RNAV) Global Positioning System (GPS) Arrival Procedure to Runway 19 at Teterboro Airport (herein referred to as RNAV (GPS) RWY 19 Offset procedure). The FONSI/ROD has been prepared in compliance with the National Environmental Policy Act of 1969 (NEPA), FAA Order 1050.1F, Environmental Impacts: Policies and Procedures, as well as the Council on Environmental Quality (CEQ) regulations for implementing NEPA at Title 40 of the Code of Federal Regulations Part 1500-1508 (40 CFR 1500-1508). This FONSI/ROD demonstrates and documents FAA's compliance with all applicable environmental laws and requirements, including interagency and intergovernmental coordination and consultation, public involvement and documentation requirements.

II. Background

Teterboro Airport (the Airport) is a general aviation reliever airport located approximately 12 miles west of New York City in Bergen County, New Jersey. General aviation reliever airports provide additional capacity to areas containing one or more congested commercial service airports. The Airport is owned and operated by the Port Authority of New York and New Jersey. (PANYNJ)

In 2007, the Teterboro Airport Noise Abatement and Advisory Committee (TANAAC) sent a letter to the FAA Administrator requesting that an alternative procedure be developed for Runway 19 arrivals that would move aircraft away from the Hackensack University Medical Center and the surrounding area. Over the next eight years, the FAA, PANYNJ, and TANAAC worked together to develop a procedure that would achieve this goal. The procedure was finalized in 2015; in April of 2016, the FAA began a six-month testing period of the new procedure, known as the Quiet Visual RWY 19 procedure.

A six-month test of the Quiet Visual RWY 19 procedure showed that the procedure was technically feasible and it was flown successfully during the test period. However, because the procedure increased pilot workload, most pilots generally opted not to fly the procedure, resulting in low usage during the test period and because of this low usage, the FAA determined that the Quiet Visual RWY 19 procedure would not be made permanent. After the test, TANAAC reiterated its continued support for the development of an alternative procedure for Runway 19 in a letter to the FAA Regional Administrator in January 2018. Using the Quiet Visual RWY 19 procedure as an initial design, PANYNJ, TANAAC, and FAA developed the current Proposed Action, the TEB RNAV (GPS) RWY 19 Offset.

III. Proposed Action

The Proposed Action (RNAV (GPS) RWY 19 Offset) is the implementation of an RNAV procedure that closely mimics the Quiet Visual RWY 19 procedure. Aircraft arriving at the Airport would

continue following existing routes, but during periods of light activity, RNAV-capable aircraft arriving on Runway 19 would be directed to follow the proposed procedure beginning at waypoint[1] EMPTY on the New York/New Jersey border. Flight paths upstream from this new routing would be unaffected.

In the new procedure, FAA would create new waypoints EMPTY, WHOLN, MOOGZ, and DUUNE which are generally aligned along the New Jersey Route 17 corridor. The anticipated minimum altitudes above field elevation (AFE) at the waypoints in the procedure are 3,000 feet at EMPTY, 2,300 feet at WHOLN, 1,700 feet at MOOGZ, and 1,500 feet at DUUNE (roughly above the intersection of New Jersey Route 4 and New Jersey Route 17).[2] From DUUNE aircraft would intercept the Runway 19 Instrument Landing System (ILS) for a short final into Runway 19. Turboprop aircraft and jet aircraft that are not RNAV-capable would continue to arrive via existing Runway 19 arrival procedures. The proposed procedure is designated as RNAV (GPS) RWY 19 Offset, and as an RNAV approach procedure requires that an aircraft flying the procedure remain within one nautical mile (NM) of the procedure centerline 95% of the total flight time.

IV. Purpose and Need for the Proposed Action

The FAA's continuing mission is to provide the safest, most efficient aerospace system in the world. The purpose of the Proposed Action is to address the concerns expressed by PANYNJ and TANAAC concerning Teterboro Airport, especially as they relate to air traffic control (ATC) procedures at the Airport by developing arrival procedures that take advantage of modern technology.

The PANYNJ, as the operator of Teterboro Airport, has a longstanding partnership with the surrounding community to proactively address noise issues. Over ten years ago PANYNJ and TANAAC identified an opportunity to reduce noise impacts in communities surrounding the Airport by having aircraft arriving on Runway 19 fly an offset approach roughly above State Highway 17. This concept was embraced by the two U.S. Senators from New Jersey and the congressional representative from the district that includes the Airport in a January 8, 2007 letter. Since the concept was first identified, PANYNJ, TANAAC and FAA have worked to develop a detailed arrival procedure for an offset approach and then refined that procedure to optimize pilot utilization. The culmination of that work was reflected in a final recommendation identified in a January 8, 2018 letter from TANAAC to the FAA. On September 25, 2019, PANYNJ sent a letter to the FAA referencing the January 8, 2018 letter sent by TANAAC and giving their support for the development of an offset approach to Runway 19. FAA supports opportunities to work with airport

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[1] "A waypoint is a predetermined geographical position that is defined in terms of latitude/longitude coordinates. Waypoints may be a simple named point in space or associated with existing navaids, intersections, or fixes."
https://tfmlearning.faa.gov/Publications/atpubs/AIM/Chap1/aim0102.html

[2] The Term *Above Field Elevation (AFE)* refers to the number of feet above the field or airport elevation. The airport elevation is defined as the highest point of an airport's usable runways measured in feet from mean sea level. AFE refers to a location above that field elevation and is normally expressed in feet.

operators and address community concerns when they align with FAA's mission of operating a safe and efficient airspace system.

Currently, aircraft arriving on Runway 19 at the Airport overfly the Hackensack University Medical Center and the densely populated communities of Hackensack, Teaneck, and River Edge. The FAA is seeking to respond to the request from PANYNJ by making available an alternative arrival procedure that overflies a less densely populated corridor, while maintaining efficient operation of airspace around the Airport.

V. Alternatives

The clear identification and thorough discussion of project alternatives is imperative so that the potential impacts of each alternative can subsequently be distinctly defined and easily distinguished. A potential alternative is one that would accomplish the Purpose and Need for the Proposed Action while being a reasonable and feasible action. In order to be a reasonable alternative, the procedure must be safe and efficient.

Maintain Existing Arrival Routes into Runway 19 (No Action Alternative)

The No Action Alternative would maintain the Runway 19 arrivals that are currently flown. The current options for approaches to Runway 19 include the ILS or Localizer (LOC) RWY 19, the RNAV Required Navigation Performance (RNP) Z RWY 19, and the RNAV (GPS) Y RWY 19.

Aircraft that arrive to Runway 19 transition to the RNAV (GPS) Y RWY 19 approach over waypoint SKUBY at 6,000 feet AFE and then head to waypoint NIPIE, and then finally turn to a heading of 195 degrees when the aircraft intercepts the Runway 19 ILS. On their approach to the Airport, aircraft on the RNAV (GPS) Y RWY 19 also approach the Airport on an inbound approach course of 195 degrees. The ILS or LOC RWY 19 transitions toward Runway 19 over waypoint UNVIL at a minimum altitude of 2,000 feet and then over waypoint TUGGZ at a minimum altitude of 1,500 feet before final approach. The RNAV(GPS) Y RWY 19 routes aircraft via waypoints WULVI and NYGTS at the same respective minimum altitudes of 2,000 feet and 1,500 feet. Aircraft approaching Runway 19 on the ILS OR LOC RWY 19 can maintain a steeper approach angle as UNVIL is slightly closer to the Airport than the corresponding point (WULVI) on the RNAV (GPS) Y RWY 19. The waypoints, with a minimum altitude of 1,500 feet for both straight-in approach procedures, are in an identical position for both procedures. The final approach tracks of both procedures pass over the Hackensack University Medical Center and result in aircraft being roughly 750 feet above ground when they fly over the nine-story medical center.

The RNAV (RNP) Z RWY 19 procedure routes aircraft approaching the Airport from the COATE waypoint, STILLWATER VOR/DME, and the SHOTT waypoint, and accounts for just three percent of all arrivals into Runway 19. The aircraft merge onto a common route at the waypoint LELME and head east on a heading of 095 degrees towards the intermediate fix COMOK, which has a minimum altitude of 3,000 feet. The procedure passes waypoint HOOTH (minimum altitude of 2,000 feet) and joins with the other two RWY 19 approaches at ALSIW, which is identical to TUGGZ and NYGTS and has an identical minimum altitude of 1,500 feet. This path brings these

aircraft over the Hackensack University Medical Center while on final approach similar to the two straight-in procedures.

Under the No Action Alternative, all aircraft arriving to Runway 19 on the existing approaches discussed above would continue to overfly the Hackensack University Medical Center. Although it does not meet the Purpose and Need, the No Action Alternative is carried forward for further environmental analysis in accordance with CEQ regulations implementing NEPA.

Proposed Action Alternative

The Proposed Action Alternative (RNAV (GPS) RWY 19 Offset) is the implementation of an RNAV procedure that closely mimics the Quiet Visual RWY 19 procedure. Aircraft arriving at the Airport would continue following existing routes, but during periods of light activity, RNAV-capable aircraft arriving on Runway 19 will be directed to follow the proposed procedure beginning at waypoint EMPTY on the New York/New Jersey border. Flight paths upstream from this new routing will be unaffected.

In the new procedure, FAA will create new waypoints EMPTY, WHOLN, MOOGZ, and DUUNE which are generally aligned along the New Jersey Route 17 corridor. The anticipated minimum altitudes above field elevation (AFE) at the waypoints in the procedure are 3,000 feet at EMPTY, 2,300 feet at WHOLN, 1,700 feet at MOOGZ, and 1,500 feet at DUUNE (roughly above the intersection of New Jersey Route 4 and New Jersey Route 17). From DUUNE aircraft will intercept the Runway 19 Instrument Landing System (ILS) for a short final into Runway 19. Turboprop aircraft and jet aircraft that are not RNAV-capable would continue to arrive via existing Runway 19 arrival procedures.

The proposed procedure is designated as RNAV (GPS) RWY 19 Offset, and as an RNAV approach procedure requires that an aircraft flying the procedure remain within one nautical mile (NM) of the procedure centerline 95% of the total flight time.

The FAA, at the request of PANYNJ and TANAAC, developed the RNAV (GPS) RWY 19 Offset arrival procedure. The arrival procedure mimics the previously developed Quiet Visual RWY 19 procedure in an effort to reduce overflights of the Hackensack University Medical Center. (Currently, all arrival procedures into the Airport take a path that overflies Hackensack University Medical Center.). Shifting flights from currently existing procedures to the arrival procedure that is the subject of the Proposed Action Alternative would reduce overflights of the Hackensack University Medical Center. The Proposed Action Alternative was refined and technically evaluated to meet RNAV performance criteria and it was preliminarily evaluated for noise impacts; it is carried forward for further environmental analysis.

V. Affected Environment

The Airport is a general aviation reliever airport located approximately 12 miles west of New York City in Bergen County, New Jersey. General aviation reliever airports provide additional capacity to areas containing one or more congested commercial service airports. The Airport is owned and operated by PANYNJ. There were 174,747 aircraft operations at the Airport in 2018. The Airport has two runways, Runway 01/19 and Runway 06/24. Runway 01/19 is 7,000 feet long and

oriented in a north-south direction. Runway 06/24 is 6,013 feet long and is oriented in a northeast/southwest direction. The Airport property covers 827 acres and occupies most of the borough of Teterboro while also extending into the neighboring boroughs of Moonachie and Hasbrouck Heights.

General Study Area

The General Study Area (GSA) encompasses an area of approximately 705 square miles in the states of New Jersey and New York. This includes all or parts of Bergen, Essex, Hudson, Morris, Passaic, and Sussex counties in New Jersey and parts of Orange, Rockland, and New York counties in New York. The GSA was constructed to encompass the geographic area where an aircraft flight path could be affected as a result of the Proposed Action Alternative. The Airport is located in the southeastern corner of the GSA. There are five other airports in the GSA, all located in the state of New Jersey:

- Essex County Airport (CDW)
- Greenwood Lake Airport (4N1)
- Hill Top Airport (JY43)
- Lincoln Park Airport (N07)
- Morristown Municipal Airport (MMU)

VI. Environmental Consequences

Neither the Proposed Action Alternative nor the No Action Alternative are anticipated to affect certain environmental resource categories identified in the Desk Reference for FAA Order 1050.1F. Accordingly, no further discussion of these environmental resource categories is warranted. These environmental resource categories include:

- Biological Resources – Fish, Plants, and Terrestrial Species Only
    - The Proposed Action Alternative does not result in ground-based disturbance and is therefore not expected to have impacts on any terrestrial organisms considered as part of the Biological Resources impact category.
- Coastal Resources
    - The Proposed Action Alternative is an airspace action with no physical ground based improvements and is thus not expected to have an impact on any coastal area or coastal ecosystem.
- Farmlands
    - The Proposed Action Alternative is an airspace action with no physical ground based improvements and thus would not cause any conversion of farmlands into non-agricultural uses.

- Hazardous Materials, Solid Waste, and Pollution Prevention
    - The Proposed Action Alternative does not include construction or physical improvements and thus is not expected to have any impact on solid waste, hazardous waste, contaminated sites as defined by FAA Order 1050.1F, and solid waste management.
- Historical, Architectural, Archeological, and Cultural Resources – Archeological Resources Only
    - The Proposed Action Alternative is an airspace action with no physical ground based improvements and thus is not expected to have any impact on any archeological sites.
- Natural Resources and Energy Supply
    - The Proposed Action Alternative would not cause demand to exceed the availability of available or future supplies of natural resources.
- Socioeconomics, Environmental Justice, and Children's Environmental Health – Socioeconomics and Children's Environmental Health Only
    - The Proposed Action Alternative is not expected to cause any changes to a community tax base, or any disruption or relocation of any community business or houses. The Proposed Action Alternative is not expected to disproportionately cause a health or safety risk to children. Thus, these parts of this impact category were not considered.
- Light Emissions and Visual Effects
    - The Proposed Action Alternative is an airspace action only. Airspace actions are associated with low levels of light intensity. The Proposed Action Alternative is thus not expected to cause any changes to light emissions or visual effects in the GSA.
- Water Resources (including Wetlands, Floodplains, Surface Waters, Groundwater, and Wild and Scenic Rivers)
    - The Proposed Action Alternative is an airspace action with no physical ground-based improvements and thus is not expected to cause any changes to water resources in the GSA.

The potential environmental impacts from the Proposed Action Alternative were evaluated in the attached Final EA for each of the following impact categories. No significant impacts to the quality of the human or natural environment were identified for any of the categories. Therefore, no Environmental Impact Statement is required to be, or has been, prepared.

Noise and Noise-Compatible Land Use

The Aviation Environmental Design Tool (AEDT) is the FAA's approved model for assessing noise and emissions at civilian airports. Operational inputs (aircraft flows and operations) were developed by utilizing the radar traffic data covering the period January 1, 2018 to December 31, 2018. The data were processed to develop representative backbone routes with lateral dispersion and aircraft operations flying on those routes. Operational inputs to the noise model include the number of operations on an average annual day, the type and frequency of aircraft operations, runway locations and use, flight track locations and use, and the time of day of operations (daytime or nighttime).

The Proposed Action Alternative for the RNAV (GPS) RWY 19 Offset procedure was designed in the FAA's standard procedure design tool, the Terminal Area Route Generation and Traffic Simulation tool (TARGETS). TARGETS is an FAA-developed software tool for airspace procedure development that offers a unique combination of capabilities for RNAV procedure design, flyability assessment, and ATC service provision, and operator evaluation and familiarization of these procedures through simulation.[3] Output from TARGETS was used to provide a three-dimensional flight track for development of the Proposed Action Alternative for noise modeling in AEDT. For the modelling, the Proposed Action Alternative assigns 34.15% of eligible average daily Runway 19 arrivals to the RNAV (GPS) RWY 19 Offset procedure based on estimates provided by the New York TRACON and concurred by the Teterboro ATCT. A detailed discussion of the noise modeling methodology can be found in Sections 3.4.6 and 4.6 of the Final EA and in Appendix D, the Noise Modeling Technical Report.

Changes in noise exposure for each population centroid in the GSA were evaluated based on FAA requirements to determine the degree of change in noise exposure. Aircraft noise is required, per FAA Order 1050.1F, to be evaluated in terms of the day-night average sound level (DNL) metric. FAA Order 1050.1F further defines that a significant impact would occur if a proposed action would result in an increase of 1.5 dB or more in any noise sensitive area at or above the DNL 65 exposure level when compared to the No Action Alternative for the same timeframe. The Aviation Environmental Design Tool (AEDT) is the FAA's approved model for assessing noise and emissions at civilian airports and is used to estimate the long-term average changes in environmental impacts.

For the purpose of this noise analysis, increases of 1.5 dB above the DNL 65 noise exposure level are considered significant. Per FAA Order 1050.1F, increases of 3.0 dB between the DNL 60 and 65 noise exposure level are to receive consideration when evaluating the environmental impacts of a proposed project, and would be identified regardless of whether a significant impact is identified. Increases of 5.0 dB or greater at noise exposure levels between DNL 45 and 60 are to be disclosed. The FAA noise level criteria were used to compare DNL changes at the population centroids in the GSA, which were evaluated under the following categories: (1) those

3 https://www.mitre.org/research/technology-transfer/technology-licensing/terminal-area-route-generation-and-traffic

receiving an increase in noise exposure relative to the No Action Alternative; (2) those receiving a decrease relative to the No Action Alternative; and (3) those having no change relative to the No Action Alternative. Additionally, in accordance with FAA Order 1050.1F, special consideration was given to the evaluation of the significance of noise impacts on noise sensitive areas within national parks, national wildlife refuges and historic sites. For example, the DNL 65 dB noise exposure level does not adequately address the effects of noise on visitors to areas within a national park where other noise is low and a quiet setting is the recognized intention of the area.

There is no change to the number of aircraft operations or types of operations, nor does overall runway use change as part of the Proposed Action Alternative. The noise analysis therefore reflects changes in noise exposure only due to the implementation of the RNAV (GPS) RWY 19 Offset approach to Runway 19 (the Proposed Action Alternative), as compared to the No Action Alternative. A comparison of the 2018 No Action and 2018 Proposed Action Alternatives noise exposure for populated centroids indicates there are no significant impacts (increases of 1.5 dB in areas that would be exposed to DNL values of 65 or higher) or increases of 3.0 dB in areas that would be exposed to DNL value between 60 and 65 dB. Within these two DNL noise levels, there would be no decreases of 1.5 dB in the DNL 65 dB or higher and 3.0 dB in the DNL 60-65 dB. In areas exposed to DNL between 45 dB and 60 dB in the Proposed Action Alternative, 44 population centroids representing 3,024 persons would experience reportable noise increase of 5.0 dB or more over the corresponding population centroids in the No Action Alternative. Within the DNL 45-60 dB, there are no population centroids where a decrease of 5.0 dB or more would be seen. The grouping of reportable population centroids is centered around the confluence of Ho-Ho-Kus, Paramus, Ridgewood, and Washington Township along State Route 17 with the majority of centroids in Paramus and Ridgewood. Of the increases at these 44 reportable centroids, the average increase in noise would be 5.47 dB with a maximum modeled increase of 5.91 dB, and the absolute value of the highest modeled noise value from these 44 population centroids would be 46.70 dB DNL.

The use of the 1050.1F noise standards to apply to the Department of Transportation Act Section 303(c) (also known as Section 4(f) and historic properties are discussed in the respective sections below.

Air Quality

The United States Environmental Protection Agency (EPA) has established National Ambient Air Quality Standards (NAAQS) for ambient (i.e., outdoor) concentrations of the following criteria pollutants: carbon monoxide (CO), nitrogen dioxide (NO_2), ground-level ozone (O_3), sulfur dioxide (SO_2), lead (Pb), particulate matter with a diameter of 10 microns or less (PM_{10}), and particulate matter with a diameter of 2.5 microns or less ($PM_{2.5}$). States must identify geographic areas that do not meet the NAAQS for each criteria pollutant. These areas are then identified as non-attainment areas for the applicable criteria pollutant(s). States must develop a State Implementation Plan (SIP) for non-attainment areas that includes a variety of emission control measures that the state deems necessary to produce attainment of the applicable standard(s) in

the future.[4] As described in FAA Order 1050.1F, Exhibit 4-1, an emissions impact is significant if "the action would cause pollutant concentrations to exceed one or more of the NAAQS, as established by the EPA under the Clean Air Act, for any of the time periods analyzed, or to increase the frequency or severity of any such existing violation."

Section 176(c) (commonly referred to as the General Conformity Rule) of the Clean Air Act (CAA) requires that federal actions conform to the appropriate SIP to attain the air quality goals identified in the CAA.[5] A conformity determination is not required if the emissions caused by a federal action would be less than the *de minimis* levels established by regulations issued by EPA.[6] The EPA regulation, 40 CFR 93.153 (b)(1)(2), specifies an emission level or *de minimis* level for each NAAQS pollutant and non-attainment area at which the emissions associated with the action are unlikely to contribute to a violation of the NAAQS or delay timely attainment of the NAAQS. FAA Order provides that further analysis for NEPA purposes is not normally required where emissions do not exceed the EPA's *de minimis* thresholds. In addition, the EPA regulations allow federal agencies to identify specific actions as "presumed to confirm" to the applicable SIP.

The EPA regulations identify certain actions that are presumed to conform with an applicable SIP because the actions were found by EPA to not exceed those *de minimis* thresholds, including air traffic control activities and adoption of approach, departure, and enroute procedures for air operations above the inversion base for pollutant containment (commonly referred to as the "mixing height") specified in the applicable SIP (or 3,000 feet Above Ground Level in places without an established mixing height).[7] The full list of actions "presumed to conform" under General Conformity can be found in 72 Fed.Reg. 41565, July 30, 2007.[8] The General Conformity Rule also contains a provision that allows agencies to develop a list of actions presumed to conform, which would be exempt from the requirements of the rule. One of the actions published by the FAA is "air traffic control activities for air operations that occur at altitudes below the atmospheric mixing height, provided that modifications to routes and procedures are designed to

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[4] The EPA requirements governing State Implementation Plans (SIPs) are found in multiple sections of the Clean Air Act starting in Section 107(a). These regulations can be found at https://www.epa.gov/air-quality-implementation-plans/sip-requirements-clean-air-act

[5] The initial and modified regulations governing Transportation Conformity can be found at https://www.epa.gov/general-conformity/transportation-conformity-regulations-and-general-conformity-regulations

[6] *de minimis* levels are defined in 40 CFR 93.153(b) (1)-(2), and can be found at https://www.epa.gov/general-conformity/de-minimis-tables

[7] 72 Fed. Reg 41565, p. 41569, July 30, 2007. https://www.faa.gov/airports/resources/publications/federal_register_notices/media/environmental_72fr41576.pdf

[8] 72 Fed. Reg 41565, p. 41565, July 30, 2007. https://www.faa.gov/airports/resources/publications/federal_register_notices/media/environmental_72fr41576.pdf

enhance operational efficiency (i.e. to reduce delay), increase fuel efficiency, or reduce community noise impacts by means of engine thrust reductions."[9]

Implementation of the Proposed Action Alternative would result in a small increase in the amount of fuel burned and emissions emitted below the mixing height when compared to the No Action Alternative. Increased emissions of criteria pollutants, however, would not reach the *de minimis* thresholds that EPA defines as delaying timely attainment of the NAAQS, in any of the counties that comprise the GSA. As a result, implementation of the Proposed Action Alternative would not have a significant impact on air quality.

As the AEDT emissions results show, implementing the Proposed Action Alternative would not cause exceedances of the *de minimis* thresholds applicable to the GSA for any pollutant. Based on the above analysis, no further air quality analysis is necessary and a conformity determination is not required.

Climate

Greenhouse gases (GHGs) are naturally occurring and man-made gases that trap heat in the earth's atmosphere. These gases include CO_2, methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6). For airspace actions, the primary source of greenhouse gases is CO_2 emissions from aircraft fuel combustion. CO_2 emissions for current flight operations (i.e. No Action Alternative) were calculated using AEDT for the lengths of the modeled tracks.

While fuel burn would slightly increase under the Proposed Action Alternative when compared with the No Action Alternative, there is no significance threshold for aviation GHG emissions set by FAA Order 1050.1F. Regardless, this Proposed Action Alternative is not anticipated to cause significant effects on climate.

The lateral changes in the Proposed Action Alternative cause only a small increase in the total miles flown by aircraft and therefore the total amount of additional fuel required for each arrival operation under the Proposed Action Alternative is minimal. Based on an analysis of AEDT results, total fuel burn associated with arriving phases of flight below 10,000 feet AFE is approximately 0.4% higher on an annual basis in the Proposed Action Alternative than in the No Action Alternative. This represents an increase of approximately 23 metric tons of fuel (approximately 74 metric tons of CO_2e) on an annualized basis.

Biological Resources – Wildlife Only

The significance threshold pertaining to Biological Resources is if "the action would be likely to jeopardize the continued existence of a federally listed threatened or endangered species or

[9] 72 Fed. Reg 41565, p. 41568, July 30, 2007. https://www.faa.gov/airports/resources/publications/federal_register_notices/media/environmental_72fr41576.pdf

would result in the destruction or adverse modification of federally designated critical habitat." Since this is an airspace action, there is not expected to be any destruction of critical habitat but an impact on a federally listed species is possible through wildlife strikes. Wildlife strikes are a common occurrence at airports around the country with over 194,000 wildlife strikes on civil aircraft occurring between 1990 and 2017. Almost all bird strikes (92%) occur at or below 3,500 feet above ground level making the area near an airport the most critical area.[10]

The FAA National Wildlife Strike Database keeps a record of all reported wildlife strikes in the United States since 1990. Since 1990, there have been 1,736 wildlife strikes at the Airport with 141 of these wildlife strikes occurring in 2018.

Of the 1,736 historical strikes at the Airport, no strikes were reported of any of the federally listed species. There were only six strikes of all applicable state listed species on approaches into Runway 19: three strikes of threatened species and three strikes of endangered species. An analysis of arrivals on all runways indicated that there were only ten total strikes: seven strikes of threatened species and three strikes of endangered species. Since there are no historical strikes of the federally listed species, the significance threshold would not be triggered by the Proposed Action Alternative.

In order to comply with the Bald and Golden Eagle Protection Act (BGEPA), the most recent Bald Eagle nesting survey from the New Jersey Department of Environmental Protection (Division of Fish and Wildlife) was consulted to identify locations of bald eagle nests relative to the Proposed Action Alternative to ensure that the Proposed Action Alternative would not be seen as "disturbing" eagles per the definition in the BGEPA. Five nests were identified within the General Study Area but the nests would not be overflown by the Proposed Action Alternative removing the possibility of potential disturbance.

Section 4(f) 49 U.S.C. Section 303(c)

Section 4(f) of the Department of Transportation (DOT) Act of 1966 (codified at 49 U.S.C. Section 303(c)), commonly referred to as Section 4(f), restates in FAA's 1050.1F that:

> *"… [the] Secretary of Transportation may approve a transportation program or project requiring the use of any publicly owned land of a public park, recreation area, or wildlife or waterfowl refuge of national, state, or local significance or land from a historic site of national, State, or local significance, only if there is no feasible and prudent alternative to the using that land and the program or project includes all possible planning to minimize harm resulting from the use."* [11]

The word "use" includes both direct and indirect or "constructive" impacts to Section 4(f) properties. An indirect impact or "constructive" use does not require a physical taking of a Section

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10 FAA Wildlife Strike Frequently Asked Questions and Answers, https://www.faa.gov/airports/airport_safety/wildlife/faq/

11 FAA Order 1050.1F, B-2 Section 4(f), 49 U.S.C. 303, p. B-9, https://www.faa.gov/documentLibrary/media/Order/FAA_Order_1050_1F.pdf,

4(f) property. A constructive use would occur when a project would produce an effect, such as excessive noise, that would result in substantial impairment to a property to the degree that the activities, features, or attributes of the property that contribute to its significance or enjoyment are substantially diminished. The determination of use must consider the entire property and not simply the portion of the property being used for a proposed action.

The FAA has established guidelines for aircraft noise and land use compatibility under 14 CFR Part 150 (Part 150). However, the applicability of Part 150 is limited when assessing noise impacts to areas where quiet and serenity are expected attributes. Accordingly, special consideration is given to parks and natural areas where a quiet setting is a generally recognized purpose and attribute. In these areas the FAA "must consult all appropriate Federal, State, and local officials having jurisdiction over the affected Section 4(f) resources when determining whether project-related noise impacts would substantially impair the resource."

Section 4(f) properties in the GSA were identified using both federal and state sources. A total of 5,213 Section 4(f) properties have been identified in the GSA. The Section 4(f) properties identified as being part of the GSA were evaluated to identify potential noise increases that may represent an adverse impact or constructive use of the property. These properties were also evaluated with the same noise increase data for any noise sensitive areas within the Section 4(f) properties that have a quiet setting as an attribute. For each of the 5,213 Section 4(f) properties, a centroid at the center of each property was generated and the noise impact was calculated at each point for the No Action Alternative and for the Proposed Action Alternative. This noise impact was judged versus the noise exposure levels spelled out in FAA Order 1050.1F, where a change of 1.5 dB in the DNL 65 dB noise exposure level is considered significant, and a change of 3.0 dB in the DNL 60-65 dB noise exposure level or a change of 5.0 dB in the DNL 45-60 dB noise exposure level is considered as reportable.

For all of these Section 4(f) centroids, there were no significant noise impacts (increases of 1.5 dB within the DNL 65 noise exposure level) found within the GSA. This includes national, state, and local parks as well as state forests, state historic sites, and state & local refuges. There were also no increases above the 45 DNL noise exposure level in Section 4(f) properties within the GSA located in a quiet setting, where the setting is an attribute of the site's significance, such as a national park or national wildlife refuge within the GSA. There were ten properties without quiet attributes or settings that experienced an increase that met the FAA Order 1050.1F noise exposure level for a reportable increase. Of the increases at these ten properties, the average increase in noise would be 5.43 dB with a maximum increase of 5.86 dB, and the absolute value of the highest noise value would be 46.62 dB. As these DNL values are below the guidelines put forth in 14 CFR Part 150 and none of these parks had a quiet setting as an attribute, the Proposed Action Alternative was determined to not cause any constructive use at these or any 4(f) properties in the GSA. A more detailed discussion of the Section 4(f) determination can be found in Sections 3.4.4 and 4.4 of the Final EA; a list of the Section 4(f) Properties Identified in the General Study Area can be found in Appendix B of the Final EA.

Historic, Architectural, Archaeological, and Cultural Resources

The Area of Potential Effects (APE) was formulated based on the areas of potential noise impact criteria according to FAA Orders. FAA Order 1050.1F provides the following criteria for determining impact of changes in aircraft noise

- For DNL 65 dB and higher: +1.5 dB (significant)
- For DNL 60 dB to <65 dB: +3 dB (reportable)
- For DNL 45 dB to <60 dB: +5 dB (reportable)

Forty-four census block population centroids met the noise criteria identified above and the APE was defined by the area of the 44 census blocks. Within the APE, four historic properties were identified for further analysis and review as these four properties experienced a reportable increase in noise. Based on the nature of the airspace change of the Proposed Action Alternative, the four historic properties would not be physically damaged, removed from their current location, have their physical features changed, or result in neglect of any property. A review of these four properties found that none of the properties contained attributes where a quiet setting was used as criteria for designation.

The master plans and planning documents from the four municipalities contained within the APE were consulted to identify any locally significant historical sites not identified during the previous inventory. The Master Plans all mentioned various historical sites and all sites were crosschecked with the existing directory of historic properties; in each case, the property was either already identified as a historic site or was found to be outside the APE.

As part of the requirements for dealing with impacts on historic properties, a discussion of this finding was mailed to the New Jersey Deputy State Historic Preservation Officer on April 23, 2020. The State responded on May 22, 2020 indicating its concurrence with the FAA's analysis. These letters containing the Historic Preservation Officer's written concurrence with both the definition of the APE and the finding of no adverse effect can be found in Appendix A of the Final EA, in accordance with Section 106 of the National Historic Preservation Act. A more detailed discussion of the Historic, Architectural, Archaeological, and Cultural Resources determination can be found in Sections 3.4.5 and 4.5 of the Final EA. A list of the historic properties identified in the General Study Area can be found in Appendix C.

Socioeconomics, Environmental Justice, and Children's Environmental Health – Environmental Justice Only

An Environmental Justice analysis considers the potential of the Proposed Action Alternative to cause disproportionate and adverse effects on low-income or minority populations. In the event that adverse effects are determined, applicable mitigation ensures that no minority or low-income populations bear a disproportionate burden of those effects.

The Proposed Action Alternative would not involve construction of physical facilities nor would it result in a change in noise exposure levels in excess of the applicable thresholds of significance. There will be no acquisition of real estate, no relocation of residents or community businesses,

no disruption to local traffic patterns, no loss in community tax base, and no changes to the fabric of the community. Under the Proposed Action Alternative, there are no Census block groups of low-income concern that would exceed any applicable thresholds of significance for noise impact. Accordingly, there would be no socioeconomic impacts.

Under the Proposed Action Alternative, 17 population centroids in a single minority population Census block group would experience reportable noise increases in the DNL 45 to 60 range. However, the overall percentage of affected minority population at 43.7% is less than the 44.4% overall percentage of average minority population residing in the GSA.

As such, no persons of low income or minority populations would be affected at a disproportionately higher level than would other population segments. Accordingly, under the Proposed Action Alternative there would be no significant EJ impacts.

Cumulative Impacts

The anticipated projects at airports in the GSA were identified and assessed for cumulative impacts. While the Proposed Action Alternative may result in environmental impacts when considered by itself, the cumulative impacts analysis for the Proposed Alternative looked at the potential environmental consequences resulting from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions. This analysis focuses on projects in the GSA that could cumulatively affect noise and/or the impact on noise sensitive resources (i.e. compatible land use, Section 4(f), and Section 106).

For aviation projects identified in the GSA at other airports, the aviation projects were either temporary or are not proximate to the areas experiencing noise increases from the Proposed Action Alternative, so any changes to those operations would not add cumulatively to any potential impacts from the Proposed Action Alternative. The PANYNJ is currently preparing a 14 CFR Part 150 Study for the Airport. This is a voluntary airport study that seeks to identify operational, land use, and programmatic controls that could decrease the exposure of the public to aircraft noise. Noise abatement mitigation strategies that may evolve as part of the Part 150 process, specifically, a Noise Compatibility Program (NCP), would normally be considered here, but PANYNJ's NCP process has not been completed and therefore, the NCP has not been included for consideration as part of this analysis.

The FAA has recently published a new arrival procedure, the RNAV (GPS) RWY 24 and amended two existing procedures, the ILS or LOC RWY 19 and RNAV (GPS) Y RWY 19. The environmental review of these three procedures was completed on April, 2020 and they were published for public use on May 21, 2020. For the amended procedures, each procedure is located to the east of the Proposed Action Alternative and do not currently intersect with the Proposed Action Alternative except at the runway. The amendments made to both procedures overlay each other and consist of adding a transition leg that extends to the northwest along the New Jersey and New York border. It should be noted that the initial and final fix waypoints of the RNAV (GPS) Y RWY 19 have been slightly amended but the amended waypoints will not affect the path of aircraft flying the procedure The transition leg is made up of three waypoints: STRAD, SKUBY, and NIPIE before joining the previous procedures at UNVIL. The new transition does not intersect with the

Proposed Action Alternative but does pass within 1,200 feet at waypoint EMPTY at the beginning of the procedure 15.95 miles from the Airport. Given that there is no direct overlap between the Proposed Action Alternative and the new amendments and are only close together over 15 miles from the Airport, there is no anticipated cumulative impacts from the amendments.

The RNAV (GPS) RWY 24 procedure is a new procedure that follows the same transition waypoints listed above (STRAD, SKUBY, NIPIE) before shifting much further east towards the Hudson River and coming around for a final approach into Runway 24 at the Airport. The Runway 24 procedure is not expected to have cumulative impacts along STRAD, SKUBY, and NIPIE for the same reason as the amendments above, and after passing by NIPIE, the flight path of the RNAV (GPS) RWY 24 does not approach the Proposed Action Alternative until approaching the runway ends on the Airport property. As the new Runway 24 procedure approaches the Airport, the tracks overlay the existing arrival tracks exactly on the final approach so these tracks will not have any greater impact than the existing impact. Early planning efforts indicate that some of the traffic for the Runway 24 procedure currently arrives at the Airport on the Runway 19 ILS or LOC before circling to land on Runway 24. The Runway 24 procedure will then shift this traffic farther away from the Proposed Action Alternative which should reduce the impact in the area directly under the path of the Proposed Action Alternative. For these reasons, there are no anticipated cumulative impacts from the new RNAV (GPS) RWY 24 procedure into the Airport.

To assess the possibility of cumulative impacts from roadway and transportation projects the New Jersey Department of Transportation's *Electronic Statewide Transportation Improvement Program* database was consulted and in the 2018-2027 Transportation Improvement Program there are no projects slated for Highway 17 in the environs of the areas experiencing noise increases from the Proposed Action Alternative. The Bergen County Bus Rapid Transit (BRT) Study, The Central Bergen Bicycle & Pedestrian Plans and the Bergen County Parks Draft Master Plan were all reviewed for any possible project that would need to be examined for potential cumulative impacts. The proposed BRT route does pass nearby the Proposed Action Alternative and uses State Route 17 for about two miles through Paramus but the stretch of State Route 17 is one-mile south of the areas of reportable noise. Thus, there are no anticipated cumulative impacts from foreseeable major roadway and transportation projects.

Given the areas of reportable noise in Ho-Ho-Kus, Paramus, Ridgewood, and Washington Township, the master plans and planning documents from these four municipalities were consulted to look for any projects or plans that would need to be examined for potential cumulative impacts. The Washington Township Master Plan and the Paramus Master Plan were investigated as they listed multiple potential sites to be acquired for recreation, which if acquired could have become equivalent to a Section 4(f) property in the areas of reportable noise. However, all of these potential Section 4(f) sites were found to be outside the areas of reportable noise.

Another aspect of this evaluation of cumulative impacts is considering whether there could be a significant environmental impact when the Proposed Action Alternative is considered with other past, present, and reasonably foreseeable projects. The Proposed Action Alternative does not create any reportable decreases in noise exposure, however, it does result in fewer residents living inside the DNL 60 and no change in residents in the DNL 65 or 70. This indicates that the

Proposed Action Alternative does not adversely affect noise impacts on incompatible land uses. For the populations exposed to noise levels below DNL 60, this is considerably below the DNL 65, which is the significant noise threshold for noise and noise compatible land use according to FAA Order 1050.1F.[12] No projects were identified that could conceivably contribute to the noise levels below DNL 60 plus cumulative impacts and create a significant noise impact.

As a result, it can be concluded that the Proposed Action Alternative would not create a cumulative impact that would reach the significant threshold when environmental consequences are considered cumulatively with the consequences of past, present, and reasonably foreseeable projects.

VII. Public Involvement

On November 15, 2019, FAA issued a letter announcing the preparation of the Draft EA, which was shared with key stakeholders and the public via the project website, and contained general details about the forthcoming Public Information Workshop. This letter also contained information about how to submit comments on the Draft EA, either by letter or by email. On December 23, 2019, the Draft EA was published and a Notice of Availability was provided via Public Notice published in the Star-Ledger and Bergen Record. The Notice of Availability of the Draft EA was provided to the same key stakeholders as the letter of preparation of the Draft EA. The Draft EA was made available on the project website starting on December 23, 2019 and was also available at the following libraries:

- Lee Memorial Library, Allendale, NJ
- Paramus Public Library, Paramus, NJ
- Ramsey Free Public Library, Ramsey, NJ
- Rochelle Park Free Public Library, Rochelle Park, NJ
- Sidney Silverman Library, Paramus, NJ
- Township of Washington Public Library, Township of Washington, NJ
- Upper Saddle River Public Library, Upper Saddle River, NJ
- Worth-Pinkham Memorial Library, Ho-Ho-Kus, NJ

The public Notice of Availability included the project website address, instructions as to how to comment on the Proposed Action Alternative, information about the upcoming Public Information Workshop and the end date of the comment period. The FAA's website allowed interested members of the public the opportunity to review the Draft EA, provided information about the public comment period, and the Public Information Workshop.

A Public Information Workshop was held on Wednesday January 8, 2020 to present the Draft EA and to receive comments on the document from the public, key stakeholders, and government

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[12] Order 1050.1F, Exhibit 4-1, Page 4-8.
https://www.faa.gov/documentLibrary/media/Order/FAA_Order_1050_1F.pdf

agencies. The Public Information Workshop was held from 6:00 pm-8:00 pm at the Sheraton Mahwah Hotel in Mahwah, NJ. The format of the Public Information Workshop was informal and participants were able to view maps, display boards, and project information while speaking with representatives of the FAA and their consultants that prepared the Draft EA. The public was able to submit written comments during the Public Information Workshop. Comments may also be submitted prior to, or after, the Public Information Workshop via U.S. Mail or via email.

The comment period on the Draft EA began on December 23, 2019 and ended on January 22, 2020. Upon the conclusion of the comment period for the Draft EA, the FAA and its consultants compiled, categorized, and responded to all 117 comments, including those received at the Public Information Workshop, by email, and by U.S. Post mail. These comments were reviewed, and considered, in the preparation of this Final EA document.

VIII. Agency Findings

The FAA makes the following determinations for this project based upon a careful review of the Final Environmental Assessment, comments on the Draft EA, the supporting administrative record, and appropriate supporting information.

A. **The FAA has given the Proposed Action the independent and objective evaluation required by the National Environmental Policy Act of 1969 (NEPA) and the Council on Environmental Quality (40 CFR Section 1506.5)** FAA provided guidance to its consultant and participated in the preparation of all chapters of both the draft and final Environmental Assessment. FAA independently evaluated the final Environmental Assessment and takes responsibility for its scope and content.

B. **The Proposed Action does not result in a significant noise impact over noise sensitive areas or population census blocks**. There are no noise sensitive areas or census blocks within the General Study Area that are exposed to DNL 65 or higher that experience a 1.5 DNL increase. There are population census blocks that are exposed to DNL 45 or higher that experience a 5.0 DNL increase, which is a reportable noise impact. There are Section 4(f) and historical properties that experienced reportable noise increases but none of these properties had a quiet setting as a generally recognized attribute.

C. **The Proposed Action will not have a significant impact on Air Quality. Section 176(c) of the Clean Air Act requires that federal actions conform to the appropriate SIP to attain the air quality goals identified in the Clean Air Act.** A conformity determination is not required if the emissions caused by a federal action would be less than the *de minimis* levels established by regulations issued by EPA. The EPA regulation, 40 CFR 93.153 (b)(1)(2), specifies an emission level or *de minimis* level for each NAAQS pollutant and non-attainment area at which the emissions associated with the action are unlikely to contribute to a violation of the NAAQS or delay timely attainment of the NAAQS. The adoption of approach

procedures above the mixing height is on a list of actions "presumed to conform" as are the adoption of approach procedures below the mixing height but only provided that the modifications are designed to enhance operational efficiency, increase fuel efficiency, or reduce community noise by means of engine thrust reductions. The full list of actions "presumed to conform" under General Conformity can be found in 72 Fed.Reg. 41565, July 30, 2007. These conditions below the mixing height were not met so the emissions below the mixing height were calculated to identify any *de minimis* exceedances. The Proposed Action will not cause exceedances of the *de minimis* thresholds applicable to the GSA for any pollutant and as such a conformity determination is not required.

D. **The Proposed Action does not include a direct or constructive use of any resources protected under Department of Transportation Act Section 303(c), also known as Section 4(f).** The Project does not involve any physical development or modification of facilities, and therefore no actual, physical use of resources protected under Section 4(f) of the Department of Transportation Act. This includes national, state, and local parks as well as state forests, state historic sites, and state & local refuges. There were Section 4(f) properties within the General Study Area that experienced reportable noise increases but none of these properties had a quiet setting as a generally recognized purpose and attribute, such as a national park or national wildlife refuge.

E. **The Proposed Action will not adversely affect historic resources protected under Section 106 of the National Historic Preservation Act that are listed on the National Register of Historic Places or are eligible for listing.** The Proposed Action will not cause an adverse effect on historic resources listed on or eligible for listing on the National Register of Historic Places. There are four historic properties within the designated Area of Potential Effects that experienced reportable noise increases but a review of these four properties found that none of them contained attributes where a quiet setting as used as criteria for designation. This determination was made in consultation with the New Jersey Historic Preservation Office and the New Jersey Historic Preservation Office concurred with this finding in a letter received on May 22, 2020.

After careful and thorough consideration of the Final EA and the facts contained herein, I find that the Proposed Action is consistent with existing national environmental policies and objectives as set forth in Section 101 of National Environmental Policy Act and other applicable environmental requirements and will not significantly affect the quality of human environment or otherwise include any condition requiring consultation pursuant to Section 102(2)(C) of National Environmental Policy Act. Therefore, an environmental impact statement will not be prepared.

I, the undersigned, have reviewed the Final EA and all associated appendices and supporting materials, including the evaluation of the purpose and need that this Project would serve the alternative means of achieving the purpose and need, and the environmental impacts associated with these alternatives. I find that the Proposed Action described in the Final EA is reasonably supported, and issuance of this FONSI/ROD is appropriate.

I have carefully considered the FAA's statutory mandate under 49 U.S.C. § 40103 to ensure the safe and efficient use of the national airspace system as well as the other aeronautical goals and objectives discussed in the Final EA.

Accordingly, under the authority delegated to me by the Administrator of the FAA, I approve and the operational changes as described in the Proposed Action and direct that actions be taken that will enable implementation of that alternative.

Natasha A. Durkins

Natasha A. Durkins
Director, Eastern Service Center
Mission Support Services
Federal Aviation Administration

September 10, 2020
Date

RIGHT OF APPEAL

This FONSI/ROD constitutes a final order of the FAA Administrator and is subject to exclusive judicial review under 49 U.S.C. Section 46110 by the U.S. Circuit Court of Appeals for the District of Columbia or the U.S. Circuit Court of Appeals for the circuit in which the person contesting the decision resides or has its principal place of business. Any party having substantial interest in this order may apply for review of the decision by filing a petition for review in the appropriate U.S. Court of Appeals no later than 60 days after the order is issued in accordance with the provisions of 49 U.S.C. Section 46110. Any party seeking to stay implementation of the ROD must file an application with the FAA prior to seeking judicial relief as provided in Rule 18(a) of the Federal Rules of Appellate Procedure.