

Record of Decision

**New York/New Jersey/Philadelphia
Metropolitan Area Airspace Redesign**



September 5, 2007

U.S. Department of Transportation
Federal Aviation Administration

ERRATA

The following errors were identified in the Final Environmental Impact Statement (FEIS) following printing and distribution of the document.

1. FEIS ES-1, footnote 1 provides an incorrect reference to NEPA. The correct cite is 42 U.S.C. §4321 et. seq.
2. FEIS 2-1 references the relevant CEQ regulation as 40 CFR 1502.1(c). The text should be revised to reference 40 CFR 1502.14(c).
3. FEIS 3-1, footnote 1 references June 8, 2004 version of FAA Order 1050.1E. Correct reference is FAA Order 1050.1E Change 1 (March 20, 2006).
4. FEIS at 5-136 incorrectly references the cumulative impact discussion as Section 4.17 of the FEIS. The cumulative impact discussion is set forth in the FEIS at Section 4.18.
5. FEIS Chapter 7 (List of Acronyms, Abbreviations and Glossary of Terms in this EIS) inadvertently omits “ADD Average Annual Day” and “ADT Airspace Design Tool.” These abbreviations and their meanings should be added into the list.

Table of Contents

I.	Introduction	1
II.	Background	2
III.	Purpose & Need	6
IV.	Alternatives Analysis	10
V.	Preferred and Environmentally Preferred Alternatives	21
VI.	Environmental Impacts & Mitigation	22
VII.	Public and Agency Involvement	47
VIII.	Comments on the FEIS	48
	United Parcel Service, Mr. Tim Stull, Manager Air Traffic Systems	
	Mr. Michael Kroposki, Esq-Ridgeland, CT	
	New Jersey Coalition Against Aircraft Noise (NJCAAN)	
	Rockland County	
	Representative Eliot L. Engel	
IX.	Agency Findings	53
X.	Decision and Order	57

Appendices

Appendix A: Figures

- Figure 2.1 Future No Action Airspace Alternative – JFK Major Departure Flows
- Figure 2.2 Future No Action Airspace Alternative – JFK Major Arrival Flows
- Figure 2.3 Future No Action Airspace Alternative – LGA Major Departure Flows
- Figure 2.4 Future No Action Airspace Alternative – LGA Major Arrival Flows
- Figure 2.5 Future No Action Airspace Alternative – EWR Major Departure Flows
- Figure 2.6 Future No Action Airspace Alternative – EWR Major Arrival Flows
- Figure 2.7 Future No Action Airspace Alternative – TED Major Departure Flows
- Figure 2.8 Future No Action Airspace Alternative – TEB Major Arrival Flows
- Figure 2.9 Future No Action Airspace Alternative – PHL Major Departure Flows
- Figure 2.10 Future No Action Airspace Alternative – PHL Major Arrival Flows
- Figure 2.24 Integrated Airspace Alternative Variation with ICC- JFK Major Departure Flows
- Figure 2.25 Integrated Airspace Alternative Variation with ICC – JFK Major Arrival Flows
- Figure 2.26 Integrated Airspace Alternative Variation with ICC – LGA Major Departure Flows
- Figure 2.27 Integrated Airspace Alternative Variation with ICC – LGA Major Arrival Flows
- Figure 2.28 Integrated Airspace Alternative Variation with ICC – EWR Major Departure Flows
- Figure 2.29 Integrated Airspace Alternative Variation with ICC – EWR Major Arrival Flows
- Figure 2.30 Integrated Airspace Alternative Variation with ICC – TED Major Departure Flows
- Figure 2.31 Integrated Airspace Alternative Variation with ICC – TEB Major Arrival Flows
- Figure 2.32 Integrated Airspace Alternative Variation with ICC – PHL Major Departure Flows
- Figure 2.33 Integrated Airspace Alternative Variation with ICC – PHL Major Arrival Flows

Appendix B: Section 4(f) Analysis

Appendix C: Agency Coordination

The following appendix includes correspondence between the FAA and various federal or state agencies.

1. January 24, 2007 Letter from Fish and Wildlife Service to FAA (sensitive information redacted)
2. August 27, 2007 Letter from FAA to Fish and Wildlife Service
3. August 28, 2007 Email from FAA to National Park Service
4. August 28, 2007 Email from FAA to New York State Department of Environmental Conservation
5. August 31, 2007 Letter from EPA to FAA
6. September 5, 2007 Email from Pennsylvania SHPO to FAA
7. September 5, 2007 Letter from FAA to FWS

Appendix D: Comment Letters on the FEIS

United Parcel Service, Mr. Tim Stull, Manager Air Traffic Systems
Mr. Michael Kroposki, Esq-Ridgeland, CT
NJCAAN
Rockland County
Congressman Eliot L. Engel, dated 8/31/07
Rockland County

I. Introduction

This Record of Decision (ROD) represents the culmination of over nine years of study and evaluation by the FAA to address congestion and delays at some of our nation's busiest airports. This document sets forth the agency's final decision to approve the project to redesign the airspace in the New York/New Jersey/Philadelphia (NY/NJ/PHL) Metropolitan Area. This Airspace Redesign Project is critical to enhance the efficiency and reliability of the airspace structure and the Air Traffic Control (ATC) system for pilots, airlines, and the traveling public. It is needed to accommodate growth while enhancing safety and reducing delays in the NY/NJ/PHL Metropolitan Area. Most importantly, the Airspace Redesign Project modernizes the structure of the NY NJ PHL air traffic environment in an environmentally responsible manner, and lays a foundation for achieving the Next Generation Air Transportation System in 2025. By 2011 this project is predicted to reduce the number of people exposed to noise above 45 dB DNL noise levels by 619,000 people, reduce fuel burn and emissions by the airlines by 20%.

This ROD is based upon an Environmental Impact Statement (EIS) prepared in accordance with the National Environmental Policy Act (NEPA) of 1969, as implemented by Council on Environmental Quality (CEQ) regulations, 40 C.F.R. 1500 *et seq.*, and FAA Order 1050.1E Change 1, Policies and Procedures for Considering Environmental Impacts. In this document, the FAA discusses the reasons it decided to undertake the Airspace Redesign project, the alternatives it considered in accomplishing its objectives, and the environmental impacts including mitigation of the alternatives it considered. This ROD includes additional information about steps taken to assure compliance with Department of Transportation Section 4(f), Section 106 of the National Historic Preservation Act, and Section 7 of the Endangered Species Act. Finally, the ROD contains a discussion of the selected project and the reasons for its selection.

After a careful consideration of all the available information, the FAA has decided to select the mitigated Preferred Alternative, known as the Integrated Airspace Alternative with Integrated Control Complex (ICC). The selected project consolidates many sectors of airspace under one Air Route Traffic Control Center (Center) and represents an innovative approach to airspace design in the NY/NJ/PHL area. The ICC uses of the 3 nautical mile separation criteria for flights in terminal airspace rather than the standard 5 mile criteria for en route airspace over a larger geographic area and up to 23,000 feet above mean sea level in some areas. The airspace will incorporate the sectors of airspace currently handled by the NY Terminal Radar Approach Control facility (TRACON) and the NY Center as well as some handled by the Washington and Boston Centers.

In addition to reconfiguring the airspace to implement the selected project the FAA will take several other direct actions to take advantage of improved aircraft performance and emerging air traffic control (ATC) technology. As part of the selected project the FAA will design new and modified ATC procedures, modify multiple departure gates and add arrival posts, and departure headings. Mitigation measures include use of fewer dispersal headings at times of lower volume, use of continuous descent approaches, and raising arrival altitudes.

The selected project will require installation of additional equipment in FAA facilities to provide a common automation platform and communications network. However, it does not require any external physical changes to existing facilities, construction of new facilities, or local or state actions. Although the nomenclature “Integrated Airspace Alternative with Integrated Control Complex (ICC)” might suggest otherwise, the shared platform needed for the ICC can be established within existing facilities. The proposed replacement of the NY TRACON building would facilitate implementation of the ICC, however the TRACON replacement project has independent utility. Approval of the Airspace Redesign project does not depend upon replacement of the TRACON. Therefore, the selected project requires no physical alteration to any environmental resource or permits/licenses. Additionally, the Airspace Redesign does not require changes to any Airport Layout Plan.

II. Background

We know from experience and from economic studies how vital Newark Liberty, La Guardia, Kennedy and Philadelphia Airports are to the region. Domestic air carriers have built thriving international hubs at three of these airports, connecting their international services to a network of domestic routes that allows service to even more international locations. Foreign air carriers provide non-stop service to destinations as close as Toronto, and as far away as Singapore. Activity by low-cost carriers continues to grow at these airports, and the traveling public in the area continue to have an unparalleled choice of non-stop service to cities around the world. As this aviation growth so essential to the region was happening, we made the airplanes quieter, and minimized their impact upon people living below, but we did not make more efficient use of the sky above. It is the FAA’s judgment that the continued health of the aviation industry is dependent upon the modernization actions contained in the preferred alternative as mitigated, that will bring 21st century efficiencies to this vital component of the region’s economy.

It is often said that the airspace in the New York/New Jersey/Philadelphia area is some of the most complex anywhere in the world. Throughout the EIS and in other parts of the administrative record, there are many charts and diagrams using the latest graphic technology to depict flight paths, arrival fixes, departure gates and the whole panoply of air traffic concerns in the region. Even these visual images, though more effective than words, fail to depict fully the complexity and interdependences that these different procedures have on each other. One way to grasp the complexity of the problem and the delicacy of the limited options available as potential solutions is to observe, on a delayed but real time basis, the radar tracks of aircraft landing and departing at Newark Liberty, La Guardia, Kennedy, and Philadelphia, over the internet. For the New York/New Jersey area, the best platform is www4.passur.com/lga.html set to a 40 mile range, and for Philadelphia, the helpful website is www4.passur.com/phl.html. Observers can see, for example, how only a few miles separates the streams of arrivals at Newark and La Guardia, how southbound La Guardia departures are “climbed over” Newark Arrivals, and how the approach path to La Guardia can depend in part on runway use at Kennedy. Throughout all of this, the FAA’s primary goal is one of safety, which is why there are so many delays using today’s air navigation system in this airspace.

The basic air traffic environment for the New York/New Jersey/Philadelphia (NY/NJ/PHL) Metropolitan Area airspace was designed and implemented in the 1960s. While FAA made some adjustments to that airspace in the mid-1980's, as part of the Expanded East Coast Plan, the basic structure of the NY/NJ/PHL airspace has remained largely the same since the 1960s. In contrast, the use of the airspace and the Air Traffic Control system has changed significantly. The volume of air traffic has increased significantly since the 1960s, as has the use of smaller and regional jet aircraft in the ATC system. Additionally, the NY/NJ/PHL airspace has seen radical growth at airports that once had lower volume, such as Newark Liberty International Airport. The basic structure of the NY/NJ/PHL airspace, however, has essentially remained the same and has not been adequately modified to address changes in the aviation industry, including increasing traffic levels and use of new types of aircraft. Therefore, the NY/NJ/PHL Airspace Redesign is needed to accommodate growth while maintaining safety and mitigating delays, and to accommodate changes in aircraft fleet mix using the system (e.g., increased use of smaller and regional jet aircraft). The purpose of the Airspace Redesign is to increase the efficiency and reliability of the airspace structure and ATC system to accommodate growth while enhancing safety and reducing delays in air travel.

As the agency responsible for managing the National Airspace System (NAS), the FAA continuously seeks ways to control air traffic more efficiently. In 1998, the FAA Administrator chartered the National Airspace Redesign as the primary means of modernizing the nation's airspace. The National Airspace Redesign was to take advantage of opportunities arising from new technologies, new aircraft equipage, improved infrastructure, and procedural developments to enhance safety and efficiency. From the beginning, the importance of the New York/New Jersey Philadelphia area was recognized. This airspace formed the northeast corner of the "Eastern Triangle" where the first redesign efforts were focused.

The current delay performance of the airspace around the New York/New Jersey and Philadelphia Metropolitan Areas illustrates the need for redesign. The Bureau of Transportation Statistics collects information on major airport on-time arrival performance. For the first quarter of 2007, out of their list of 32 major airports¹,

- Newark was the top-delayed, with 55% on time performance;
- LaGuardia was second from the top, 58% on time performance;
- JFK was fourth from the top, 60% on time performance;
- Philadelphia was fifth from the top, 65% on time performance.

The only airport in the top five as of the first quarter of 2007 that is not in this study area is Chicago-O'Hare International Airport. Airports in the NY/NJ/PHL Metropolitan Area are routinely among the top 10 most delayed airports in the nation. Of all the factors in the system that can cause delays, these airports have only one in common. Some are dominated by one or two carriers and others are not. Some have many foreign airlines,

1

http://www.bts.gov/programs/airline_information/airline_ontime_tables/2007_03/html/table_04.html

others have few. Some support hub-and-spoke operations and others do not. Some have very large aircraft, others have mostly smaller aircraft. Some are large, with long taxiways, others are small and cramped. At some, the traffic has grown substantially in recent years, at others it has not. The thing these airports have in common is the airspace used by their arrivals and departures. To solve the delay problem, the airspace must be addressed.

The Study Area for the project consists of the geographic area in which natural resources and the human environment are potentially affected by the proposed action, reasonable alternatives, and proposed mitigation. The Study Area was defined to include the areas underlying proposed changes to aircraft routes below 14,000 feet above mean sea level (MSL). According to FAA Order 1050.1E, the altitude ceiling for noise environmental considerations regarding airspace studies is 10,000 feet above ground level (AGL). The point at the highest altitude of the area where proposed airspace changes would occur was Hunter Mountain, New York at 4,000 feet above MSL. As a result, the overall altitude ceiling of the Study Area was 14,000 above MSL (resulting in 10,000 feet AGL). The Study Area includes the entire state of New Jersey, and portions of Connecticut, Delaware, New York, and Pennsylvania, an area of approximately 31,180 square miles. Section 3.1.1 of the Final EIS contains a more specific description of the Study Area.

The Study Area contains numerous public and privately owned airports. It would have been extremely difficult and unwieldy to include all of the airports in the Study Area in the analysis. The airspace design planning and environmental review process focused heavily upon the eight airports that were likely to be most affected by proposed airspace changes. These are: LaGuardia Airport (LGA), John F. Kennedy International Airport (JFK), Newark Liberty International Airport (EWR), Teterboro Airport (TEB), Philadelphia International Airport (PHL), Morristown Municipal Airport (MMU), Islip Long Island MacArthur Airport (ISP) and White Plains/Westchester County Airport (HPN). Airports that had more than 20 Instrument Flight Rule (IFR) operations on an average day were also included in the focused analysis. Airports with fewer than 20 IFR average annual day operations would have little impact on design elements or noise impacts in the study area. The thirteen additional airports that were included in the focused analysis are:

- Allentown/Lehigh Valley International (ABE)
- Atlantic City International (ACY)
- Bridgeport/Igor I. Sikorsky Memorial (BDR)
- Caldwell/Essex County (CDW)
- Westhampton Beach/The Francis S. Gabreski (FOK)
- Linden (LDJ)
- Newburgh/Stewart International (SWF)
- New Haven/Tweed-New Haven (HVN)
- Northeast Philadelphia (PNE)
- Republic (FRG)
- Trenton/Mercer County (TTN)
- Wilmington/New Castle County (ILG)

- McGuire Air Force Base (WRI)

To plan airspace redesign, the FAA undertook an extensive study. Technical specialists with in-depth knowledge of regional ATC issues evaluated the existing airspace structure, ATC procedures and routes, and the interaction of local air traffic with the NAS as a whole. The result of this team's effort is set forth in the EIS and supporting documentation in the administrative record.

Implementation of the Selected Project

This redesign project is very large and complex. We will begin implementation as soon as practicable. Implementation of the selected project is estimated to take five years. The implementation of the selected project contains several qualitatively different stages.

The first stage involves elements of the selected project that do not require large-scale changes to other parts of the system. These items may be implemented without changes to the current airspace structures or operations of neighboring facilities.

- Right turns for departures off Runway 31R at JFK
- Departure dispersal headings at EWR, PHL and LGA
- RNAV overlay procedures for TEB departures and approaches
- RNAV overlay for PHL river visual approach
- Develop an additional parallel airway to Jet Route 80
- A third westbound departure fix for PHL
- RNAV overlay for LGA Localizer Type Directional Aid (LDA) approach to Runway 22
- RNAV fix on the VOR 13L/R and 13L/R visual approaches to JFK

The next stage of implementation entails the integration of the terminal and en route airspace. At some point in this phase, we will address the NY TRACON and NY Center facility airspace structure will be addressed. This phase also concerns no change to the current airspace structures or operations of neighboring facilities. Aspects of the second phase include:

- Expanding the use of terminal separation rules
- Expanding the west gate for NY departures
- Opening the west gate for JFK departures
- Allowing stacked departures at the departure fixes
- Providing flexible use of the arrival airways
- Establishing a new arrival route into PHL

The next stage requires changes at other facilities, such as resectorization or shifting boundaries, but no changes to the current operational structure.

- Adding a third airway to the north gate

The remaining stage of implementation requires changes at facilities. This may include transfer of sectors as well as operational changes for the neighboring facilities. Aspects of the final stage of implementation include:

- Creating a new jet airway for departures to the west
- Enabling dependent instrument arrivals to the parallel runways at EWR and the required shift of the arrival streams into the NY/NJ area
- Creating a south gate for departures out of the NY/NJ area

III. Purpose and Need

The FAA's first consideration and highest priority in defining the Purpose and Need for any proposed action is to serve the public interest by exercising its authority to assign, maintain, and enhance safety and security of the national airspace (49 U.S.C. §40101(d)). The FAA also has the statutory responsibility to manage the use of navigable airspace to assure safety and efficiency. (49 U.S.C. §40103).

A. Need for the Project

As noted, congestion and delays at airports in the NY/NJ/PHL Metropolitan Area are some of the worst in the country and aircraft operations are forecast to continue to grow. In considering the need for an Airspace Redesign project, the FAA looked at the increase in traffic levels, safety, delays, and changes in the types of aircraft using the NAS.

1. Increased Aircraft Traffic Levels

Aircraft operations in the Study Area are growing despite the operational delays experienced by aircraft operators. Instrument operations² at most of the major airports in the Study Area have increased. See FEIS, Table 1-3. Dramatic increases have occurred at Newark (EWR), Philadelphia (PHL), and Teterboro (TEB) and these increases are forecast to continue. Current traffic at JFK has increased 44% from the year of 2004.³ Inefficiencies due to the inherent limitations of the existing airspace design, including route structure and ATC procedures, will be exacerbated by growth in air traffic operations. For example, in 2006 the NY TRACON handled 2,090,977 operations and is expected to handle 2,400,143 operations by 2011. FEIS at 1-23. As traffic increases, the system will become increasingly inefficient and unreliable (unpredictable in terms of scheduling) in order to ensure safe operations. The following inefficiencies must be addressed in order to accommodate growth that will occur with or without the project:

² Commercial operators and operators of certain large aircraft, e.g., business jet aircraft, are required to operate under Instrument Flight Rules. Additionally, many aircraft that are not required to operate under IFR choose to do so because of the air traffic services it provides.

³ FAA OPSNET Data

- Access to en route airways is restricted by downstream congestion.
- EWR and LGA final approach courses are restricted and do not allow for optimal aircraft sequencing to the runways.
- Airspace sectors are currently associated with specific airports which cause an unbalanced use of the airspace, thus requiring excessive communications between controllers.
- Westbound departures from JFK create delays for westbound departures from EWR and LGA due to in-trail sequences.
- NY Metropolitan Area departures to north departure gate fixes are restricted due to inefficient airspace allocation.
- Arrivals to PHL are directed to lower altitudes to maintain separation from arrivals to the NY Metropolitan Area.

The airspace must accommodate growth in air traffic. To accommodate growth, the enhanced airspace system must maintain the current high level of safety and mitigate delays.

2. Safety

As noted above, the FAA has the statutory responsibility to control the use of navigable airspace in the interest of safety and efficiency. The following safety-related inefficiencies currently exist in the NY/NJ/PHL Metropolitan Area airspace:

- Arrivals to Westchester County Airport (HPN) from the south cross several traffic flows and create unnecessary complexity.
- Arrivals for airports to the north of the Study Area must be assigned high altitudes to avoid conflicts with the NY Metropolitan Area traffic. This creates the need to cross several traffic flows in a short distance while descending.
- Traffic to PHL, Islip (ISP), and their associated satellite airports⁴ is restricted to intersecting courses in narrow corridors of airspace.
- Airspace restrictions require incremental changes in altitude for arrivals and departures causing radio frequency congestion associated with additional control instructions.

⁴ PHL satellite airports include Chester County, Brandywine, New Garden, Wings Field, Northeast Philadelphia, Doylestown, Pottstown Limerick, and Capital City Airports. ISP Satellite airports include Brookhaven, Spadaro, Francis S. Gabreski, Republic, and Montauk Airports. Source: NPIAS 2005-2009.

- Departures from EWR to the Caribbean and South America must climb through PHL and Atlantic City (ACY) traffic resulting in traffic conflicts.
- High-performance general aviation aircraft operating out of satellite airports are restricted to less efficient altitudes below major airport flows. This creates increased controller workload to resolve traffic conflicts.
- Departures from ISP and ISP satellite airports to the south/southwest conflict with arrivals to the NY Metropolitan Area and northeast-bound departures from PHL.

Addressing the safety-related inefficiencies will contribute to enhanced safety in light of the growing traffic.

3. Delays

Delays affect aircraft operators with increased fuel use and operating costs, which are passed on to consumers in the form of higher ticket prices. Delays also impact the public by causing inconveniences with late arrivals, missed connections, and cancelled flights. The public expects a stable and reliable aviation system that supports on-time flights. People have dramatically increased their use of aviation as a mode of travel and increasing delays continue to receive much public attention. Delays are expected to increase in the future as traffic levels continue to grow. These issues prompted the airline industry and the Federal government to search for ways to reduce delays.

The current basic airspace structure was designed and implemented in the 1960s, based on the interaction of independent TRACONS and several overlying Centers.⁵ Today, the airspace system cannot efficiently handle the current and projected levels of traffic within the NY/NJ/PHL Metropolitan Area. In 1988, when the last large-scale airspace changes were made, the New York TRACON alone managed approximately 1,710,000 operations annually. In 2006, the New York TRACON handled 2,090,977 operations. By the year 2011, the traffic level is projected to increase to 2,400,143⁶ annual operations. The increasing traffic levels result in excessive user delays and inefficient routes. Between 2000 and 2006, total aircraft delays at TRACONS and Centers in the Study Area have increased dramatically. In addition, airports in the NY/NJ/PHL Metropolitan Area are routinely among the top 10 most delayed airports in the nation, due in part to the inefficiencies of the current airspace structure.

The following are among the causes for delay in the existing NY/NJ/PHL Metropolitan Area airspace:

- Aircraft departing from the NY Metropolitan Area to the Washington Metropolitan Area are sequenced onto the same routes as long-haul destinations (e.g., Los Angeles).

⁵ See FEIS sections 1.2.1 – 1.2.3 for a discussion of the NAS and a description of the types of ATC facilities.

⁶ FAA APO Terminal Area Forecast Issued December 2006.

- Entering and exiting holding patterns in en route airspace are inefficient because more restrictive en route separation rules are used and require extensive coordination.
- Chicago O'Hare International Airport (ORD) is one of the busiest airports in the nation and experiences significant delays. Because of the inflexibility of the current airspace structure, the in-trail restrictions placed on the ORD departures end up affecting all of the westbound departures from the New York/New Jersey/Philadelphia metropolitan areas routed over the same departure fix regardless of the destination airport.
- Aircraft departing from LGA and HPN have poor access to departure routes during severe weather conditions.
- Severe weather that occurs during periods of heavy traffic reduces flexibility for aircraft rerouting resulting in delays.
- During peak demand periods individual arrival fixes can become saturated while other arrival fixes are under used.

The Airspace Redesign is needed to address the system inefficiencies that cause delay.

4. Changes in Type of Aircraft

The mix of types of aircraft used by domestic air carrier and general aviation operators has changed rapidly over the past decade. Regional airlines have replaced propeller-driven aircraft with regional jets in response to consumer preferences and to begin service to new markets. Mainline air carriers have transitioned service on some routes from larger narrowbody aircraft to smaller regional jets because of the lower operating costs for regional jets. The net effect of these changes is that the same numbers of passengers are being transported with a higher number of operations by smaller aircraft. Additionally, there has been an increase in the use of private jets. The convenience of business jets, e.g., avoiding security delays and freedom to set one's own flight schedule, has encouraged many corporate travelers to increase their use of business jets. Fractional ownership programs have put the ability to use business jets into the hands of many more people. These factors have placed new strains on the NAS by increasing the number of high performance jets vying for the same routes and altitudes. Previously there were substantial numbers of propeller-driven aircraft operating at lower altitudes on separate routes. This increasing number of jets has resulted in a saturation of jet routes.

B. Purpose of the Project

The purpose of Airspace Redesign is to increase the efficiency and reliability of the airspace structure and ATC system, thereby accommodating growth while enhancing safety and reducing delays in air travel. By taking advantage of new technologies and responding to new trends, the Airspace Redesign will increase efficiency and the reliability of the air traffic system.

A nationwide study conducted by Logistics Management Institute (LMI) in 1999 found that air traffic congestion nationwide could cost 46 billion dollars to the nation's economy in 2010 because of increased travel time. The nationwide change in travel time that was anticipated for 2010, converted to its equivalent in terms of the metrics used for this study, is approximately 3 minutes per flight. This includes costs to airlines, loss of service to people who wish to travel, and over 200,000 lost jobs in aviation and other industries. The NY/NJ/PHL airspace will handle 15-20% of all the air traffic in the nation in 2011. This airspace redesign is concerned with removing inefficiencies. Enhancing efficiencies would, conservatively estimated, yield benefits to airlines, passengers, and businesses of \$7 billion to \$9 billion in 2011.

Air traffic delays also increase costs associated with providing air traffic control services. Additional air traffic control staffing is needed during periods when there are air traffic delays. Analyzing FAA's delay summary report over the past two years for JFK, LGA, EWR and PHL, it is estimated that delays at these four airports alone cost \$30.5 million.

The Airspace Redesign is also needed to accommodate changes in the fleet mix using the system (e.g., increasing numbers of smaller and regional jet aircraft). These needs are tied to the fundamental purpose of the Airspace Redesign: to increase the efficiency and reliability of the airspace structure and ATC system in the study area.

Noise reduction is not a Purpose and Need for Airspace Redesign. In the case of the national airspace redesign (NAR), reduction of noise is not appropriately identified as a Purpose. Airspace redesign can not remedy noise problems for the 29 million people living in the study area. In fact, for many people within 10 to 15 miles of the airport, depending on where they live in relation to the runway alignments, there may be little or no mitigation possible and no noise benefits possible. Additionally, in heavily populated areas, such as those surrounding Philadelphia, Newark, LaGuardia, and Kennedy Airports, mitigation of noise in one neighborhood usually means moving the noise to another neighborhood, not moving it to an unpopulated area. Moreover, it is unclear how noise reduction should be defined where noise is predicted to increase and decrease over large populated areas experiencing different noise levels. Although reduction of noise is not included in the Purpose and Need, the FAA recognizes that aircraft noise was the major issue raised in agency and public comments throughout the EIS process. During the scoping meetings held in 1999 and 2001, the FAA committed to using the various techniques to reduce aircraft noise and other potential environmental impacts. These techniques included increasing altitudes, dispersing or concentrating tracks where appropriate, reducing flying time, and routing aircraft over less noise-sensitive areas where feasible.

IV. Alternatives Analysis

CEQ regulations require the FAA to "rigorously explore and objectively evaluate all reasonable alternatives, and for alternatives which were eliminated from detailed study, briefly discuss the reasons for their having been eliminated." 40 C.F.R. §1502.14(a). In addition to a No Action alternative, as required by the CEQ regulations, 40 C.F.R.

§1502.14(d), the FAA developed five categories of alternatives and evaluated them against the purpose and need for the project. Those categories of alternatives that did not satisfy the purpose and need for the project were not considered reasonable alternatives and were eliminated from detailed analysis. The categories of alternatives considered in the initial screening of alternatives in the EIS included the following:

- Alternative Modes of Transportation and Telecommunication—Using alternative modes of transportation and communication including travel by rail, bus, and automobile, as well as the use of telecommunication methods such as videoconferencing.
- Changes in Airport Use—Moving operations to satellite airports or improving infrastructure of existing airports.
- Congestion Management Programs—Regulating air travel demand by limiting flight operations. Three major congestion management techniques are administrative approaches, voluntary de-peaking, and market based-approaches.
- Improved Air Traffic Control Technology—Using newly developed air traffic control technologies.
- Airspace Redesign Alternatives—Creating restructured airspace routes, altitudes, and sectors.

A. Alternative Categories Eliminated from Detailed Study

In determining the reasonable alternatives for the project, the FAA looked at the categories of alternatives to determine whether each would meet the purpose and need for the Airspace Redesign project. Those categories of alternatives that did not meet the purpose and need for the project were eliminated from detailed study in the EIS. Four of the categories of alternatives, Alternative Modes of Transportation and Technology, Changes in Airport Use, Congestion Management Programs, and Improved Air Traffic Control Technology, were eliminated because they did not meet the purpose and need of the Airspace Redesign project. While the Alternative Modes of Transportation and Technology (Section 2.3.1), Changes in Airport Use (Section 2.3.2), Congestion Management Programs (2.3.3), and Improved ATC Technology (2.3.4) categories of alternatives may have had the potential to decrease delays they would not have addressed the inefficiencies in the current NY/NJ/PHL Airspace. Because these alternatives did not meet the purpose and need for the Airspace Redesign project, they were not considered reasonable alternatives and were not carried forward for detailed environmental analysis.

B. Alternative Concepts Considered for Detailed Analysis

Of the five categories of alternatives, one, Airspace Redesign, was found to meet the purpose and need for the Airspace Redesign project, and was carried forward for detailed analysis in the EIS. Additionally, as required by the CEQ regulations, the No Action Alternative was carried forward for detailed study.

Airspace in the NY/NJ/PHL Metropolitan Area could be redesigned by changing or enhancing departure gates, arrival posts, routes, and/or the airspace boundaries of the various ATC facilities. For the Study Area under examination, new departure gates and arrival posts would permit the development of new routes in the airspace structure. Expanding the boundaries of the terminal airspace environment would permit less restrictive separation rules to be used in a larger volume of airspace. These actions have the potential to meet the need to accommodate growth in air traffic levels while maintaining safety and mitigating delays. New routes could add efficiency by reducing delays and providing more direct routings; this has the potential to achieve the purpose of increasing the efficiency and reliability of the airspace structure and ATC system.

The FAA began consideration of airspace and ATC changes by analyzing potential airspace redesign alternatives for the NY/NJ/PHL Metropolitan Area airspace. A working group was formed to design and evaluate conceptual airspace alternatives. The working group included representatives from the affected facilities: NY TRACON, Philadelphia TRACON, New York Center, Boston Center, and Washington Center. The working group also included representatives from ATC facilities outside the Study Area to ensure the alternatives developed would be compatible with airspace requirements in those facilities. Also as part of the development of redesign concepts, input from external sources such as airlines, airport operators and the public was solicited and considered.

The working group developed assumptions and objectives for airspace redesign alternatives. The assumptions included point-to-point navigation and use of terminal separation standards over a larger airspace area. The objectives that guided the development of airspace redesign concepts were:

- Reduce congestion in airspace sectors
- Shorten routes
- Segregate routes for aircraft with dissimilar operating characteristics (i.e., large aircraft from small aircraft)
- Impose fewer climb restrictions on departing aircraft and keep arrivals higher longer
- Allow aircraft to operate at higher, more fuel-efficient altitudes for longer periods
- Use area navigation (e.g., RNAV, GPS, etc.)
- Create a flexible airspace structure
- Accommodate projected growth
- Reduce environmental impacts, where possible

Using the assumptions and objectives, the working group developed broad concepts that met the design objectives: the Four Corner-Post, Modifications to Existing Routing, a Clean Sheet approach. Additionally, the working group considered an Ocean Routing concept submitted by New Jersey Citizens for Environmental Research (NJCER) at the request of the New Jersey Coalition Against Aircraft Noise (NJCAAN).

After further consideration, the working group determined that the Four Corner-Post was a concept ill-suited to the NY/NJ/PHL Metropolitan Area airspace (Section 2.4.1.1) and was eliminated from further consideration because it did not meet the purpose and need

of the airspace redesign project. The remaining three redesign concepts would meet the purpose and need and were studied in detail in the EIS.

Modifications to Existing Routing

This concept involves modifying the current route and procedures to improve efficiency in the current airspace.

Ocean Routing

This alternative routes all departing flights from EWR over the Raritan Bay to the Atlantic Ocean before turning them back over land to head to their departure gates. The Ocean Routing alternative does not meet the purpose and need for the airspace redesign project. It is designed to reduce noise impacts on the citizens of New Jersey, and would not increase the efficiency and reliability of the NY/NJ/PHL Metropolitan Area airspace. Because all EWR departures would use the same departure route, this alternative would inherently result in a large increase in airport departure delay. While Ocean Routing does not meet the purpose and need for the project, the FAA elected to retain it for detailed analysis because of the long-standing concerns of NJCAAN.

Clean Sheet Concept

The Clean Sheet approach began as an attempt to redesign the airspace in an atmosphere independent of existing routes. Designers were given a clean sheet of paper and were asked to design the most efficient airspace structure for the study area without reference to current procedures, departure gates, and arrival posts. It was initially explored as a concept that would be developed within the boundaries of the current NY Center and NY TRACON airspace. Any changes within this airspace would not require changes in adjacent Center's or TRACON's airspace. The working group discovered that the constraints of the NY Center's and NY TRACON's airspace boundaries did not facilitate the use of the clean sheet approach. This alternative, therefore, evolved into an integrated airspace concept that used some of the initial design elements of the Clean Sheet "Area Concept," and then added elements that more efficiently integrated the functions of the NY TRACON and NY Center to operate more seamlessly in either a standalone or consolidated manner. Therefore, a detailed airspace redesign alternative was developed based on the Integrated Airspace Concept.

C. Alternatives Analyzed in the EIS

After the working group validated the airspace redesign concepts, it developed detailed alternatives for the Modifications and Integrated concepts. The detailed alternative for Ocean Routing was developed by NJCER. The working group also developed criteria to evaluate the degree to which the alternatives met the purpose and need and to permit the comparison of the alternatives to each other. These criteria fall into two groups, operational viability and operational efficiency.

The operational viability criteria consider whether a particular airspace redesign is workable and thus, safe. The criteria include:

- Reduce airspace complexity

- Reduce voice communications

The operational efficiency criteria consider how well a particular design works. The criteria include:

- Reduce delay
- Balance controller workload
- Meet system demands
- Improve user access to the system
- Expedite arrivals and departures
- Increase flexibility in routing
- Maintain airport throughput

1. The Alternatives

No Action Alternative

The No Action alternative represents all major traffic flows into and out of the Study Area in the study years 2006 and 2011 if no changes are implemented as a result of the Airspace Redesign project. The only major difference between this alternative and present day operations will be the type and quantity of aircraft operations. Under the Future No Action Airspace Alternative, the airspace will operate as it did during existing or baseline conditions (2000), with the exception of two procedural changes (i.e., the Dual Modena and the Robbinsville-Yardley Flip-Flop) that have been implemented and have independent utility with regards to the Airspace Redesign, see Section 1.2.6. As these changes have been implemented, they are included as part of the Future No Action Airspace Alternative. Figures 2.1 through 2.10 in Appendix A to this ROD identify existing major routing and flow patterns associated with the Future No Action Airspace Alternative.

Modifications Alternative

The Modifications alternative includes minor modifications to the current airspace and routing, improving operations as much as possible within the limitations of the current ATC facility boundaries. Figures 2.11 through 2.14 in the Final EIS identify major routing changes associated with the Modifications alternative. The table below summarizes the Modifications alternative.

Table 2.1

Summary of Modifications to Existing Airspace Alternative

Airport	Changes from Future No Action
JFK	No Changes
LGA	South departure gate shifted to the northwest New departure headings for aircraft departing Runway 4 to the North departure gate New propeller aircraft procedures departing Runway 13 to West departure gate New departure headings for propeller aircraft departing Runway 13 to the South departure gate New distant procedures for aircraft departing Runways 4 and 13 to the South departure gate New departure headings for aircraft departing Runway 4 to the East departure gate
EWR	South departure gate shifted to the northwest New procedures for aircraft heading to new South departure gate New departure headings from all runways to all gates New departure headings off Runways 4L dependent on TEB Runway 6 New departure headings off Runways 22R dependent on TEB Runway 11
TEB	South departure gate shifted to the northwest New distant procedures for aircraft heading to shifted South departure gate
HPN	South departure gate shifted to the northwest New distant procedures for aircraft departing to the south gate
PHL	East departure gate shifted further east New procedures for aircraft heading to new East departure gate New departure headings for aircraft heading to the North, East, West, and South departure gates

Ocean Routing Alternative

The Ocean Routing alternative includes changes at EWR, LGA, and JFK and routes all EWR departing flights over the Raritan Bay to the Atlantic Ocean before turning them back over land to head to their departure gates. Figures 2.15 through 2.18 in the Final EIS identify major routing changes associated with the Ocean Routing alternative. The table below summarizes the Ocean Routing alternative.

Table 2.2
Summary of Ocean Routing Airspace Alternative

Airport	Changes from Future No Action
JFK	Shifted West departure gate New procedures for aircraft heading to the West departure gate Split of the FNA Ocean departure gate into the Ocean and South departure gates New procedures for aircraft heading to the South departure gate South arrival post shifted to the east New procedures for aircraft arriving from the South arrival post New procedures for aircraft arriving from the North arrival post
LGA	New procedures for aircraft heading to the North departure gate
EWR	Shifted West departure gate New procedures for aircraft heading to the West departure gate Shifted South departure gate New procedures for aircraft heading to the South departure gate New procedures for aircraft departing Runways 22L/R to the North departure gate New procedures for aircraft departing Runways 22L/R to the East departure gate
TEB	No Changes
PHL	No Changes

Integrated Airspace Alternative

The Integrated Airspace alternative combines the New York TRACON airspace with portions of the surrounding Centers' airspace, permitting more seamless operations. The Integrated Airspace Alternative can be accomplished either with existing standalone facilities or in a consolidated facility. The key component of the Integrated Airspace alternative is a common automation platform.⁷ Using existing facilities, airspace would be reallocated among the facilities in order to facilitate a more seamless operation. At the time the Airspace Redesign project was begun, the FAA had not yet decided to approve an Integrated Control Complex (ICC) concept.

As a result, the Integrated Airspace alternative was designed with two variations. The initial phase (2006) is the same for both variations because an ICC will not exist in 2006. It involves modifications to a departure gates as well as additional diverging departure headings, however, airspace facility boundaries would not change. In the second phase (2011) there are two variations:

- Without ICC, which will integrate the airspace to the extent possible without the common automation platform includes expanded use of terminal separation, reallocation of airspace sectors and new technologies.
- With ICC, which involves full airspace integration includes multiple departure gates, additional arrival posts, and additional diverging departure headings.

⁷ A common automation platform includes shared displays on screens, radar data processing and presentation, and communication.

Figures 2.19 through 2.22 in the Final EIS identify major routing changes associated with the Integrated Airspace alternative without ICC. The table below summarizes the Integrated Airspace alternative without ICC.

Table 2.3

Summary of Integrated Airspace Alternative Variation without ICC

Airport	Changes from Future No Action
JFK	No Changes
LGA	West departure gate extended to the north and to the south New procedures for aircraft heading to the West departure gate New departure headings for aircraft departing Runway 4 to the North departure gate New departure headings for aircraft departing Runway 4 to the East departure gate
EWR	New departure headings for all runways and all gates Procedures off Runway 4L dependent on TEB Runway 6 to West departure gates New procedures for aircraft heading to the West departure gate Procedures off Runway 4L dependent on TEB Runway 6 to North and East departure gates Procedures off Runway 22R dependent on EWR Runway 11 use Expanded West departure gate
TEB	West departure gate extended to the north and to the south New procedures for aircraft heading to the West departure gate New procedures for turboprop aircraft arriving from the northeast
HPN	West departure gate extended to the north and to the south New procedures for aircraft heading to the West departure gate New distant arrival procedures
PHL	New departure headings for aircraft heading to the North, East, West, and South departure gates

Figures 2.24 through 2.33 in Appendix A identify major routing changes associated with the Integrated Airspace alternative with ICC. The table below summarizes the Integrated Airspace alternative with ICC.

Table 2.4

Summary of Integrated Airspace Alternative Variation with ICC

Airport	Changes from Future No Action
JFK	North departure gate shifted 15 miles northeast New distant procedures for aircraft heading to the North departure gate West departure gate extended to the north and to the south New procedures for aircraft heading to the West departure gate Future No Action Ocean departure gate split into Ocean and South departure gates New distant procedures for aircraft heading to the Ocean departure gate New procedures for aircraft heading to the South departure gate North arrival post shifted five miles southeast New distant procedures for aircraft arriving from the North arrival post East arrival post shifted northwest New procedures for aircraft arriving from the East arrival post South arrival post shifted to the northeast New procedures for aircraft arriving from the South arrival post

Table 2.4

Summary of Integrated Airspace Alternative Variation with ICC

Airport	Changes from Future No Action
LGA	<p>East departure gate shifted east North departure gate shifted 15 miles northeast New procedures for aircraft heading to the North departure gate West departure gate extended to the north and to the south New procedures for aircraft heading to the West departure gate South departure gate shifted to the northwest New procedures for aircraft heading to the South departure gate North arrival post shifted 30 miles east New procedures for aircraft arriving from the North arrival post West arrival posts shifts to coincide with Future No Action South arrival post New procedures for aircraft arriving from the west to coincide with the South arrival post</p> <hr/> <p>West arrival flow split into two arrival flows, one to the north and one to the south New departure headings for aircraft departing Runway 4 to the North departure gate New departure headings for aircraft departing Runway 4 to the East departure gate</p>
EWR	<p>New departure headings for all runways and all gates East departure gate shifted to the east New procedures for aircraft heading to the East departure gate North departure gate shifted to the northeast New procedures for aircraft heading to the North departure gate West departure gate expanded to the north and south New procedures for aircraft heading to the West departure gate South departure gate shifted to the southwest New procedures for aircraft heading to the South departure gate New Ocean departure gate New procedures for aircraft heading to the Ocean departure gate North arrival post moved to 50 miles north of EWR New procedures for aircraft arriving from the North arrival post West arrival post shifted to be near Greenville, NY West arrival flow split into two arrival flows, one to the north and one to the south New procedures for aircraft arriving from the South arrival post Use of both parallel runways for arrivals</p>
TEB	<p>Departure gates match those of EWR Integrated Airspace with ICC New distant procedures for aircraft heading to the North departure gate New distant procedures for aircraft heading to the West departure gate New distant procedures for aircraft heading to the South departure gate West arrival post shifted 15 miles south New procedures for aircraft arriving from the West arrival post New procedures for aircraft arriving from the West arrival post from the vicinity of Yardley, PA</p>
HPN	<p>North departure gate shifted 15 miles northeast New distant procedures for aircraft heading to the North departure gate West departure gate extended to the north and to the south New procedures for aircraft heading to the West departure gate South departure gate shifted to the west New departure procedures for aircraft departing to the south gate North arrival post shifted to the east New distant procedures for aircraft arriving from the north gate New distant procedures for aircraft arriving from the south</p>
PHL	<p>West departure gate expanded to the northwest</p>

Table 2.4

Summary of Integrated Airspace Alternative Variation with ICC

Airport	Changes from Future No Action
	New procedures for aircraft heading to the West departure gate East departure gate is shifted to the east New procedures for aircraft heading to the East departure gate West arrival post shifts to the northeast New distant procedures for aircraft arriving from the West arrival post New departure headings for aircraft heading to the North, East, West, Southwest, and South departure gates Additional route added to North arrival post

A summary of the comparison of the alternatives can be found below.

Table 2.6

Operational Comparison of Alternatives

(The most advantageous operational metric has been shaded and boldfaced)

Purpose & Need Evaluation Criteria	How Measured	Alternative				
		Future No Action	Modifications to Existing Airspace	Ocean Routing Airspace	Integrated Airspace	
					without ICC	with ICC
Reduce Complexity	Jet route Delays + time below 18,000 feet (minutes)	12	12	12	11	10
	Arrival Distance below 18,000 feet (nautical miles)	96	95	99	96	102
Reduce Voice Communications	Max Interfacility handoffs per hour	525	525	521	529	382
Reduce Delay	Traffic weighted arrival delay 2011 (minutes)	22.9	22.6	23.6	22.8	19.9
	Traffic weighted departure delay 2011 (minutes)	23.3	20.9	29.5	20.8	19.2
Balance Controller Workload	Equity of West gate fix traffic counts	0.37	0.37	0.37	0.34	0.30
Meet System Demands & Improve User Access to System	End of day's last arrival push (time)	23:54	23:54	23:54	23:54	23:00
Expedite Arrivals and Departures	Time below 18,000 ft (minutes)	18.5	18.2	18.8	18.2	18.6
	Change in route length per flight (nautical miles) ⁽¹⁾	0.0	0.0	4.5	-1.2	3.7
	Change in block time (minutes per flight) ⁽¹⁾	0.0	-0.9	3.9	-1.0	-1.4
Flexibility in Routing	Delay saved per flight per day (minutes)	0	0	0	0	12.6
Maintain Airport Throughput	Arrival Max Sustainable Throughputs	223	223	223	223	238
	Departure Max Sustainable Throughputs	238	239	221	240	245

Notes: (1) A negative value indicates a net decrease in the category.

Source: Operational Analysis of NY/NJ/PHL Metropolitan Area Airspace Redesign Alternatives, (MITRE Technical Report - MTR 05W0000025, March 2005, Table ES-1. Summary of Operational Impacts, p. ix.).

V. Preferred and Environmentally Preferred Alternatives

At the time the Draft EIS was published, the FAA had not selected a preferred alternative. The FAA preferred to consider public and agency comments on the DEIS prior to identifying its preferred alternative. In March 2007, FAA announced the Integrated Airspace Alternative with ICC as its preferred alternative. This alternative was preferred because it best meets the purpose and need for the project: to improve the efficiency and reliability of the airspace thereby accommodating growth while enhancing safety and reducing delays.. Table 2.6 provides an operational comparison among the alternatives. The Integrated Airspace Alternative in its ICC variation provides the best improvement in ten of the thirteen metrics that quantify each element of the purpose and need for the redesign. While the Modifications alternative and the Integrated Airspace alternative without ICC variation would provide marginal reduction in many metrics, the Integrated Airspace Alternative with ICC would provide substantial benefits. The metrics that relate most directly to user costs (delay, routing flexibility and block time) are only improved by the Integrated Airspace alternative with ICC. Ocean Routing would decrease the airspace efficiency and add complexity to the airspace, thus it does not meet the purpose and need for the project. Therefore, the Integrated Airspace Alternative with ICC is the preferred alternative.

After selecting the Integrated Airspace Alternative with ICC as the preferred alternative, FAA began the process of developing measures to alleviate, to the extent possible, the impacts associated with the preferred alternative. Mitigation measures are those designed to avoid, minimize, rectify, reduce, eliminate, or compensate for environmental impacts. Because the preferred alternative would result in significant noise and noise-related (environmental justice) impacts in some areas, mitigation measures were developed to reduce the noise impacts where possible. FAA considered mitigation for all areas, including areas that did not receive a significant or slight to moderate impact. FAA also considered mitigation to address long-standing issues that might be improved as a result of airspace redesign.

After the Draft EIS was published, FAA identified a number of potential mitigation measures for the project. Additionally, FAA considered all public comments that included potential mitigation measures, which numbered over 450. Many of the public mitigation comments focused on similar issues and techniques as those identified by the FAA. An initial screen was performed on each proposed measure. Some measures were immediately discarded because they presented operational or safety problems. Each remaining proposed mitigation measure was subjected to a two-step operational modeling. This modeling was both qualitative and quantitative. The two-step operational modeling identified whether a proposed measure was viable and the degree to which the proposed measure impacted the operational efficiency of the preferred alternative. In some cases a noise screen was applied to determine which measures provided the best alternatives for noise reduction. Details of this process can be found in Chapter 5 of the Final EIS.

FAA considered the environmental impacts of the preferred alternative with the mitigation that resulted from the screen. The results of those analyses, the Mitigation Report, were published in April 2007. FAA solicited comments on the Mitigation Report including holding several public meetings. Mitigation measures were then incorporated into the preferred alternative resulting in the mitigated preferred alternative: the Integrated Airspace Alternative with ICC and mitigation measures.

The following mitigation measures have been identified as part of the selected project:

- HPN Departures—Departure routes shifted to the north shifted closer to the no action location
- LGA Departures—Departure headings reduced to two except during the morning push
- LGA Arrivals—Increased use of Localizer Directional Aid (LDA) arrival to Runway 22
- EWR Departures—Number of departure headings used based on demand; at night use modified ocean routing procedure
- EWR Arrivals—Raised arrival altitudes for Runways 22L/R in the vicinity of Bergen County, New Jersey and Rockland County, New York; raised arrival altitudes for Runways 4L/R in the vicinity of Sussex and Morris Counties, New Jersey; use continuous descent approach (CDA) during nighttime hours for arrivals from the northwest and southwest
- PHL Departures—Use one departure heading for Runways 9/27 L/R during nighttime hours
- PHL Arrivals—Increased use of River Approach (visual) to Runway 9; use CDA during nighttime hours for arrivals from north, northwest, and southwest

The mitigated preferred alternative is also the environmentally preferred alternative. In 2006 it reduces the number of persons who would be significantly impacted by noise to 545 people near PHL. In 2011, the mitigated preferred alternative would result in no significant impacts. The mitigated preferred alternative is the FAA's selected project.

VI. Environmental Impacts and Mitigation

In accordance with the guidelines set forth in the CEQ regulations and FAA Order 1050.1E, Chapter 4 of the EIS describes the potential impacts of implementing the project. Potential impacts include both the direct and indirect effects of the proposed project and all reasonable alternatives. A total of nineteen impact categories were analyzed. The technical findings in the EIS provide federal decision-makers and officials, as well as the public, with an understanding of the potential effects of the project on the human, physical, and natural environment.

The potential impacts of the Airspace Redesign project were determined by comparing the projected future conditions without the project (Future No Action) with the projected future conditions for each action alternative. As discussed in section III above, the action alternatives analyzed for environmental impacts are: Modifications, Ocean Routing, and two variations of the Integrated Airspace, without ICC, and with ICC.

A. Study Years

The EIS used the year of 2000 as the baseline year for the analysis. The year 2000 was used for several reasons. First, when the EIS analysis began, the year 2000 was the most recent complete calendar year for which air traffic statistics were available. Additionally, at the time the EIS analysis began, 2000 was the last full robust year of air traffic activity prior to the aviation slowdown resulting from terrorist activities and economic downturns. Finally, a study of the scope and magnitude of the EIS takes a number of years to develop fully. The analysis, specifically the noise modeling for the Draft EIS, took approximately three and a half years to complete. Because of the time involved in performing the noise analysis, any baseline year would be several years in the past.

The years 2006 and 2011 were used as implementation years in the EIS. At the time the EIS analysis began, the FAA expected that if an action alternative were selected, implementation of the selected alternative would occur in stages. Some of the elements of an action alternative, for example using dispersal headings and transferring airspace from other air traffic facilities, could be implemented almost immediately, after training air traffic controllers. Because some elements of an action alternative could be implemented almost immediately and the Draft EIS was expected to be published in 2005, it was reasonable to assume 2006 as the first implementation year. Appendix B contains an analysis of forecast and actual traffic for 2006; the forecast was found to be reasonably close to the actual operations. The EIS is replete with references to 2006 as the first year in which this project would begin to be implemented. However, as a result of the extended comment period and the volume of public comments received, this proposed implementation date has been delayed by one year. In order to avoid confusion and the perception that this ROD addresses a proposal other than the one presented in the EIS, we have continued to refer to 2006 as the year of initial implementation.

B. Forecasts

The FAA developed forecasts of future aviation activity for the purpose of designing the detailed alternatives and analyzing the impacts of those alternatives. The FAA's Office of Aviation Policy and Plans (APO) develops and regularly updates Terminal Area Forecasts (TAF) for selected airports throughout the country. The TAF however does not provide sufficient detail required for environmental modeling. For example, the TAF does not provide aircraft type, destination, and time of day of operations. As a result a forecast of future IFR aviation activity in the Study Area was prepared for this project. The forecast developed for this project centers around IFR flights at the 21 airports on which this study focused. Specific forecasts were not developed for the remaining airports in the Study Area. Because there would be no change in procedures at those airports as a result of the project, specific forecasts were not needed for the operational modeling. FAA recognized that in order to accurately portray the noise exposure, IFR operations from the other airports in the Study Area must be included in the forecasts for the noise analysis. IFR flights through the study area at an altitude below 14,000 feet MSL were included in the noise analysis as overflights. Overflights, for the noise

forecast, included flights that may have originated at or been destined for an airport within the study area that was not one of the 21 focus airports, as well as flights that did not originate from and/or were destined for an airport outside the study area.

In developing the forecast, the project team paid particular attention to the forecast for the general aviation (GA)⁸ sector. The corporate aviation market, which is generally identified as business executive transportation using small jets and turboprop aircraft, is expected to grow much faster than scheduled airline service. This is primarily because of growth in fractional ownership programs in which businesses or individuals purchase a portion of an aircraft and share its use with other owners. Appendix B to the Final EIS contains details on forecasts including the assumptions upon which the forecasts were made.

Aircraft, including helicopters, operating under visual flight rules (VFR) are not part of this study and were not included in the forecasts because they are unaffected by proposed alternatives. VFR aircraft are not required to be in contact with ATC. Because VFR aircraft operate on a “see and be seen” principal and are not required to file flight plans, FAA has very limited information for these operations. There is no known source of comprehensive route, altitude, aircraft type, and frequency information for VFR operations in the study area. VFR aircraft generally fly in two ways—either in a pattern around an airport or to some destination of the pilot’s choosing. VFR aircraft do not fly set routes to the same destination on each flight. A pilot operating an aircraft under VFR has the discretion to select his destination, route of flight, altitude, and the frequency with which he flies.

The Airspace Redesign project covers over 31,000 square miles and involves five major airports, sixteen satellite airports, and numerous other airports. As a practical matter, VFR aircraft can depart from or arrive at virtually any airport in the study area or simply pass through the study area on their way to their destination. They can take any route while in the study area. There is no effective method of obtaining a representative sample of the frequency of VFR flights, their routes, altitudes, destinations, and the type of aircraft used over the study area for this type of project. To address potential cumulative noise impacts from VFR traffic the FAA conducted noise monitoring at 18 locations during two distinct periods, resulting in over 36 individual data sets.

In contrast, there are ways for the FAA to obtain the sample data necessary to analyze VFR operations in NEPA documents for discrete proposed airport development projects. The study area for such projects is centered on the specific area surrounding that airport. Most impacts take place in the general area surrounding the airport. Landing and takeoff routes for airport-specific projects are limited by the runway configuration at the airport, and surveys can be conducted to determine representative destinations for VFR aircraft.

C. Impacts and Mitigation

⁸ General aviation refers to aircraft operations other than those by scheduled passenger and cargo aircraft not characterized as air carriers or air taxis.

Chapter 4 of the Final EIS contains a detailed analysis of the environmental impacts of all of the alternatives for each of the study years. A detailed discussion of the mitigated preferred alternative, the selected project, appears in Chapter 5 of the Final EIS. This section of the ROD will discuss the impacts of the preferred alternative and the selected project as compared with the no action alternative.

1. Noise and Compatible Land Use

A. Noise

As required by FAA Order 1050.1E, the Noise Integrated Routing System, NIRS, was used to model the noise impacts of the Airspace Redesign project because the project involved a study area larger than the immediate vicinity of an airport, incorporates more than one airport and includes actions above 3,000 AGL. FAA also applied its criteria of significance, an increase of 1.5 dB DNL or more on any noise sensitive area within the 65 dB DNL area, to determine whether the project would result in a significant noise impact. Additionally, FAA reported areas of slight to moderate impacts, that is areas already experiencing noise between 60 to 65 dB DNL that experience a 3 dB DNL or more increase, and areas between 45 and 60 dB DNL that experience a 5 dB DNL or more increase. Section 4.1.2 of the Final EIS contains the detailed environmental analysis of each of the alternatives with respect to noise and compatible land uses.

Under the Future No Action Alternative, there will be a slight growth in noise exposure because of an increase in aircraft operations expected in 2006 and 2011. Approximately 72,141 people in the Study Area, principally in the areas surrounding Kennedy, Newark Liberty, LaGuardia, and Philadelphia Airports, are projected to be exposed to aircraft noise levels greater than 65 dB DNL in 2006. In 2011, this number is 75,459. In 2006 213,962 people in the Study Area are projected to be exposed to noise levels in the 60 to 65 dB DNL range. This number declines to 209,793 in 2011. The Study Area population projected to be exposed to noise levels in the 45 to 60 dB DNL range is 11,774,446 in 2006 and 11,688,798 in 2011.

The selected project would cause approximately 21,399 people to experience noise levels of 65 DNL dB or greater in 2006. These impacts would occur principally in areas surrounding Kennedy, LaGuardia, Newark Liberty and Philadelphia Airports, specifically in the area of Rikers Island and Hunts Point in New York, Elizabeth, New Jersey, and Essington, Crum Lynne, Woodlyn, Wallingford, Rose Valley, Parkside, Brookhaven, and southeastern Chester Heights in Pennsylvania. The noise increases over Rikers Island and Hunts Point result from the new departure headings off LGA Runway 31 to the north and west gates. The noise increases over Elizabeth, New Jersey are caused by new departure heading off EWR Runways 22L/R. In the Philadelphia area, the noise increases are caused by new departure headings from PHL Runways 27L/R.

Slight to moderate impacts would also result from the preferred alternative in 2006. Approximately 37,558 people in the Study Area would experience an increase of 3 dB

DNL who would be in areas experiencing noise exposure of 60 to 65 dB DNL. In areas that would experience 45-60 dB DNL, the number persons experiencing a slight to moderate impact, 5 dB DNL, would be 142,517.

The preferred alternative would also result in noise decreases in 2006. Within areas that would experience noise exposure of 65 dB DNL and above, 5,970 persons would experience a noise reduction of 1.5 dB DNL or more. One person within the 60-65 dB DNL would experience a noise reduction of 3 dB DNL, and 39,400 people in areas that would experience 45-60 dB DNL would experience a noise reduction of at least 5 dB DNL.

The year 2011 represents the full airspace consolidation and full implementation of the preferred alternative. Significant impacts will occur in 2011 with the preferred alternative, again principally in the areas surrounding Philadelphia, Newark Liberty, Kennedy and LaGuardia Airports. A total of 15,826 people in the study area will experience significant noise impacts principally in the areas of Rikers Island and Hunts Point, New York, Elizabeth, New Jersey, and Essington, Crum Lynne, Woodlyn, Wallingford, Swarthmore, Media, Rose Valley, and Parkside, Pennsylvania. The 2011 noise increases result from the same design elements that cause significant impacts in 2006. While 2011 will result in significant noise impacts, those impacts will affect a smaller number of people in the study area in 2011 than in 2006.

Slight to moderate impacts would also result from the preferred alternative in 2011. Approximately 34,824 people in the Study Area who would be in areas experiencing noise exposure of 60 to 65 dB DNL would experience an increase of 3 dB DNL. In areas that would experience 45-60 dB DNL, the number persons experiencing a slight to moderate impact, 5 dB DNL, would be 290,758.

The preferred alternative would also result in noise decreases in 2011. Within areas that would experience noise exposure of 65 dB DNL and above, 6984 persons would experience a noise reduction of 1.5 dB DNL or more. Within the 60-65 dB DNL 22 people would experience a noise reduction of 3 dB DNL, and 62,537 people in areas that would experience 45-60 dB DNL would experience a noise reduction of at least 5 dB DNL.

With respect to noise, the selected project (the mitigated preferred alternative) would result in a decrease in the number of significantly impacted persons in 2006 to 545, in an area west of Philadelphia International Airport, and the elimination of significant noise impacts in the year 2011. Because the mitigation measures applied to the Integrated Airspace alternative with ICC, the analysis focused on the year 2011. As a result of the mitigation measures, the number of persons who would experience a significant noise impact would be reduced to 0 from the 15,826 people who would experience a significant noise impact without the mitigation measures. With respect to slight to moderate impacts, 16,803 people who would be in areas experiencing noise exposure of 60-65 dB DNL would experience a 3 dB DNL increase in noise, down from 34,824 without mitigation. In areas that would experience noise exposure between 45 and 60 dB DNL,

50,392 would experience a 5 dB DNL increase, as compared to the 290,758 persons who would experience a similar increase without mitigation. See Chapter 5 of the Final EIS for additional details.

As compared to the Future No Action in 2011, the selected project would reduce the number of people experiencing noise exposure of 65 dB DNL and above by 778 people. It would result in increases in the number of people experiencing noise exposure levels between 60 and 65 dB DNL and 55-60 dB DNL by 30,594 and 79,813 respectively. In 2011, the number of people projected to be exposed to noise at the 50-55 dB DNL level would be reduced by 180,411 people over the Future No Action alternative. Finally, with respect to areas, 548,214 fewer people will experience a 45-50 dB DNL noise exposure as a result of the selected project.

The selected project will not have a significant impact with respect to noise in 2011.

B. Compatible Land Use

For airspace redesign projects, incompatible land uses result chiefly from noise impacts. Excessive noise exposure may be incompatible with noise sensitive land uses, such as residences, schools, hospitals, places of worship, parks, and historic sites. Residences in the areas that would experience significant noise impacts as a result of the selected project would constitute incompatible land uses. Additionally, several noise sensitive properties would experience significant noise impacts. They are: Inwood Country Club near JFK; residences at 34 E. 4th Street and 406 Marshall Street and the John Marshall School, and the Bronx Powder Company and the Jenkins Rubber Company buildings near EWR; and the Westinghouse Industrial Complex near PHL. Based on the level of noise modeled for these noise sensitive sites and their use, the only the residences at 34 E. 4th Street and 406 Marshall Street and the John Marshall School would represent an incompatible land use.

When the mitigation measures are considered, the selected project would not result in incompatible land uses. As stated in the discussion of noise impacts, the mitigation decreases the number of significantly impacted people to 545 in 2006 and eliminates all significant noise impacts to people in 2011, therefore the selected project would not result in incompatible residential land uses in the long term. With respect to other noise sensitive properties, only the Inwood Country Club and the Westinghouse Industrial Complex would continue to be subject to significant noise impacts by the selected project. Based on their use, the level of noise exposure at the Inwood Country Club and Westinghouse Industrial Complex would not represent incompatible land uses.

2. Socioeconomic Impacts and Environmental Justice

A. Environmental Justice

FAA afforded meaningful opportunities for minority and low income populations to participate in the environmental review process by conducting extensive public outreach

activities. The FAA held 31 pre-scoping workshops, 28 formal scoping meetings, 30 public meetings on the Draft EIS and 7 public information meetings on the Noise Mitigation Report. These meetings were held in locations accessible by public transit, translators were provided, and meetings were advertised by contacting community leaders and using specialized foreign language media. The public information meeting in Newark, New Jersey was held near the potentially affected community.

Environmental Justice impacts were evaluated using the definitions of minority and low income populations in DOT Order 5610.2 and the Council on Environmental Quality Guidance Under the National Environmental Policy Act. For purposes of the analysis, a high and adverse effect was considered to be a significant impact. As all of the proposed airspace redesign alternatives have potentially significant noise impacts, census data was used to determine the income and minority composition of the significantly impacted areas. This data was used to determine whether these alternatives would result in disproportionately high and adverse effects on minority or low income populations.

The data indicated that all of the airspace redesign alternatives would result in environmental justice impacts on minority populations, but not low-income populations. See FEIS Section 4.2 for more details. The preferred alternative would have disproportionately high and adverse impacts on minority populations principally at Rikers Island near LaGuardia and in areas surrounding Newark Liberty and Philadelphia International. As the median income in the effected residential areas exceeds the poverty level there would be no disproportionately high and adverse impacts on low income populations.

Mitigation measures were considered to avoid or minimize the significant impacts for the preferred alternative, in the Final EIS. With mitigation, the preferred alternative would cause significant noise impacts in a residential area located west of PHL upon initial implementation (2006) but all such impacts would be eliminated by 2011.

Closer examination of impacts by census block showed that the overall population significantly impacted by noise in 2006 is less than 50% minority. When the minority population significantly impacted by noise (highest percentage is 17%) is compared to the minority population for Delaware County, 18.7%, the minority population significantly impacted is not meaningfully greater than that of the surrounding area. The percent minority population and median income of each of the significantly impacted census blocks in 2006 is shown in FEIS Table 5.10. The data in the table indicates that median income levels in the significantly impacted areas are above the poverty level.

Based on the above, the project selected for approval and implementation in this ROD, the Preferred Alternative with mitigation, would not cause a disproportionately high and adverse health or environmental impact upon minority or low income populations in 2006 or 2011.

B. Socioeconomic Impacts

FAA Order 1050.1E requires that socioeconomic impacts be considered in environmental analyses of major federal actions. Both direct and indirect impacts were considered in evaluating the selected project. Factors to be considered in determining whether a project would result in significant socioeconomic impacts include whether the project would cause extensive relocation of residents and sufficient replacement housing would not be available; whether there would be extensive relocation of community businesses that would create a severe hardship for the community; whether there would be disruptions of local traffic patterns that substantially reduce the level of service on the roads in the surrounding community; and whether there would be a substantial loss in a community tax base.

The selected project would not result in the construction of facilities. As a result relocation of residences or community businesses would not be required, local traffic patterns would not be disrupted, and there would be no loss of tax base. There would be no direct socioeconomic impacts as a result of the selected project.

Because the preferred alternative would result in significant noise impacts, FAA considered whether it would create indirect socioeconomic impacts. All of the significantly impacted census blocks are located in the immediate vicinity of LaGuardia, Newark Liberty, and Philadelphia. These areas are currently exposed to extensive aviation noise, and would continue to be exposed to noise at similar levels with the Future No Action alternative. Additionally, because of their urban settings, ambient noise is also high in these areas. It would be unlikely that residences or businesses would relocate, surface transportation patterns would be altered, established communities would be divided, planned development would be disrupted, or employment levels would be changed as a result of the selected project. When mitigation is considered, the selected project eliminates significant noise impacts in the long term, thus eliminating the potential for indirect socioeconomic impacts.

3. Secondary or Induced Impacts

Major federal actions have the potential to create induced or secondary impacts on the surrounding communities. Significant induced impacts would normally result from shifts in patterns of population movement and growth; public service demands; and changes in business and economic activity as a result of the project. Significant secondary impacts would normally only result when there are significant impacts in other impact categories, specifically noise, land use, and social impacts.

Secondary or induced impacts were considered in the areas in which the preferred alternative would create significant noise impacts. All of the significantly impacted areas are located in the immediate vicinity of LaGuardia, Newark Liberty, and Philadelphia Airports. These areas currently are exposed to extensive aircraft noise and would continue to be exposed to similar noise levels with the Future No Action alternative. The areas are also located in an urban setting in which ambient noise is also high. For these reasons, there would be no significant secondary or induced impacts as a result of the

preferred alternative. When mitigation is considered, significant noise impacts are eliminated long term eliminating the potential for secondary or induced impacts as a result of the selected project.

4. Department of Transportation Act Section 4(f) and Land and Water Conservation Act Section 6(f).

A. Historical, Architectural, Archeological, and Cultural Resources

The National Historic Preservation Act of 1966 (16 U.S.C. §470), as amended requires Federal agencies to consider the effects of their undertakings on properties listed or eligible for listing on the National Register of Historic Places. In assessing whether an undertaking, such as the preferred alternative, effects a property listed or eligible for listing on the National Register of Historic Places, both primary and indirect effects must be considered. Primary effects include the physical removal or alteration of an historic resource. Indirect impacts include changes in the environment of the historic resource that could substantially interfere with the use or character of the property. Such changes include changes in noise, vehicular traffic, and visual impacts.

Neither the preferred alternative nor the selected project includes any ground disturbance, and as a result neither would have direct affects on historic resources in the Study Area.

In order to assess the indirect impacts of the preferred alternative on historic resources, the FAA identified the area of potential effect (APE). The APE consisted of all census blocks with significant noise impacts. The State Historic Preservation Officers (SHPO) in each of the states in the Study Area, except Delaware, agreed to this methodology. Delaware SHPO requested that FAA consider all areas of Delaware within the Study Area to be in the APE, and the FAA agreed.

Ten historic resources were identified as being in the APE: the Inwood Country Club near JFK, the Unification Chapel, the residences at 34 E. 4th Street and 406 Marshall Street, the John Marshall school, the Bronx Powder Company and the Jenkins Rubber Company buildings, and the Singer Factory District, the Italianate Rowhouse at 168-173 Reid Street, the Sacred Heart Church and School and a portion of the Central Railroad of New Jersey, near EWR; and the Lazaretto, the Printzhof, the Corinthian Yacht Club and Springhouse, the Art Moderne House, the Linde Air Products Corporation, the Westinghouse Village row houses and the Westinghouse Industrial Complex located to near PHL.

None of these historic properties is listed or eligible for listing on the National Register of Historic Places because of a quiet setting, therefore an increase in noise, even a significant increase in noise, would not constitute an adverse effect. The FAA has coordinated its determination of no adverse effect with the respective SHPOs. The Pennsylvania SHPO initially sought additional information with respect to the project, however each of the SHPOs has concurred with the FAA's determination of no adverse effect.

B. Parks, Wildlife Refuges

The Draft EIS and Final EIS addressed the FAA's requirement under Section 4(f) of the Department of Transportation Act of 1966 [codified as 49 U.S.C. §303(c)] to determine whether the selected project would result in the use of protected lands or historic properties. Section 4(f) provides that the "Secretary [of Transportation] may approve a transportation program or project requiring the use of publicly owned land of a public park, recreation area, or wildlife and waterfowl refuge of national, State, or local significance, or land of a historic site of national, State, or local significance (as determined by the Federal, State, or local officials having jurisdiction over the park, area, refuge, or site) only if there is no prudent and feasible alternative to using that land; and the program or project includes all possible planning to minimize harm to the park, recreation area, wildlife and waterfowl refuge, or historic site resulting from the use." The term "use" encompasses not only physical use but may also include adverse impacts such as noise ("constructive use"). A constructive use of a Section 4(f) resource occurs only when the adverse impacts of a project substantially diminish the activities, features, or attributes of the resource that contribute prominently to its significance or enjoyment."⁹

As explained in the Draft EIS and Final EIS, there would be no actual, physical taking of any Section 4(f) property for the selected project. The selected project does not require land acquisition or facility construction. While the selected project has been described as the Integrated Airspace Alternative with Integrated Control Complex, the EIS has made it clear that an ICC can be accomplished within existing buildings with a shared automation platform.

The key issue in terms of constructive use for airspace redesign is project-related aircraft noise. A secondary issue in terms of constructive use for airspace redesign is visual impacts. Chapter Four of the Draft EIS indicated that the Airspace Redesign would not cause use of any Section 4(f) lands and historic sites. Chapter Four relied primarily upon application of the land use compatibility guidelines in 14 CFR Part 150. In response to comments on the Draft EIS, the FAA re-evaluated the applicability of Part 150 guidelines to all Section 4(f) resources in the Study Area. Based upon consultation with the National Park Service and comments from interested parties, the Final EIS included information about: (1) Section 4(f) resources potentially having quiet settings as a generally recognized feature or attribute of their significance, (2) a determination of no constructive use when such resources would be predicted to experience less than a 3 DNL change in noise as a result of the selected project in 2011, and (3) the nature of airspace changes affecting such resources predicted to experience 3 DNL or greater increases in noise in 2011. The following paragraphs summarize the information included in Chapter Five of the Final EIS.

Based upon consultation with NPS and interested parties and the data and analyses described in Chapter 5 of the Final EIS and this ROD, FAA has gained additional knowledge about the relative nature and magnitude of project-related impacts in the

⁹ 23 CFR §771.135(p)(4)(ii)

overall context and the values of the resources protected by Section 4(f) in the study area. The data and analyses indicate that the mitigated Preferred Alternative will not result in a use of a park, recreation area or wildlife and waterfowl refuge, or historic site of national, State, or local significance.

Constructive Use- Noise

Since the selected project has the potential to result in changes in noise over Section 4(f) sites, the FAA conducted an analysis of whether there is a constructive use of any Section 4(f) properties. For a project to result in a constructive use of a 4(f) property, a substantial impairment must occur. “Substantial impairment occurs only when the activities, features, or attributes of the resource that contribute to its significance or enjoyment are substantially diminished. ... With respect to aircraft noise, for example, the noise must be at levels high enough to have negative consequences of a substantial nature that amount to a taking of a park or portion of a park for transportation purposes.”¹⁰

The FAA relies on Part 150 [14 C.F.R. Part 150] guidelines to evaluate whether there is a constructive use of Section 4(f) lands where they are relevant to the value, significance, and enjoyment of Section 4(f) lands. Part 150 guidelines are appropriate in evaluating whether there is a constructive use of lands devoted to traditional recreational activities. Additionally, the FAA also relies upon Part 150 guidelines, as applicable, for evaluating whether there is a constructive use of historic properties such as for properties in use as residences.

The FAA recognizes that Part 150 guidelines may not be appropriate to address 4(f) resources of value for their quiet settings, that is, lands where noise levels are very low and visitors have an expectation of quiet. “Special consideration needs to be given to the evaluation of the significance of noise impacts on noise sensitive areas within national parks, national wildlife refuges and historic sites, including traditional cultural properties. For example, the 65 dB DNL threshold does not adequately address the effects of noise on visitors to areas within a national park or national wildlife refuge where other noise is very low and a quiet setting is a generally recognized purpose and attribute. In its comments on the Draft EIS dated June 12, 2006, the US Department of Interior recommended that FAA “perform more thorough analysis of impacts to National Park System units and other listed Section 4(f) resources ... and then re-evaluate the issue of 4(f) use.”¹¹

The FAA consulted with the National Parks Service (NPS) and considered comments from other interested parties to identify Section 4(f) lands valued for their quiet settings located in the Study Area. The National Parks within the Study Area, the Wilderness Areas of the Catskill State Park, Minnewaska State Park, and Shawangunk Ridge State Forest were identified as potentially having value for their quiet settings. These Section 4(f) lands were subject to additional analysis to determine whether the impacts of the selected project constitute a constructive use.

¹⁰ FAA Order 1050.1E, Appendix B, Section 6.2f

¹¹ FEIS, Appendix N, (Section N.1 under Federal Agencies)

In evaluating the 4(f) lands identified as potentially having value for their quiet setting, the FAA described the property, highlighting any information relating to the level of use and visitor experience. Management plans, when provided by the NPS/FWS, were reviewed and pertinent information was included in the description. Noise levels were calculated at points within each of the properties. Graphics and tables showing the locations and values of the calculated noise levels in each of the subject lands are included in Appendix J.3 of the Final EIS. The difference in noise exposure levels with and without the selected were compared and evaluated.

Lands with a 3.0 DNL or Less Change

The noise values (DNL) for the selected project for 2011 were compared to the 2011 Future No Action Alternative noise values. Where the difference in the noise level experienced as a result of the selected project, as compared to the 2011 Future No Action, was less than 3.0 DNL at all points analyzed within the property, FAA concluded the change in noise would not result in a constructive use of the Section 4(f) land. The use of 3.0 DNL for screening for constructive use is a conservative application of the screening criteria used by the FAA to analyze noise levels below 65 DNL dB in NEPA documents and consistent with Federal Highway Administration and Federal Transit Administration (formerly the Urban Mass Transit Administration) regulations defining constructive use under 23 C.F.R. §771.135.¹² At a great majority of the Section 4(f) properties identified for additional analysis, the difference in noise exposure level would be less than 3.0

¹² The FAA adopted the recommendations of the Federal Interagency Committee on Noise (FICON) to broaden the scope of airport noise analysis to address 3 dB or more between DNL 60 and 65 dB in its NEPA documents. The Technical subgroup of FICON developed this criteria based on its assessment that a 3 dB increase in DNL, which represents a doubling of sound energy, is clearly perceptible at sound levels between DNL 60 and 65dB and suggests the need for additional analysis. FAA Order 1050.1E, Appendix A, paragraph 14.4c. For air traffic airspace actions such as the present one FAA normally uses the Noise Integrated Routing System (NIRs) to produce change-of-exposure tables and maps at population centroids based upon changes of 5 DB in the DNL 45-60 DNL dB contour area and changes of 3 dB or greater between DNL 60 and 65 DNL dB. FAA Order 1050.1E, paragraph 14.5e. DNL changes of 5dB are used because it requires a greater change in noise at lower noise levels to have the potential for people to perceive a change in the noise environment. Increases of 3 dB or greater were used as a screening tool here at all levels below DNL 65 dB, including areas far below FAA's normal DNL 45dB lower limit for screening populated areas, to err on the side of more conservative screening. This resulted in additional analysis at much lower noise levels using much lower screening criteria than normal to provide special consideration to resources protected under DOT Section 4(f) identified as having a quiet setting as a generally recognized purpose and attribute and also to address DOI concerns that parks should not be equated to residential areas. The FICON guidance concerning 3 DNL db is more directly relevant here than the FHWA constructive use regulations, which relate to traffic noise exposure measured in hourly or 12 hour equivalent sound levels.

DNL. Therefore, the FAA concluded in the Final EIS that for these properties the selected project would not result in a constructive use.

Lands with Some Change greater than 3.0 DNL

Some of the Section 4(f) land would experience a change in noise exposure level of 3.0 DNL or greater as a result of the selected project. The FAA did not make a conclusion regarding constructive use of these properties in the Final EIS. Rather, in Section 5.3.5.1 of the FEIS the FAA committed to conduct further evaluation, in consultation with appropriate federal and state officials, to determine whether predicted noise increases over affected areas of these 4(f) resources would result in a constructive use. FAA further indicated that it would include the results of this evaluation and any necessary additional 4(f) analysis and determination in this Record of Decision. The additional analysis is summarized below and detailed in Appendix B of the ROD.

The Section 4(f) properties for which additional noise evaluation was conducted are:

- Appalachian National Scenic Trail
- Delaware and Lehigh National Heritage Corridor
- Delaware Water Gap National Recreation Area
- Hopewell Furnace National Historic Site
- Upper Delaware Scenic & Recreational River
- Weir Farm National Historic Site
- Walkill River National Wildlife Refuge
- Catskill Park (Big Indian—Beaverkill Range Wilderness Area, Slide Mountain Wilderness Area, Westkill Mountain Wilderness Area)

Additional 4(f) Resources to which Part 150 Guidelines Apply

Upon additional review, the FAA has determined that a quiet setting does not appear to be a generally recognized feature or attribute of the significance for several of the sites that were identified for further study in the Final EIS. The additional analysis and review is summarized below and detailed in Appendix B of the ROD.

The Hopewell Furnace National Historic Site, Upper Delaware Scenic and Recreational River, and the Delaware and Lehigh Canal National Heritage Corridor are lands for which a quiet setting is not an attribute of the land. Therefore, pursuant to Order 1050.1E, the Part 150 guidelines should be used to evaluate whether there is a constructive use. The range of noise exposure levels resulting from the selected project for all three 4(f) properties were below the Part 150 compatibility guidelines. Additionally, the Hopewell Furnace National Historic Site, and the Delaware and Lehigh

Canal National Heritage Corridor are historic properties and the finding under Section 106 may be used to determine whether there would be a constructive use. Both sites are outside the APE determined in consultation with the appropriate State Historic Preservation Officers and therefore were not affected by the selected project.

Lands for which a quiet setting is an attribute of the land

With respect to the remaining Section 4(f) sites for which a quiet setting is an attribute of the land, a review of the data showed that with the selected project, the aircraft noise exposure levels at the points evaluated in all of these sites would remain within a range of 44.0 DNL at the highest to 15.5 DNL at the lowest. This range in noise level is low to extremely low. For example, FHWA has determined that a constructive use would not occur for “Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.” when the project noise does not exceed 57 Leq(h).¹³ This can be conservatively equated to 43.2 DNL.¹⁴ Specifically any location that has an aircraft DNL value of 43.2 DNL or less could not possibly have a peak hour Leq(h) level of greater than 57 dB.

The FAA evaluated the noise exposure levels at the remaining Section 4(f) properties, the Appalachian Trail, the Catskill Park Wilderness Areas, the Delaware Water Gap, the Wallkill National Wildlife Refuge and the Weir Farm National Historic Site, by considering the noise exposure level ranges and medians at each site. Based on this data, the FAA determined that the noise environment would not be substantially changed by the selected project and/or the comparable ambient noise levels are expected to be higher than future aircraft noise levels, and/or the site was not affected as it pertains to Section 106. Therefore, the FAA concluded that the selected project would not result in a constructive use of a 4(f) property as it relates to noise.

FAA also considered effects upon the Wallkill National Wildlife Refuge considering the fact that one of its purposes is to preserve threatened and endangered species. Listed species known to inhabit the refuge currently or in the past are: the Indiana bat, bog turtle, dwarf wedge mussels, Mitchell’s stayr (extirpated), and American burying beetle (extirpated). As noted in the section of this ROD relating to threatened and endangered species, by letter dated August 27, 2007, the FAA determined that the selected project would have no affect on these listed species and requested concurrence from FWS. See that section of the ROD for more details.

Constructive Use- Visual

¹³ 23 CFR §771.135and Table 1 of 23 C.F.R. §772.

¹⁴ The criteria are based on the 1-hour Leq (Leq(h)) metric for peak hour traffic. The DNL metric is a 24-hour cumulative noise metric with an added 10 dB penalty for events that occur during nighttime hours. Translating the 1-hr Leq threshold to a 24-hour Leq can be done conservatively (finding the lowest 24-hr threshold level) by assuming that the threshold value (Leq(h) 57 dB) would occur only one hour during the day and then no noise for the remaining 23 hours of the day. This would result in a 24 hour Leq of 43.2dB. The comparison of DNL values to 24-hour Leq values generally represents a conservative comparison since DNL levels are typically higher than Leq values would be for the same amount of noise.

Visual impacts would result in a constructive use of a 4(f) site only if the activities, features, or attributes of the site that contribute to its significance or enjoyment are substantially diminished. Normally, visual impacts are a result of construction, development, or demolition. The selected project does not include any of these actions. FHWA regulations defining constructive use include examples of when the proximity of a proposed project to a 4(f) site would substantially diminish aesthetic features or attributes that contribute to the value of a Section 4(f) property. “Examples...would be the location of a proposed transportation facility in such proximity that it obstructs or eliminates the primary views of an architecturally significant historic building, or substantially detracts from the setting of a park or historic site which derives its value in substantial part due to its setting.”

The North Eastern Corridor of the U.S. is heavily populated and is a hub for domestic and international air traffic. The Study Area is already heavily traversed by commercial aircraft. The selected project is limited to changing the aircraft routes. At higher aircraft altitudes and with greater distances from viewers, it is unlikely that changes in the location of such tracks would substantially obstruct the primary vista or detract from the setting of 4(f) resources that derive their value in substantial part due to their settings and vistas. However, based on consultation with the NPS, the FAA provided additional information regarding potential airspace changes in the vicinity of outstanding vistas located within the National Parks, National Wildlife Refuges and the Catskill Park Wilderness Areas.

As requested by the NPS, the FAA reviewed the management plans and other documentation for the parks to determine the locations of important and / or outstanding vistas. It is noted that many management plans referred to scenic qualities in a generalized manner but did not include the locations of specific outstanding vistas. Visual impacts were primarily considered only for the specifically identified vistas. Thus visual impacts were considered for scenic vistas identified in the following parks: the Appalachian Trail, the Delaware Water Gap National Recreation Area, the Ellis Island National Monument, the Gateway National Recreation Area, the Home of Franklin D. Roosevelt National Historic Site, the Morristown National Historical Park, the Statue of Liberty National Monument, the Vanderbilt Mansion National Historic Site, the Elizabeth A. Morton NWR, the Oyster Bay NWR, the Stewart B. McKinney NWR, the Target Rock NWR, and the Big Indian, Slide Mountain, Indian Head, Westkill Mountain Wilderness Areas in the Catskills Park. For these locations, a summary of the potential airspace changes in the vicinity of the scenic vistas was provided. This information includes number of operations, and the minimum, average and maximum altitudes resulting from the Future No Action Airspace Alternative, Preferred Alternative, and the mitigated Preferred Alternative. Based on this information it was determined in the Final EIS that the selected project would not result in a constructive use relative to visual impacts for scenic vistas in the following parks: the Delaware Water Gap National Recreation Area, the Ellis Island National Monument, the Gateway National Recreation Area, the Morristown National Historical Park, the Statue of Liberty National Monument, the Elizabeth A. Morton NWR, the Oyster Bay NWR, the Stewart B. McKinney NWR, the Target Rock NWR, and the Big Indian, Slide Mountain, and Westkill Mountain Wilderness Areas in the Catskills Park.

Additional Analysis

In Section 5.3.5.1 of the Final EIS the FAA committed to conduct further evaluation to determine whether visual changes over the Appalachian Trail, the Home of Franklin D. Roosevelt National Historic Site and the Vanderbilt Mansion National Historic Site would result in a constructive use and to consult with appropriate federal officials. FAA further indicated that it would include the results of this evaluation and any necessary additional 4(f) analysis and determination in this Record of Decision. The additional analysis is summarized below and detailed in Appendix B of the ROD.

For the Appalachian Trail, the data shows that minimum altitudes for overflights would be the same with both the No Action Airspace Alternative and the selected project for all viewpoints except V19-20, V23-30 and V48-51. At viewpoints V19 -20 and V23 -30 the minimum altitudes would be appreciably/approximately the same. At viewpoints V48 – 51 only very small number of propeller aircraft would fly at an altitude lower than the No Action Airspace minimum altitude. Operations would decrease at 29 viewpoints (V1-V-5; V12-18; V19-20; V59-66, and V72-78) and increase at 48 viewpoints (V6-11, V23-30, V31-37, V38-V58, V67-71, V79). Currently, given their altitude and transitory nature, commercial aircraft do not obstruct the noted views along the Appalachian Trail. Therefore, since the selected project does not substantially change the minimum altitudes of commercial aircraft, it is concluded that the selected project would not result in an obstruction to the noted views nor would it substantially detract from the setting of the Trail. The visual effects of the airspace changes associated with the selected project are minor and would not substantially diminish the activities, features, or attributes of the Appalachian Trail. The FAA thus concludes that the selected project would not result in a constructive use as it relates to visual impacts for the Appalachian Trail.

Specific superb views overlooking the Hudson River, the bluffs and mansions across the river, and the Shawangunk Mountains to the west were noted in the both the Home of Franklin D. Roosevelt National Historic Site and the Vanderbilt Mansion National Historic Site Master Plans. According to Table 5.14 the total daily operations over these sites would increase from 109 with the No Action Airspace Alternative to 136 with the selected project. If those operations were spread out over a 24 hour period this would equate to 4.5 operations per hour with the No Action Airspace Alternative and to 5.7 operations per hour with the selected project. The table also shows that the minimum altitude of these operations does not change as a result of selected project. Therefore, because the change in the number of operations would be low and the minimum altitude would remain the same, the visual environment would not substantially change as a result of the selected project. It is thus concluded that the selected project would not result in a constructive use of these resources as it relates to visual impacts because the changes associated with the selected project would not substantially diminish the activities, features, or attributes of either historic site.

Based on analysis found in the Final EIS and Appendix B of the ROD, the FAA concludes that the selected project would not result in either a physical or constructive use of a 4(f) property. The FAA is committing as part of this ROD to monitor the implementation of the selected project as it relates to DOT Section 4(f) resources for

which quiet and serenity are recognized attributes and purposes, utilizing adaptive management techniques.

5. Wild and Scenic Rivers

The Wild and Scenic Rivers Act provides for the protection and preservation of rivers that possess outstandingly remarkable recreational, geologic, fish and wildlife, historic, cultural, and other similar values. The designated wild and scenic rivers within the Study Area are: the Farmington Wild and Scenic River in Connecticut; the White Clay Creek in Delaware and Pennsylvania; the Great Egg Harbor River and the Maurice River in New Jersey; the Upper Delaware Scenic and Recreational River in Pennsylvania and New York; and the Middle and Lower Delaware Scenic and Recreational River in Pennsylvania and New Jersey.

The FAA has determined that there would be no indirect or direct impacts on a wild or scenic river as a result of the selected project. None of these rivers lie in areas that will experience any reportable noise impact that is a significant or slight to moderate noise impact.

6. Fish, Wildlife, and Plants

A. Fish, Plants and Wildlife Other Than Avian Species

The selected project involves no ground disturbance, and therefore will not destroy or modify critical habitat for any species. Because the number of flights as well as the origin and destination of the flights will remain the same as with the No Action alternative, the selected project would not increase the opportunity for introduction of invasive species. Additionally, the selected project would not increase the probability of aircraft strikes involving non-avian species. Such strikes are either on or very close to the ground. Aircraft movement in areas where terrestrial species are likely to be involved in a strike is dictated by the location of runways and taxiways. The selected project will not alter runway or taxiways at any of the airports in the Study Area. The FAA has concluded that the selected project will have no significant impacts on fish, plants, or wildlife species other than avian species.

B. Birds

The potential impact to avian species resulting from changes to aircraft routes are measured by the potential for the selected project to result in increases in the number of bird strikes. Absent any wildlife attractant, birds tend to be randomly distributed, and changing aircraft departure routes will not increase the potential for bird strikes. Wildlife attractants, such as wildlife refuges and breeding colonies exist in the Study Area beneath initial departure routes.

Aircraft fly over and near wildlife attractants presently and would continue to fly over and near wildlife attractants in the Future No Action alternative. After considering the

changes to aircraft routes as a result of the selected project, while there are noticeable differences in the flight patterns as a result of the selected project, there are no discernable changes to the relationships of flight patterns to birds within the bird study area. Thus, the selected project will not have any significant impacts.

C. Threatened and Endangered Species

The FAA coordinated the Draft EIS with the U.S. Department of Interior, which provided comments from both the FWS and NPS by letter dated June 12, 2006. The Department expressed concerns that the information in the Draft EIS about noise and visual effects, federally listed species, and aircraft-bird collisions was insufficient, but that these could be corrected by incorporating the Department's recommendations for revisions into the FEIS in coordination with NPS and FWS. This section of the ROD summarizes coordination with FWS in response to the request to include conservation measures such as flight restrictions at airports during nesting periods to protect federally listed species from noise and visual changes. FWS recommended maintaining a minimum vertical distance of 2,000 feet above ground level or at least a 1-mile lateral distance from active nesting sites seasonally for each species.

The FAA obtained information from FWS regarding the location of nesting sites so that more detailed information could be provided concerning how the preferred alternative would affect the piping plover, roseate tern, and bald eagle in comparison to the No Action Alternative in the future. Since the bald eagle has been removed from the endangered species list and is no longer subject to protection under Section 7 of the Endangered Species Act, as requested we assessed compliance with the National Bald Eagle Guidelines. These guidelines indicate that aircraft should not be operated within 1,000 feet vertical of nests during the breeding season, except where eagles have demonstrated tolerance for such activity.

By letter dated August 27, 2007, FAA provided additional information to FWS in support of its no effect determination on these three listed species. FAA also assessed the operational feasibility of restricting landings and takeoffs to protect existing nesting sites off the ends of airport runways. As to the recommended flight restrictions to protect piping plover nesting sites and the separation criteria under the National Bald Eagle Guidelines, FAA confirmed that the distance between the closest flight tracks and nesting sites near airports would be the same under the Preferred Alternative with or without mitigation as it is under the Future No Action Alternative/Existing Condition, citing circumstances at two airports. FAA also noted that because nesting at these distances currently occurs, piping plovers and eagles have demonstrated a tolerance for such activity. Although nesting sites of the roseate tern have not been confirmed for many years, there is no indication that circumstances would be different for roseate terns.

FWS staff requested more data comparing the distances between flight tracks under existing conditions and the preferred alternative for all identified nesting sites of the piping plover. Although the preferred alternative does not increase traffic generally, FAA was also asked to address and document the potential for increased flights over

these sites at altitudes below 2,000 feet. The FAA responded on September 4, 2007 and requested concurrence in its determination of no effect for the roseate tern and the piping plover.

While the U.S. Department of Interior expressed no concerns about species in the Wallkill River National Wildlife Refuge, FAA recognized as part of its further review of Section 4(f) resources that the purpose of this refuge is to preserve threatened and endangered species. Species known to inhabit the refuge presently or in the past are the Indiana bat, bog turtle, dwarf wedge mussels, Mitchell's stayr (extirpated), and American burying beetle (extirpated). Based on a review of the literature regarding effects of noise on animals, and the noise analysis indicating that the preferred alternative would not substantially change the noise environment, the FAA expressly determined in its August 27, 2007 letter that the preferred alternative has no affect on these species. FAA sought concurrence as well regarding this determination.

On September 5, 2007 the FAA responded to the FWS and obtained FWS concurrence regarding these determinations of no effect.

7. Light Emissions and Visual Impacts

A. Light Emissions

To determine whether light emissions will create a significant impact, FAA considers the extent to which lighting associated with the project will create an annoyance among people in the vicinity or interfere with their normal activities.

Light emission impacts are most likely to occur at low altitudes and near the primary airports in the study area. Under current conditions, these areas are exposed to aircraft lights, and would continue to be exposed to aircraft lights under the Future No Action alternative. These same areas are most likely to be exposed to light emissions as a result of the selected project. Because the areas most likely to be exposed to light emissions will be exposed to a similar level of light emissions both with and without the selected project, no significant light emission impacts will result.

B. Visual Impacts

Generally, visual impacts result from the disturbance of the aesthetic integrity of an area. Because the selected project would not involve construction, alteration, or demolition of a facility, there would be no visual impacts from physical disturbance to the area. The selected project would cause more aircraft to be in areas in which they would not be under the Future No Action alternative. Changes to aircraft flight patterns at higher altitudes are not normally visually intrusive because of their distance from the ground. Changes at lower altitudes as a result of the selected project would occur predominantly near the primary airports in the study area where communities are currently exposed to the sight of aircraft and would continue to be exposed to the sight of aircraft with the

Future No Action alternative. Thus, there are no significant visual impacts as a result of the selected project.

Visual impacts were also assessed in relation to Section 4(f) properties. See Section VI.4.B. and Appendix B of this ROD for a discussion of the visual impacts on Section 4(f) properties.

8. Air Quality

Air quality impacts are assessed by evaluating the impact of the proposed project on the National Ambient Air Quality Standards (NAAQS) for the six criteria pollutants. The impact of a project is the difference in emissions between an action alternative and the no action alternative in the future and how that projected difference would impact pollutant concentrations. Additionally, FAA must ensure that its project is in conformity with the state implementation plan (SIP) for attaining the NAAQS. Under Section 176(c) of the Clean Air Act, FAA may not engage in, support in any way, provide funding for, license, or approve any activity that does not conform to the purpose of the approved SIP. The U.S. Environmental Protection Agency's (EPA) adopted the General Conformity Rule (40 C.F.R. Part 93 subpart B) to provide guidance to Federal agencies in demonstrating conformity.

Under the General Conformity Rule, a project does not require a conformity determination if the project is exempt, presumed to conform, or if the net increase in annual emissions is less than the de minimis thresholds outlined in the Rule. A NAAQS assessment for NEPA purposes is typically not required for projects that are exempt or presumed to conform under the General Conformity Rule.

During the scoping process FAA consulted US EPA officials having jurisdiction within the study area, Regions 1, 2, and 3 to discuss the nature of the project and analysis of air quality impacts. During the meetings FAA explained to EPA officials that an air quality assessment was not required because the proposed airspace redesign actions were exempt from analysis under the General Conformity Rule as de minimis; the proposed action is not a capacity enhancement project and would not increase the total number of operations at airports in the study area; and the purpose and need for the project includes increasing efficiency and reducing delay which would serve to reduce fuel burn and air pollutant emissions.

EPA officials working with the FAA Office of Airports officials to develop a list of air traffic and airport actions presumed to conform¹⁵ subsequently raised questions about the legal status of the exemption for "air traffic control activities and adopting approach, departure, and en route procedures for aircraft operations." Determining Conformity of General Federal Actions to State or Federal Implementation Plans; Final Rule, 58 Fed. Reg. 63214, 63229, November 30, 1993. EPA staff raised these questions because the

¹⁵ 40 CFR §93.153(f).

exemption for these activities was referenced in the Preamble, but not the final rule.¹⁶ As a result of discussions with EPA staff, after determining that there was adequate supporting data, FAA deemed it prudent to include the activities described in the preamble to the General Conformity Rule above 3,000 feet as a presumed to conform action in the Final Notice that FAA published in the Federal Register, Vol. 72, No. 145, pp. 41565-41580 on July 30, 2007.

To determine whether reduced delays and more efficient flight routes would reduce fuel burn and respond to comments on the DEIS, FAA tasked a consultant to conduct a fuel burn analysis. MITRE's study projected fuel consumption on an average day in 2011 under the Future No Action Alternative, the Preferred Alternative, and the selected project. See Final EIS, Appendix R. The analysis of fuel consumption demonstrated that the selected alternative would result in a reduction in fuel consumption of 194.4 metric tons, compared to the No Action Alternative. This was slightly greater than the Preferred Alternative, which would reduce fuel consumption by 205 metric tons compared to the No Action Alternative. As reduced fuel consumption is directly related to reducing air pollutant emissions, the fuel burn analysis further shows that the selected project is exempt because it would clearly reduce rather than increase emissions.

As discussed in the FEIS, based upon FAA's experience the proposed air traffic procedural changes will not induce growth in air or vehicular traffic or alter the distribution of air or vehicular traffic among airports. Such changes are not likely to change passenger airport preferences based upon ticket cost, airport location, and service to the desired destination.

Based upon the EIS and the clarification in the footnote below regarding regional significance, the proposed airspace redesign alternatives and the selected project are

¹⁶ "Further, EPA believes that Federal actions which are de minimis should not be required by this rule to make an applicability analysis. A different interpretation could result in an extremely wasteful process which generates vast numbers of useless conformity determinations....Therefore, it is not necessary for a Federal agency to document emissions levels for a de minimis action. Actions that a Federal agency recognizes as clearly de minimis, such as actions that do not cause an increase in emissions, do not require positive conformity determination. ...to illustrate and clarify several de minimis exemptions are listed in 51.853(c)(2). There are too many Federal actions that are de minimis to completely list in either the rule or this preamble. In addition to the list in the rule, the EPA believes that the following actions are illustrative of de minimis actions: ... (2) Air traffic control activities and adopting approach, departure, and enroute procedures for air operations." Determining Conformity of General Federal Actions to State or Federal Implementation Plans; Final Rule, 58 Fed. Reg. 63214, 63229, November 30, 1993.

either exempt or presumed to conform under the General Conformity Rule.¹⁷ As such, a detailed assessment under NEPA and a positive conformity determination under the Clean Air Act are not required. The selected project will not cause a new violation of the NAAQS, worsen an existing violation, or delay meeting the standards of the carbon monoxide, ozone, sulfur dioxide, and particulate matter NAAQS in the six states within the Study Area.¹⁸ Moreover, because the selected project would reduce fuel burn compared to the Future No Action Alternative it would also reduce emissions of carbon dioxide and other greenhouse gases.

9. Natural Resources and Energy Supply

Order 1050.1E calls for major federal actions to be examined to identify whether the action would have a measurable effect on local supplies of energy or natural resources.

Neither the Future No Action alternative nor the selected project would involve construction or modification of a facility, thus the selected project would not involve an irretrievable commitment of natural resources. Additionally, as demonstrated in the fuel burn analysis, FEIS Appendix R, the selected project is expected to result in a decrease in the use of aviation fuel of approximately 66,840 gallons per day.

10. Construction Impacts

The selected project will not involve any construction activity and thus will have no construction impacts.

¹⁷ The Final FAA Notice Federal Presumed to Conform Actions deferred action on the aspect of its Draft Notice relating to regional significance of presumed to conform actions based upon consultation with US EPA. However, the reasoning in the FAA's Air Quality Handbook cited in the Draft Notice indicates that these emissions would not be regionally significant under 40 CFR §93.153(i). Even assuming, without conceding, that the proposed airspace redesign alternatives and the selected project cause a de minimis increase in emissions, they would not represent 10 percent or more of the total emissions of these pollutants in any area. The highest de minimis threshold level for the four pollutants of concern in the study area (CO, ozone, SO₂, and PM_{2.5} and PM₁₀) is 100 tons per year. The total emissions inventories for the relevant areas all exceed 1,000 tons per year for these four pollutants.

¹⁸ The study area includes the entire state of New Jersey and portions of Connecticut, Delaware, New York, and Pennsylvania. The geographic areas within the Study area that do not meet the National Ambient Air Quality Standards (i.e. non-attainment areas) or that were non-attainment and re-designated as attainment (i.e. maintenance areas) are discussed in Chapter 3 of the EIS. See, FEIS Tables 3.20-3.22 and Figures 3.20-3.22. The study area includes areas designated as maintenance for carbon monoxide (CO) and non-attainment for three other pollutants: ozone (8 hour standard), sulfur dioxide (SO₂), and particulate matter (PM₁₀ and PM_{2.5}). No portion of the Study area is non-attainment or maintenance for nitrogen dioxide (NO₂) or lead (Pb).

11. Farmlands

The selected project will not involve any physical ground disturbance and will have no impacts on prime or unique farmland.

12. Coastal Resources

A. Coastal Zone Management

The states of Connecticut, Delaware, New Jersey, New York, and Pennsylvania have initiated coastal zone management programs (CMZP). Because there will be no impact to surface resources, the selected project will not have an impact on the CMZP for Connecticut, Delaware, New Jersey, New York, and Pennsylvania.

At the request of the state of Delaware, federal consistency determinations were prepared in accordance with each state's CMZP. Delaware concurred in the consistency determination. Connecticut, Delaware, New Jersey, New York, and Pennsylvania did not respond to the consistency determination for its state. The FAA's consistency determinations can be found in Appendix K of the Final EIS.

B. Coastal Barriers

The selected project will not result in the development or physical alteration of facilities that would adversely affect resources protected in the Coastal Barrier Resource System.

13. Water Quality

The selected project will have no impacts to water quality because it does not involve the construction or physical alteration of facilities.

14. Wetlands

There will be no impacts to wetlands as a result of the selected project because it does not involve the construction or physical alteration of facilities.

15. Floodplains and Floodways

The selected project will not involve in the construction or physical alteration of facilities and would have no impact on Floodplains and Floodways.

16. Hazardous Materials, Pollution Prevention and Solid Waste

A. Hazardous Materials

There will be no ground disturbances as a result of the selected project therefore it will not result in the disturbance of materials identified as a substance capable of posing an unreasonable risk to health, safety, and property. Moreover, the selected project is not forecast to increase the level of aircraft operations in the study area over the Future No Action alternative. As a result, the selected project will not result in an increase in the generation of materials identified as a substance capable of posing an unreasonable risk to health, safety, and property.

B. Pollution Prevention

The selected project will increase the efficiency of the airspace, result in more direct routing, and decrease the use of fuel by 205 metric tons per average day. As a result the selected project will tend to decrease pollution in the study area.

C. Solid Waste

The selected project will not result in the long-term generation of municipal solid waste because it will not involve construction or the physical alteration of facilities.

17. Cumulative Impacts

A. Projects

CEQ defines cumulative impacts are the incremental impacts of the action when added to other past, present, and reasonably foreseeable future actions regardless of the agency undertaking the actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. 40 C.F.R. §1508.7.

In analyzing the possible cumulative impacts of the Airspace Redesign project, FAA considered potential projects proposed in or near the study area. Project data was gathered from FAA, state DOT websites, Comprehensive Land Use Plans and other area and local plans. Because the impacts from the selected project were either noise or noise related, only those proposed projects that had the potential for cumulative noise impacts were considered. Four projects were determined to have the potential for cumulative noise impacts: Runway 17/35 Extension at PHL, Capacity Enhancement Program (CEP) at PHL, Part 150 Study at Bradley International Airport (BDL); and Board authorization for the Port Authority of New York and New Jersey (PANYNJ) to acquire the lease for Stewart International Airport (SFV).

The Runway 17/35 Extension at PHL is underway and is expected to be operational by early 2009. The Final EIS for the runway extension project indicates that the runway extension is expected to result in only a very minimal change in the noise pattern around PHL. Additionally, the runway extension project will not increase capacity at Philadelphia International. Therefore significant cumulative impacts are not expected.

The purpose of the CEP at PHL is to increase the airfield capacity of Philadelphia International. The need for increased airfield capacity at Philadelphia International is independent of the selected project. While the CEP has the potential for cumulative impacts with the selected project, there has been no determination of the reasonable alternatives for the project and there is insufficient information to evaluate cumulative impacts at this time, especially as they relate to noise. The FAA is preparing an EIS for the CEP project, which will include a consideration of the selected project.

A Part 150 Study was developed for Bradley International which included a noise compatibility program involving airport-specific noise abatement measures. The selected project will not disturb the noise abatement measures resulting from the Bradley International Part 150 study. The noise compatibility program will have the effect of decreasing noise in the vicinity of Bradley International, and thus is not likely to have significant negative cumulative impacts.

In January 2007, the PANYNJ's Board of Commissioners authorized it to purchase the operating lease to SFW. The intention in the PANYNJ acquiring Stewart was to use it as a fourth airport for the New York/New Jersey Metropolitan Area, providing relief for the three major area airports in the form of delay reductions, and to prepare for inevitable population and passenger growth. As of July 2007, the PANYNJ was still in negotiations to acquire the lease. Even if the PANYNJ is successful in acquiring Stewart, it is unclear whether airlines would be willing to operate at Stewart, especially in light of a recent announcement by American Airlines, the last scheduled passenger air carrier with service at Stewart, that it was ceasing service to the airport. This proposal is speculative and not reasonably foreseeable, thus was not considered in the evaluation of cumulative impacts.

The FAA also considered other airspace redesign projects in evaluating the potential for cumulative impacts. The FAA has issued RODs for airspace redesign projects for the Chicago Terminal Area (CTAP), and the Potomac Consolidated TRACON Airspace Redesign after completion of an EIS for each project. There was no overlap in the study areas for each of the projects with the study area of the selected project, and the CEP and Potomac projects will not induce growth or increase capacity. The selected project will not result in significant cumulative impacts in combination with these projects.

The FAA is currently completing an Environmental Assessment (EA) for the Midwest Airspace Enhancement Airspace Redesign in the Cleveland/Detroit Metropolitan Areas. The study area for this project does not overlap the study area for the selected project and will not induce growth or increase capacity. No significant cumulative impacts will result from the selected project in combination with this project.

B. Ambient Comparison

FAA also looked at the potential for cumulative noise impacts by considering total noise, ambient noise, and aircraft noise. Noise measurement data, presented in Final EIS Appendix D, was analyzed in conjunction with the noise modeling computations for each noise measurement sites in the study area. Such an analysis permitted FAA to consider

the contribution of aircraft noise, including traffic operating under Visual Flight Rules, to the total noise at each site. This type of analysis can only be conducted specific to each noise measurement location, however it does provide insights into how the selected project contributes to the noise in the area.

Measured noise levels at each of the 18 noise measurement sites contains contributions from all noise sources, including both aircraft and non-aircraft sources. After completing the analysis, the details of which can be found in Section 4.18.2 of the Final EIS, it was clear that the changes in the total noise environment as a result of the selected project would be very small in the context of the total noise environment for locations that are not situated very near a major airport. This analysis supports the FAA's determination that there are no significant cumulative impacts as a result of the selected project in combination with other past, present, or reasonably foreseeable future actions.

VII. Public and Agency Involvement

The FAA followed NEPA guidelines and involved the public and other agencies in the impact assessment process. The public and agencies were given the opportunity to assist in determining the scope of issues to be addressed in this EIS during the informal pre-scoping and formal scoping period. After the scoping meetings, the FAA held a number of agency meetings, distributed newsletters, and created a website to educate, inform, and receive feedback from concerned citizens and organizations.

The pre-scoping process included a series of airspace redesign workshops. Thirty-one workshops were held throughout the Study Area between September 22, 1999, and February 3, 2000. A total of 1,174 people attended the workshops and 712 comments were received.

The formal scoping period was January 22, 2001 through June 29, 2001. The scoping process consisted of 28 public meetings and three agency meetings held in various locations throughout the Study Area. A total of 1,031 people attended the scoping meetings and 901 comments were received.

In addition to formal scoping meetings, the FAA met with agencies with jurisdiction or special knowledge relative to the Airspace Redesign project on an as needed basis. Typically, each meeting consisted of introductions, a slide show presentation, and a video on the NY/NJ/PHL Metropolitan Airspace Redesign project. The agencies were encouraged to share their concerns or comments regarding the Airspace Redesign. The agency comments and concerns were used by the FAA in assembling the materials needed for the Draft EIS.

Throughout the development of the EIS, the FAA consulted with interested agencies and organizations. Table ES.7 of the Final EIS provides a sampling of the agencies and organizations consulted. (See Appendices L and M for additional information regarding agency consultation.) Periodic briefings were also given to members of Congress, the New Jersey and Delaware Congressional delegations, and various Governors' offices.

The Draft EIS was distributed to interested federal, state, and local agencies, and citizens for review and comment. (See Chapter Nine for a comprehensive list.) Public information meetings were held for the Draft EIS from February 2006 through May 2006. On February 16, 2006 emails were sent to over 580 residents listing the specific meeting locations and on February 24, 2006 postcards were sent to over 3,200 residents with specific meeting locations. Each meeting was publicized through multiple local newspapers and radio stations. The public meeting process consisted of 30 meetings held in various locations throughout the Study Area. A total of 1,166 people attended the public meetings, and a total of 321 written and oral comments were received. The FAA reviewed and responded to all comments received during the comment period.

On April 6, 2007, the FAA published its Noise Mitigation Report, providing detailed information on mitigation measures for its Preferred Alternative. FAA informed the public of its availability through the FAA website and provided copies of the report to 71 libraries within the Study Area. FAA conducted seven public information meetings to discuss the Preferred Alternative and the proposed mitigation measures. The FAA accepted comments on the Noise Mitigation Report through May 11, 2007. Comments were also accepted at the Mitigation public information meetings held in June. Over 2,200 people attended the meetings, and approximately 1,700 written and oral comments were received.

The FAA engaged in several other initiatives to educate and involve the public in the Airspace Redesign Project. One of the primary initiatives was the project website. The project website was established in 2002 and provided both important project related information and the opportunity to submit comments to the FAA. Another initiative was the video format that was used to explain various stages throughout the study. Volume 4 of the video series specifically outlines noise abatement strategies and identifies the Preferred Alternative.

Although the public comment period had closed, at the request of Congressman Eliot Engle, FAA agreed to attend a meeting held in Rockland County, New York on July 30, 2007 to respond to questions and hear the concerns raised by citizens. Approximately one thousand people attended the meeting. A transcript of the meeting was taken by Rockland County and is posted on the project web site at: www.faa.gov/nynjphl_airspace_redesign. A large majority of the people expressed a desire for FAA to adopt the No Action Alternative. Others expressed an interest in moving the arrival flight track which passes over Rockland County further to the west between 3 to 5 miles. Questions raised included whether FAA could increase the altitude of the flight tracks over Rockland County. One inquiry that was raised was whether the FAA could include a stipulation in the FAA's Record of Decision requiring commercial aircraft using the approach track to EWR be Stage 4 compliant by a specified year. In addition, there were a number of quality of life concerns. The comments at the Rockland County meetings were consistent with the comments received at the other meetings. These comments did not change the outcome of our decision.

VIII. Comments on the FEIS

The FAA received six comment letters on the FEIS. Although not required, the FAA reviewed the comments and to the extent the commenter raised a new issue, the FAA herein provides a response.

Mr. Tim Stull, Manager of Air Traffic Systems at United Parcel Post (UPS)

EWR Night-time Ocean Routing would cause a significant operational burden to UPS, likely cause an increase in emissions over parts of Staten ilans area and add significant complexity to the New York Metro Air Traffic Area, increase flight time for departures which increase costs and potential for significant down-line disruption to out nework.

The commenter is correct that nighttime ocean routing will likely increase flight time for departures, fuel burn, and emissions and will require greater sophistication in traffic management. . The increase in demand at JFK since the operational analysis of this mitigation measure was completed has changed in the operating environment. Appendix O of the Final EIS states, “Since there are so few JFK flights affected during the nighttime hours between 0230 and 1000 GMT (Greenwich Mean Time), [night-time ocean routing] would not have an impact on the operations.” This is no longer a completely accurate description of the night-time operations at JFK. Bad weather and volume during the day push JFK arrivals late into the night. On 32 days in June and July, JFK was accepting arriving aircraft at a rate of 30 per hour until midnight (0400 GMT). On 15 days, that rate continued until 1 AM (0500 GMT). These arrival rates are not compatible with ocean routing from EWR, since when the over-water airspace is already occupied by JFK arrivals, it is very inefficient to use it for crossing flows of EWR departures. In this operating environment, predictability also suffers. It will frequently not be known until the evening whether the ocean route is safe or not on any given night, so the dispatchers will not know in advance whether to plan for the extra flying time or not. As to increased fuel consumption, FEIS Appendix R shows that night-time ocean routing causes the fleet to burn (on average) seven metric tons per day of extra fuel. This reduces the fuel-consumption benefit of the preferred alternative by some 3.5%. The FAA will carefully monitor traffic levels at JFK after we implement this mitigation measure to determine whether there are new circumstances that make it operationally infeasible. If it is necessary to revise or eliminate this measure then we will reevaluate the FEIS, undertake appropriate environmental review, and amend this ROD.

Kroposki

Mr. Michael Kroposki, Esq. makes five points:

- 1) The acquisition of Stewart International Airport by the Port Authority means that future demand will be directed there. Traffic at EWR will not grow high enough to make redesigned airspace beneficial.*

Stewart International Airport is far from New York City. History shows that when a new airport farther from the population center is opened, it takes decades for traffic to build to levels that rival the old, close-in airport, even when laws are passed restricting use of the old airport. Examples are Dulles International and National Airport in Washington, and

JFK and LaGuardia in New York. In Dallas, when Dallas-Ft. Worth International Airport opened, Love Field was scheduled to be closed. Despite this, demand for close-in air service remained high enough that, thirty years later, Love Field is still an important airport, handling two-thirds as much traffic as LGA. It can not be assumed that the availability of Stewart will reduce demand at EWR in the foreseeable future.

- 2) *The forecast levels of traffic at EWR are too high. Realistic future traffic levels will be low enough that the delay savings in the Preferred Alternative will not be worth the extra mileage that aircraft must fly.*

The forecast levels of traffic for EWR used in the operational analysis were 1575 arrivals and departures on the 90th percentile day in 2006 and 1634 on the 90th percentile day in 2011. It is important to compare these numbers to high-traffic days, not to monthly or yearly totals. According to the FAA's official traffic reporting system, the Operations Network (or "OPSNET"), on the 90th percentile day of July 2006 EWR worked 1572 operations. The forecast was right on. The comparable number for July 2007 was 1554, less than 2% below the forecast. It is correct that traffic at EWR has effectively leveled off, but it has leveled off at the forecast level. The forecast growth in demand between 2006 and 2011 can not be refuted by pointing to counts of traffic actually handled, since the traffic actually handled is limited by the inefficiency of the current system. EWR was not forecast to be able to run dual arrivals in 2006, so actual counts match the forecast fairly well. Without dual arrivals, actual traffic at EWR may remain at the current plateau (with small increases for improved technology), but unmet demand will continue to accumulate, dragging down the local economy. The 3-4% increase anticipated in the 90th percentile day in this study is a reasonable and prudent assumption.

- 3) *The 2011 forecast is not far enough in the future to satisfy the requirements of a five-year horizon for future traffic.*

This assertion seems to contradict the second point. If the traffic forecasts are too high for 2011, then they are certainly on target for some year after 2011. The increase in traffic between 2011 and 2012 will not be great enough to change the qualitative conclusions of this study, so the study remains valid.

- 4) *The forecasts are too high because future-year forecasts are based on an assumption of good weather on all days. A substantial portion of the delay savings can not be realized, because the airport is sometimes closed due to severe weather.*

It is not the purpose of an airspace redesign to increase efficiency at an airport that is closed by thunderstorms. The efficiency of the airspace design is most important on high-traffic days. When annualized benefit numbers are quoted, they include the effect of days when severe weather limits the traffic the modeled airports can handle.

- 5) *Given that the dual arrivals at EWR are what necessitates the realignment of LGA traffic that is his particular concern, the LGA realignment should not be implemented until such time as EWR traffic has grown to require it.*

This is a valid point, and is well taken. As indicated above, EWR traffic has already grown to a point where dual arrivals would be a benefit to users of the airspace and to the local economy.

New Jersey Coalition Against Aircraft Noise (NJCAAN)

The letter from NJCAAN makes three points, since most of their cited sources discuss various techniques of demand management. First, the study did not include demand management, which can reduce delays more effectively than an airspace redesign. Second, that the Integrated Noise Model has been shown to underestimate noise from several types of aircraft, so the noise estimates in the study are incorrect. Third, that the increased flying distances in the Preferred Alternative will increase fuel consumption to a point that the fuel savings from decreased delay will be more than offset, and the result will be increased emissions from aircraft engines.

1) Demand Management obviates the need for airspace redesign.

In Appendix Q, comments on demand management received the response that the FAA did not include demand management as an alternative because “Changing access to the airport is the responsibility of the airport proprietor. The airport proprietor is unlikely to force its customers to operate in a manner that seems to them less profitable.” The Port Authority of New York and New Jersey appears much closer to a demand management program in August 2007 than when Appendix Q was written, but the fundamental fact remains true: An airport operator is unlikely to let airport capacity go to waste. A change to larger aircraft will absorb the increase in passenger demand, but will not reduce the number of operations. For reasons stated above in the responses to Mr. Kroposki, the opening of Stewart International Airport is unlikely to affect EWR operations in the forecast time frame.

The INM underestimates aircraft noise.

Noise modeling with the INM and NIRS necessarily makes simplifying assumptions. The cited research shows that, under atmospheric conditions that cause the least attenuation of noise from aircraft, the INM underestimates single-event noise levels from Boeing 767-300 and 737-400 aircraft. The INM is almost exact for B747-400, and has some overestimates and some underestimates for the A320-111. This study was conducted in accordance with the techniques set out in FAA Order 1050.1E, which mandates the use of DNL estimates calculated by INM and NIRS for noise studies, and sets thresholds for reportable noise changes. The thresholds are defined in terms of INM and NIRS results, not in terms of measured sound levels. Therefore, a systematic bias in the INM will not affect the validity of the study, since the same bias is present in the measurements and in the thresholds against which they are compared. The differences between the estimated noise levels and the thresholds will be correct.

The Preferred Alternative will increase fuel consumption.

The Preferred Alternative requires some extra flying distance in order to avoid congestion, much the same way a freeway bypasses the traffic lights in town. When traffic levels are low, it is not worth it to take the freeway. However, as mentioned above, traffic levels in the summer of 2007 are already high enough that the extra mileage would be worth flying to reduce delays, and total fuel consumption will decrease.

Rockland County

The letter from the Chair of the Rockland County Legislature makes five points.

- 1) *The Noise Mitigation Analysis in Appendix P does not compare the mitigation of the Preferred Alternative with Future No Action, but only with the Preferred Alternative without mitigation.*

This is incorrect. Tables 4, 5, 8, 9, 11, 12, 13, and 14, and Figures 4, 5, 12, 13, 18, 19, 23, 24, 26, 27, 29, and 32 of Appendix P contain this information.

- 2) *The Modifications Alternative should be investigated, since “This would eliminate the “controversial Newark Runway 22 flight path over Rockland”.*

The Modifications Alternative was thoroughly investigated in Appendices C and E of the EIS. Its benefits to the aviation system were found to be insufficient to make it the Preferred Alternative.

- 3) *Does the FAA have hard evidence on how 600 flights per day over Rockland County will affect air quality?*

Aircraft emissions affect air quality in two different ways. First, aircraft on the ground and at altitudes below the so-called “mixing layer” (usually about 1500-2000 feet above ground level) emit exhaust that behaves like car exhaust. It stays in the vicinity where it is generated, and can pollute the air near the airport. These low-altitude fuel emissions are reduced by the Preferred Alternative, but this is irrelevant to Rockland County, since the aircraft never come low enough. Above the mixing layer, winds blow aircraft emissions around freely, so the effect is not localized. These emissions could affect Rockland County, as well as all other counties in the area. The fuel burn analysis in Appendix R shows that these emissions will decrease under the Preferred Alternative.

- 4) *How will flights over Rockland County, and the attendant risk of an aircraft disaster, affect the quality of the water in their aquifer?*

Flights over Rockland County are high enough that normal operations will not affect aquifers, which are underground. An aircraft crash could, as a tertiary effect, cause a small amount of toxins to get into the ground, which may affect an aquifer. The FAA is dedicated to reducing aircraft disasters as far as is humanly possible.

- 5) *“Increased airplane noise will have a negative effect on the enjoyment of our open spaces as well as a negative effect on the fauna of our parks.”*

The noise exposures in Rockland County under the Preferred Alternative, are higher than in the Future No Action Alternative, but they are at the bottom of the thresholds set in Federal regulations. Those thresholds were set by considering outdoor enjoyment, among other factors. When mitigation measures such as Continuous-Descent Approaches are included, Rockland County noise exposures fall below the thresholds, and are not forecast to cause such negative effects.

Congressman Eliot L. Engel, dated 8/31/07

Comments noted. The points expressed in Congressman Eliot Engel's letter have been addressed individually in the Final EIS.

A transcript of the July 30, 2007 public meeting held at the request of Congressman Eliot Engle is available for review on the project web site at www.faa.gov/nynjphl_airspace_redesign

IX. Agency Findings

In accordance with all applicable laws, the FAA makes the following finding for this selected Project. These findings are based on a careful review of the EIS, appropriate supporting evidence and other relevant portions of the administrative record.

A. Airspace redesign will ensure the safety of aircraft and the efficient use of airspace. (49 U.S.C. 40103(b))

The Federal Aviation Act of 1958 gives the Administrator the authority and responsibility to assign by order or regulation the use of the navigable airspace in order to ensure the safety of aircraft and the efficient use of the airspace. In its effort to continually ensure safety of aircraft and improve the efficiency of transit through the navigable airspace, the FAA will modify aircraft routes and air traffic control procedures used in a 31,180 square miles area encompassing the entire state of New Jersey and portions of four other states: Connecticut, Delaware, New York, and Pennsylvania (the study area). The selected project will more efficiently deliver aircraft to and from airports in the study area, with limited affect on other airports in the study area. This will enhance the efficiency of the navigable airspace, while reducing the future environmental impact of aircraft operations in the NY/NJ/PHL metropolitan area.

In choosing the selected project, the FAA evaluated a full range of alternatives for airspace redesign. The selected alternative will best accomplish the goals of airspace redesign, enhance the safety of aircraft, protect persons and property on the ground, and improve the efficiency of the airspace. Additionally, not only is the selected alternative effective at reducing overall noise exposure as compared to the original Preferred Alternative, but it also reduces noise relative to the Future No Action Airspace Alternative for persons exposed to 65 DNL or greater noise levels in 2011.

B. This project does not involve the use of any historic sites or other properties protected under Department of Transportation Section -303(c), also known as Section 4(f) or convert recreation areas protected under Land and Water Conservation Act Section 6(f).

The selected project does not involve physical development or modification of facilities and therefore results in no actual, physical use of resources protected under DOT Section 4(f) or conversion of properties protected under Land and Water Conservation Act Section 6(f). However, it would change airspace design and flight paths at some high and low altitudes to make more efficient use of existing airspace and airport runways. It has the potential to cause constructive use because it would increase flights over some areas and decrease flights over others, eliminate some flight paths and create some new flight paths.

The determination that the selected project would not cause a use of historic properties listed on or eligible for listing on the National Register of Historic Places is based upon consultation under Section 106 of the National Historic Preservation Act with the State Historic Preservation Officers in each State within the Study area except the Pennsylvania SHPO. All but the Pennsylvania SHPO agreed with the FAA's determination that the selected project would cause no adverse effect on historic properties. The FAA is continuing to consult with the Pennsylvania Historic Preservation Office to resolve concerns about two historic properties and to provide assurances necessary to demonstrate compliance with Section 106 of the National Historic Preservation Act. If necessary, implementation of the components of the selected project will be delayed until that compliance can be assured.

As to constructive use of other 4(f) resources, the analysis in the EIS and the additional analysis included in the ROD in response to DOI comments, confirm that the selected project would not cause increases in noise or other proximity impacts sufficient to impair the value of those resources. The additional analysis in the ROD focused upon parks and historic properties identified as having a quiet setting as a generally recognized purpose and attribute that were projected to experience increases in noise of 3 DNL dB or greater and those having important vistas. As a safeguard the FAA commits in this ROD to apply an adaptive management approach in implementing the selected project. Unlike putting a highway next to a sacred site, these revised flight paths are somewhat flexible and lend themselves to the use of adaptive management techniques.

C. There are no disproportionately high or adverse human or environmental effects from the project on minority or low-income populations. (Executive Order 12898)

The environmental justice analysis in the EIS examined the areas significantly impacted by noise for disproportionately high and adverse human and environmental impacts to low income and minority communities. FEIS Section 5.3.2 indicated that the addition of mitigation measures to the preferred alternative (the selected project) would cause significant noise impacts in a residential area west of PHL in 2006. However, the selected project would eliminate all potentially significant noise impacts by 2011. The

population in the area significantly impacted in 2006 is not 50% minority, nor does the significantly impacted area contain a meaningfully greater percentage of minorities than the surrounding area. The median income in the significantly impacted area is above the poverty level. Additionally, reasonable efforts were made to involve minority and low-income populations in the EIS process. Therefore, the selected project would not cause a disproportionately high and adverse human or environmental impact on minority or low income populations in 2006 or 2011.

D. Clean Air Act, Section 176 (c)(1) Conformity Determination (42 U.S.C.§7506 (c))

The DEIS, FEIS, and this ROD address general conformity requirements under the Clean Air Act. The selected project is an air traffic control activity and adoption of approach, departure, and en route procedures for air operations which is either exempt under 40 CFR 93.153(c) or presumed to conform and not regionally significant under 72 Fed Reg. 41565, July 30 2007. The fuel burn analysis in FEIS Appendix R confirms that the selected project will reduce fuel and emissions in comparison to the No Action Alternative and is therefore exempt from detailed analysis under the Clean Air Act. The analysis indicated that the Preferred Alternative with and without mitigation reduced fuel burn when compared to the Future No Action Alternative.

The NY/NJ/PHL Airspace Redesign would not result in development of physical facilities. Nor will it be likely to induce, change, or redistribute traffic in the airspace or at the airports in the study area. Air and vehicular traffic will continue to be governed by passenger preferences based upon ticket prices, airport location, and service to desired destinations, not the efficiency of air traffic procedures and airspace design. In sum, detailed analysis was not necessary to conclude that the selected project conforms with the purposes of the SIPs in the six States within the Study Area. By its very nature it will not cause a new violation of the NAAQS, worsen an existing violation, or delay meeting the standards of the carbon monoxide, ozone, sulfur dioxide, and particulate matter NAAQS in the six states within the Study Area.

E. The FAA has given this proposal the independent and objective evaluation required by the Council on Environmental Quality (40 CFR §1506.5)

As described in the NY/NJ/PHL Airspace Redesign Final EIS and in Section IV of this ROD [when almost complete, double check that Alternatives are still discussed in Section 3], FAA employed a detailed process in identifying reasonable alternatives that led to identification of a preferred alternative. Throughout, numerous FAA air traffic control specialists provided expertise and guidance on technical matters that arose during the formative steps. The FAA evaluated the technical feasibility of the Proposed Action and determined the alternatives to be evaluated for potential implementation. The proposed NY/NJ/PHL Airspace Redesign represents the best judgment of the FAA in its key area of expertise: the safe, orderly and expeditious movement of air traffic.

Similarly, the FAA has conducted an independent review of the factual assumptions contained in the NY/NJ/PHL Airspace Redesign Final EIS. The process began with a competitive selection of an independent EIS contractor, continued throughout preparation

of a Draft EIS and Final EIS and culminated in this ROD. Individuals from the FAA have devoted many hours to ensure compliance with NEPA and other environmental requirements. The Agency's responses to the public comments on the environmental impacts of the Proposed Action are detailed and comprehensive. This ROD also describes the great care and attention that was paid to public environmental concerns, particularly noise. Accordingly, the independent and objective evaluation called for by the Council on Environmental Quality has been provided.

F. Endangered Species Act, 16 U.S.C. Sections 1531-1544.

Pursuant to the Endangered Species Act (ESA), the FAA contacted the Fish and Wildlife Service and local authorities to compile a list of federally and state endangered and threatened species in the Study Area. This list is set forth in Appendix G of the EIS. In the DEIS and the FEIS, the FAA concluded that the proposed action will not have a significant impact on fish or plants because the proposed action does not require ground disturbance and does not modify critical habitat.

Subsequent to that finding, the FAA agreed to consider the Department of Interior's request to impose flight restrictions over piping plover, bald eagle and roseate tern nesting sites. The piping plover and bald eagle have established nests under the current air traffic situation and have demonstrated a tolerance for such activity. There is no currently no documented nesting sites for the roseate tern.

The FAA has determined that the bald eagle, a species that is no longer listed pursuant to the Endangered Species Act, is also not affected by the selected project. The FAA has also initially determined that the selected project as compared to the no-action alternative does not affect the piping plover or the roseate tern— statement about tern not included in 8/27/07 letter to FWS). The FAA has requested concurrence from the FWS as to its determination and will continue to work with the FWS to address concerns expressed by the FWS. If necessary, implementation of the components of the selected project will be delayed until that compliance can be assured.

G. Responsibilities of Federal Agencies to Protect Migratory Birds (Executive Order 13186).

Executive Order 13186, enacted to further the purposes of the Migratory Bird Treaty Act (MBTA), recognizes the importance of migratory birds. The selected project includes changes in aircraft routes and thus the potential for bird strikes (for migratory and non-migratory) was assessed in the EIS. The Bird Strike Impact Assessment found that various bird categories are already impacted from operations at EWR, HPN, ISP, JFK, LGA and PHL. Each of these airports has a Wildlife Hazard Management Plan and are subject to a 2003 Memorandum of Agreement with the Fish and Wildlife Service and other federal agencies to address aircraft wildlife strikes. The selected project will not increase existing impacts to migratory birds. There are no significant impact to migratory birds from the selected Project.

X. Decision and Order

In the Final EIS, the FAA identified the Integrated Airspace Alternative Variation with ICC as the Preferred Alternative for the NY/NJ/PHL Metropolitan Area Airspace Redesign Project. Among the alternatives studied, the Integrated Airspace Alternative with ICC best meets the purpose and need of the project, which is to improve the efficiency and reliability of the airspace structure and air traffic control system from southern Connecticut to eastern Delaware. Only the Integrated Airspace Alternative with ICC provides for considerable operational benefit. The Integrated Airspace Alternative with ICC is a new concept in airspace design. Currently, the airspace is a layered structure, consisting of en route and terminal airspace. Each layer includes a finite piece of airspace defined by lower and upper altitude limits and defined geographic boundaries. The Integrated Airspace Alternative with ICC would alter the limits of these finite pieces of airspace such that several operational benefits would occur including:

- A reduction in the complexity of the current air traffic system operation in New York / New Jersey / Philadelphia,
- A reduction in delays and the expeditious arrival and departure of aircraft,
- Improved flexibility in routing aircraft,
- A more balanced controller workload, and
- An increase in the FAA's ability to meet system demands.

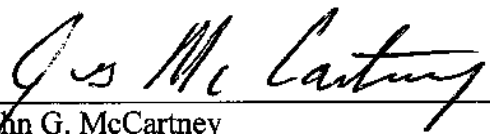
The FAA identified mitigation measures to minimize the potentially significant noise impacts of the preferred alternative, without substantially diminishing its benefits. Benefits of the selected project (the Integrated Airspace Alternative with ICC with mitigation) include:

- An estimated 20% reduction in airport delay, once implementation is complete, compared to the No Action Alternative. ROD Table 2.6
- Air traffic congestion nationwide is expected to cost \$46 billion to the nation's economy in 2010. This includes costs to airlines and passengers, loss of service to people who wish to travel, and over 200,000 lost jobs in aviation and other industries. NY/NJ/PHL airspace will handle 15-20% of all the air traffic in the nation in 2011, so the inefficiencies addressed here could yield benefits to air carriers, passengers, and local businesses of \$7 billion to \$9 billion in 2011.
- Projected reduction in fuel consumption and emissions, including carbon dioxide and other greenhouse gas emissions. Once completely implemented, it is expected to reduce annual operating costs (largely fuel consumption) by \$248 million and severe weather delay costs by another \$37 million.
- Reduced noise exposure for more than one half million compared to the No Action Alternative.

Decision

After careful and thorough consideration of the facts contained herein, the undersigned finds that the proposed Federal action is consistent with existing national environmental policies and objectives as set forth in Section 101 (a) of the National Environmental Policies Act of 1969 (NEPA) and that it will not significantly effect the quality of the human environment or otherwise include any condition requiring consultation pursuant to Section 102(2)(C) of NEPA.

Having carefully considered the aviation safety and operational objectives of this action, as well as being properly advised as to the anticipated environmental impacts, under the authority delegated to me by the Administrator of the FAA, I find that the action is reasonably supported, and I, therefore, direct the NY/NJ/PHL metropolitan area airspace redesign be implemented. Implementation of the selected project will begin as soon as practicable after the ROD. Based on information from specialists in the agency, I estimate full implementation of the selected alternative to take five years.


John G. McCartney
Acting Director, Terminal Operations
Eastern Service Area
Federal Aviation Administration

Date: 9/5/07

Right of Appeal: This decision is taken pursuant to 49 U.S.C. §§40101 et seq., and constitutes an order of the Administrator which is subject to review by the Courts of Appeal of the United States in accordance with the provisions of 49 U.S.C. §46110.

Any party seeking to stay the implementation of this ROD must file an application with the FAA prior to seeking judicial relief, as provided in Rule 18(a), Federal Rules of Appellate Procedure.

Appendix A

- Figure 2.1 Future No Action Airspace Alternative – JFK Major Departure Flows
- Figure 2.2 Future No Action Airspace Alternative – JFK Major Arrival Flows
- Figure 2.3 Future No Action Airspace Alternative – LGA Major Departure Flows
- Figure 2.4 Future No Action Airspace Alternative – LGA Major Arrival Flows
- Figure 2.5 Future No Action Airspace Alternative – EWR Major Departure Flows
- Figure 2.6 Future No Action Airspace Alternative – EWR Major Arrival Flows
- Figure 2.7 Future No Action Airspace Alternative – TED Major Departure Flows
- Figure 2.8 Future No Action Airspace Alternative – TEB Major Arrival Flows
- Figure 2.9 Future No Action Airspace Alternative – PHL Major Departure Flows
- Figure 2.10 Future No Action Airspace Alternative – PHL Major Arrival Flows
- Figure 2.24 Integrated Airspace Alternative Variation with ICC- JFK Major Departure Flows
- Figure 2.25 Integrated Airspace Alternative Variation with ICC – JFK Major Arrival Flows
- Figure 2.26 Integrated Airspace Alternative Variation with ICC – LGA Major Departure Flows
- Figure 2.27 Integrated Airspace Alternative Variation with ICC – LGA Major Arrival Flows
- Figure 2.28 Integrated Airspace Alternative Variation with ICC – EWR Major Departure Flows
- Figure 2.29 Integrated Airspace Alternative Variation with ICC – EWR Major Arrival Flows
- Figure 2.30 Integrated Airspace Alternative Variation with ICC – TED Major Departure Flows
- Figure 2.31 Integrated Airspace Alternative Variation with ICC – TEB Major Arrival Flows
- Figure 2.32 Integrated Airspace Alternative Variation with ICC – PHL Major Departure Flows
- Figure 2.33 Integrated Airspace Alternative Variation with ICC – PHL Major Arrival Flows

Appendix B

In Section 5.3.5.1 of the FEIS the FAA committed to conduct further evaluation, in consultation with appropriate federal and state officials, to determine whether predicted noise increases or visual changes over affected areas of the 4(f) resources listed in Table A.1 would result in a constructive use. FAA further indicated that it would include the results of this evaluation and any necessary additional 4(f) analysis and determination in this Record of Decision. The additional analysis is provided below.

Table B.1

4(f) Properties Subject to Additional Noise / Visual Evaluation

4(f) Property	Noise	Visual
<i>Appalachian National Scenic Trail,</i>	X	X
<i>Delaware and Lehigh National Heritage Corridor</i>	X	
<i>Delaware Water Gap National Recreation Area</i>	X	
<u>Home of Franklin D. Roosevelt National Historic Site and the Vanderbilt Mansion National Historic Site</u>		X
<i>Hopewell Furnace National Historic Site,</i>	X	
<i>Upper Delaware Scenic & Recreational River</i>	X	
<i>Weir Farm National Historic Site,</i>	X	
<i>Wallkill River National Wildlife Refuge,</i>	X	
<i>Catskill Park (Big Indian – Beaverkill Range Wilderness Area, Slide Mountain Wilderness Area, Westkill Mountain Wilderness Area).</i>	X	

Additional Noise Evaluation

If any point within one of the subject Section 4(f) properties would experience a change in noise level as a result of the selected Project greater than 3.0 DNL, the FAA conducted further evaluation of the property in consultation with the NPS and New York State Department of Environmental Conservation.

Additional 4(f) Resources To Which Part 150 Guidelines Apply.

Upon additional review, the FAA has determined that a quiet setting does not appear to be a generally recognized feature or attribute of the significance for several of the sites that were identified for further study in the FEIS. These sites are the Hopewell Furnace National Historic Site, Upper Delaware Scenic and Recreational River, and the Delaware and Lehigh Canal National Heritage Corridor.

Hopewell Furnace National Historic Site. The purpose of the Hopewell Furnace National Historic Site is to preserve and interpret iron plantation life and operations, and to enhance public understanding of the American evolution of American iron-making and its impact on the region and the nation. Based on this purpose and the characteristics of the site, the FAA has concluded that for the Hopewell Furnace National Historic Site a

quiet setting is not a generally recognized feature or attribute of this site's significance and therefore the thresholds listed in the Part 150 guidelines apply. The noise exposure levels resulting from the selected project at all the points within the site are 40.0 DNL or less. This is well below the Part 150 noise exposure level compatibility guidelines and 5 decibels lower than the target level for soundproofing the interior of homes. Additionally, since the Hopewell Furnace National Historic Site is a historic property, the finding under Section 106 may be used to determine whether there would be a constructive use. The Hopewell Furnace National Historic Site is outside of the area of potential effect (APE). The boundaries of the APE were determined in consultation with the Pennsylvania SHPO. Therefore, the Hopewell Furnace National Historic Site would not be affected by the selected project.

The FAA has concluded that the selected project would not result in a constructive use of the Hopewell Furnace National Historic Site because the noise exposure levels would be well below the Part 150 compatibility guidelines and the site is located outside of the APE.

Upper Delaware Scenic and Recreational River. The Upper Delaware Scenic and Recreational River's Final River Management Plan (MP) does not discuss noise levels or aircraft overflight. Hunting is permitted on much of the publicly owned land along the Upper Delaware. Additionally, motorboats are allowed on the River. According to the MP residential use, agricultural use and hunting and fishing cabins are considered compatible for all of the river segments. Finally, one of the planning goals of the MP is to "Provide for the continued public use and enjoyment of a full range of recreational activities, as is compatible with the other goals." A quiet setting is not a generally recognized feature or attribute of this site's significance, rather this site appears to be devoted to traditional recreational activities, and pursuant to Order 1050.1E, the Part 150 guidelines should be used to evaluate whether there is a constructive use. The noise exposure levels resulting from the selected project at all the points within the site are 35.0 DNL or less—far below Part 150 compatibility guidelines. Therefore, the change in noise resulting from the selected project would not be a constructive use of Upper Delaware Scenic and Recreational River.

Delaware and Lehigh Canal National Heritage Corridor. The Delaware and Lehigh Canal National Heritage Corridor is more than 150 miles in length and encompasses approximately 100 municipalities. The Management Action Plan for the Delaware and Lehigh Canal National Heritage Corridor and State Heritage Park establishes a framework for stewardship in order to preserve significant historic sites, conserve the natural and cultural environments, as well as provide opportunities for capitalizing on heritage development. The Corridor follows the historic routes of the Lehigh and Susquehanna Railroad, the Lehigh Navigation System, and the Delaware Canal. According to the Management Action Plan, "The Corridor dramatically illustrates both the first steps and the milestones in the social development of young America, the anthracite coal mining era, the Industrial Revolution, the development of systematic canal and rail transportation, and the evolution of natural conservation." Recreational activities include driving tours, tourism, bicycling, canal boat rides, canoeing, white water rafting,

fishing, hiking, hunting, snowmobiling and cross country skiing. The Management Action Plan states, “In addition to the value of the natural resources and open lands of the Corridor for environmental health and habitat for plant and animal species, these resources have superlative recreation value. Natural and recreational resources cover large areas of the Corridor, and accommodate high user demand. At the center of the most densely populated area of the United States, the Corridor provides expansive open spaces and unique recreational to millions of people – opportunities that are nationally significant. The Management Action Plan also discusses promoting appropriate economic development, “A given in promoting tourism and economic development in the Corridor is the concept of ‘synergy’: when the Corridor’s substantial recreational resources are better developed and more, accessible, when its fascinating history and cultural traditions are more visible through improved interpretation, and when the physical and intellectual linkages among its attractions are better developed, the greater potential for sustained economic growth and regeneration. Thus, tourism and economic development become integral inseparable pieces of the whole of the Corridor effort.” Given that many of the recreational activities are not conducive to quiet, that the Management Action Plan includes promoting tourism and economic development, and that much of the historic context is linked to industrial development it appears that a quiet setting is not a generally recognized feature or attribute of this park’s significance. Therefore, pursuant to Order 1050.1E, the Part 150 guidelines should be used to evaluate whether there is a constructive use. The range of noise exposure levels resulting from the selected project at the locations shown on Figures 5.24, 5.25, and 5.26 is 25.3 DNL to 57.3 DNL. This range of noise exposure levels is below Part 150 compatibility guidelines and nearly the same of the ranges of noise exposure levels resulting from the 2006 No Action Airspace Alternative and the 2011 Future No Action Airspace Alternative..

Additionally, since the Delaware and Lehigh Canal National Heritage Corridor is a historic property, the finding under Section 106 may be used to determine whether there would be a constructive use. The Delaware and Lehigh Canal National Heritage Corridor is outside of the area of potential effect (APE). The boundaries of the APE were determined in consultation with the Pennsylvania and New Jersey SHPOs. Therefore, the Delaware and Lehigh Canal National Heritage Corridor would not be affected by the selected project.

The FAA has concluded that the selected project would not result in a constructive use of the Delaware and Lehigh Canal National Heritage Corridor because the noise exposure levels would be below the Part 150 compatibility guidelines and the Corridor is outside the APE.

Lands for which a quiet setting is an attribute of the land.

With respect to the remaining Section 4(f) sites for which a quiet setting is an attribute of the land, a review of the data showed that with the selected project, the aircraft noise exposure levels at the points evaluated would remain within a range of 44.0 DNL at the highest to 15.5 DNL at the lowest. This range in noise level is low to extremely low. A

few illustrations are of value to provide context regarding levels of noise. For example, FHWA has determined that a constructive use would not occur for “Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.” when the project noise does not exceed 57Leq(h).¹⁹ This can be conservatively equated to 43.2 DNL.²⁰ In other words, any location that has an aircraft DNL value of 43.2 DNL or less could not possibly have a peak hour Leq(h) level of greater than 57 dB.

For an additional point of context, FAA sound insulation guidelines are based on the goal of reducing the interior noise level to 45 DNL for residences. Lastly, the EPA Levels Document reported that an annual outdoor noise exposure level of 55 DNL (with a 5 DNL margin of safety) is sufficient to protect public health and welfare from the effects of environmental noise.

Table A.2 compares the medians and ranges of noise exposure levels for the remaining 4(f) sites as a result of the 2006 No Action and 2011 Future No Action Airspace Alternatives as well as the selected project in 2011.²¹

Table B.2
Noise Exposure Level Ranges and Medians at Selected 4(f) Sites

4(f) Site	2006 No Action Airspace Alternative		2011 Future No Action Airspace Alternative		2011 Selected Project	
	Range (DNL)	Median (DNL)	Range (DNL)	Median (DNL)	Range (DNL)	Median (DNL)
Appalachian Trail – Panel 2	21.9 to 37.9	31.3	21.5 to 38.2	31.1	22.6 to 39.2	32.2
Appalachian Trail – Panel 3	17.7 to 43.1	32.5	16.0 to 43.2	33.5	15.5 to 43.9	34.4
Catskill Park – Slide Mountain Wilderness	20.6 to 34.4	28.8	19.4 to 35.7	28.5	27.5 to 37.3	33.4
Catskill Park – Big Indian Wilderness	20.0 to 35.0	30.0	15.9 to 37.1	32.2	20.8 to 37.2	33.2
Catskill Park - Westkill Mountain Wilderness	21.7 to 27.3	24.1	17.7 to 25.6	22.1	26.3 to 36.1	30.2
Delaware Water Gap National Recreation	19.5 to 31.7	23.3	16.0 to 25.6	20.1	16.4 to 38.6	24.6

¹⁹ 23 CFR §771.135 and Table 1 of 23 C.F.R. §772.

²⁰ The criteria are based on the 1-hour Leq (Leq(h)) metric for peak hour traffic. The DNL metric is a 24-hour cumulative noise metric with an added 10 dB penalty for events that occur during nighttime hours. Translating the 1-hr Leq threshold to a 24-hour Leq can be done conservatively (finding the lowest 24-hr threshold level) by assuming that the threshold value (Leq(h) 57 dB) would occur of only one hour during the day and then no noise for the remaining 23 hours of the day. This would result in a 24 hour Leq of 43.2dB. The comparison of DNL values to 24-hour Leq values generally represents a conservative comparison since DNL levels are typically higher than Leq values would be for the same amount of noise.

²¹ When the FAA began the formal NEPA process, the year 2000 was established as the baseline condition for noise modeling. The FAA then estimated the noise levels for 2006 and 2011 utilizing a well recognized and validated noise model called NIRS. For additional information on noise modeling and NIRS see FEIS 3.5 and Appendix E.

Area - North						
Wallkill River National Wildlife Refuge	31.1 to 36.4	34.0	33.6 to 38.2	36.6	38.7 to 44.0	42.1
Weir Farm National Historic Site	34.4 to 34.4	34.4	30.9 to 31.0	31.0	36.4 to 36.5	36.4

Source: Landrum & Brown / Metron Aviation Inc. / HNTB Analysis, 2007.

Appalachian Trail. The ranges of DNL noise exposure levels along the Appalachian Trail are nearly the same for the 2006 No Action Airspace Alternative, the 2011 Future No Action Airspace Alternative and the selected project in 2011. Therefore, the noise environment along the Appalachian Trail does not appear to change as a result of the selected project.

DNL noise values provide a measure of the predicted sound levels from aircraft operations within the scope of the airspace redesign and are independent of the existing ambient, which includes natural and man-made sound sources other than aircraft. Since the more northerly areas of the Appalachian Trail affected by this airspace redesign are likely to experience a mixture of visitor-related and other man-made sounds from nearby communities, the relationship of these existing ambient sound levels to DNL noise exposure levels was also considered.

The 24-hour L_{Aeq} and L_{50} sound levels were used to represent the existing ambient in assessing potential impacts that may result from the airspace redesign. The 24-hour L_{Aeq} is the equivalent average sound level over a 24-hour period. The L_{50} is the sound level exceeded 50 percent of the time, i.e. the median sound level. Because L_{Aeq} is an energy-based metric computed logarithmically (as is DNL), L_{Aeq} values are higher than L_{50} values because their calculation tends to be influenced by higher individual noise levels, whereas the L_{50} simply reports the statistical median.

Ambient sound levels were not available for all sections of the Appalachian Trail, however, ambient sound levels were available for the Great Smoky Mountains National Park, which the Appalachian Trail also traverses.²² Tables A.3 and A.4 show the winter and summer ambient sound levels measured at primarily backcountry locations in Great Smoky Mountains National Park. The first two columns present the 24-hour L_{Aeq} and L_{50} sound levels for the existing ambient, i.e., it includes all sound sources, over an entire 24-hour day. Non-natural sound sources predominantly consisted of visitor and distant road noise according to notes documented by field observers during the measurements. The third column is the estimated daytime *natural* ambient sound level, a statistical median (L_{50}) of all natural sounds, excluding man-made sounds. The FAA considers existing

²² Many parks, particularly those within similar ecosystems have similar physical, biological and meteorological parameters – including land cover, wildlife activity, visitor-use, wind and seasonality. Therefore, it would be expected that their baseline ambient sound levels would also be similar, thus, allowing for the potential transferability of baseline ambient data within large, homogeneous regions of a particular park and possibly between similar regions in other parks. Preliminary analysis comparing ambient data collected at similar sites (i.e., same land cover classes) within Acadia National Park, Glacier National Park, and Great Smoky Mountains National Park show there is some statistical evidence to support the transferability of the ambient data hypothesis. Specifically, data similarities were seen for the deciduous and evergreen forest classifications.

ambient rather than natural ambient for the purposes of NEPA evaluation because the existing ambient more closely represents the existing noise environment.

Comparisons were made between aircraft-based DNL values and the 24-hour L_{Aeq} ambient levels. Using the DNL values is more conservative than computing a 24-hour L_{Aeq} noise exposure for aircraft activity for these comparisons. This is the case because DNL accounts for sound intrusions occurring during the nighttime, by penalizing related events by 10 dB. When L_{Aeq} -based ambient sound levels are compared to aircraft-based DNL values for theselected project, one can readily see that future aircraft noise levels are not expected to exceed existing ambient sound levels in a comparable noise environment.

Table B.3

Baseline Ambient Sound Levels in Great Smoky Mountains National Park - Winter Data

Acoustic Zone	Land Cover	Site Name	Elevation (ft)	# Days Data	24-Hour Overall Sound Levels		Estimated Daytime Natural Ambient
					L _{Aeq} (dBA)	L ₅₀ (dBA)	L ₅₀ (dBA)
Spruce /Evergreen	Evergreen Forest	Mt. Collins	5971	31	42.6	33.0	33.2
Pine-Oak	Mixed Forest	Parson Branch	2236	27	44.4	30.1	26.0
Cove Hardwood	Deciduous Forest	Porters Flat	2357	26	45.2	32.8	33.0
Northern Hardwood	Deciduous Forest	Purchase Knob	4888	26	44.0	29.1	30.8
Cove Hardwood	Deciduous Forest	Bull Head Trail	2687	29	43.8	28.7	29.6
Open Field Grass/ Pasture	Grasslands/ Herbaceous	Cades Cove	1873	32	42.1	33.5	35.0
Northern Hardwood	Deciduous Forest	Noland Divide	5575	28	46.1	35.6	31.5
Median of all sites					44.0	32.8	31.5

Source: John A. Volpe National Transportation Systems Center, 2007 (draft report)

Table B.4

Baseline Ambient Sound Levels in Great Smoky Mountains National Park - Summer Data

Acoustic Zone	Land Cover	Site Name	Elevation (ft)	# Days Data	24-Hour Overall Sound Levels		Estimated Daytime Natural Ambient
					L _{Aeq} (dBA)	L ₅₀ (dBA)	L ₅₀ (dBA)
Spruce /Evergreen	Evergreen Forest	Mt. Collins	5971	29	46.4	29.1	28.0
Pine-Oak	Mixed Forest	Parson Branch	2236	28	51.3	29.1	28.1
Cove Hardwood	Deciduous Forest	Porters Flat	2357	26	50.5	35.9	35.2
Northern Hardwood	Deciduous Forest	Purchase Knob	4888	26	47.8	29.4	30.0
Cove Hardwood	Deciduous Forest	Bull Head Trail	2687	26	49.1	31.6	32.2
Open Field Grass/ Pasture	Grasslands/ Herbaceous	Cades Cove	1873	25	57.1	47.3	26.6
Northern Hardwood	Deciduous Forest	Noland Divide	5575	22	43.9	28.5	27.1
Median of all sites					49.1	29.4	28.1

Source: John A. Volpe National Transportation Systems Center, 2007 (draft report)

In addition to considering the range and median noise exposure levels for the property and comparing the DNL to a reasonable estimate of the ambient noise at the property, the FAA also looked at uses of the Appalachian Trail that involve a quiet setting to determine whether the selected project resulted in a constructive use of the property. In the Study Area, there are approximately 25 three-sided shelters along the Appalachian Trail that protect hikers from the elements and are also used for overnight camping. (See Figures A.1, A.2, A.3 and A.4). Modeled 2006 and 2011 noise levels for the No Action and Future No Action Airspace Alternatives, and the selected project at the shelter locations are presented in Table A.5.

Table B.5
Noise Exposure Levels at the Appalachian National Scenic Trail Shelters

Shelter	2006 No Action Airspace Alternative (DNL)	2011 Future No Action Airspace Alternative (DNL)	2011 Selected project (DNL)
S1	29.0	29.3	26.9
S2	32.7	31.9	30.6
S3	30.1	29.7	29.7
S4	29.1	30.7	31.2
S5	29.5	30.9	32.6
S6	28.5	28.7	27.2
S7	29.2	29.3	27.7
S8	28.6	28.5	27.3
S9	34.6	36.1	35.2
S10	27.9	25.6	34.3
S11	34.8	34.6	36.1
S12	26.2	25.2	31.5
S13	29.5	29.6	30.4
S14	29.3	28.0	28.3
S15	25.8	19.3	17.9
S16	28.7	22.7	25.1
S17	31.4	31.2	35.6
S18	31.3	31.4	37.3
S19	34.8	36.1	42.6
S20	36.4	37.7	42.6
S21	40.6	40.8	38.4
S22	35.5	35.5	32.7
S23	38.7	38.4	32.4
S24	39.2	39.3	28.9
S25	40.7	40.7	21.8

Source: Landrum & Brown / Metron Aviation Inc. / HNTB Analysis, 2007.

As can be seen from the table, the highest noise level at a shelter location in 2006 for the No Action and 2011 Future No Action Airspace Alternatives would be 40.7 DNL and 40.8 DNL respectively. The highest noise level at a shelter location in 2011 with the selected project would be 42.6 DNL. The difference between the No Action Airspace Alternatives and the selected project noise exposure levels would be de minimis; 1.9 and 1.8 DNL. From this data, it is apparent that activities involving a quiet setting would not be compromised by the selected project because locations along the Appalachian Trail used in the same manner would have comparable sound exposure levels.

The FAA has concluded that the selected project would not result in a constructive use of the Appalachian Trail because the noise environment would not be substantially changed by the selected project. This conclusion is further supported by the fact that comparable ambient noise levels are expected to be higher than future aircraft noise levels, and that the noise levels at areas with activities involving a quiet setting are comparable with and without the selected project.

Catskill Park. The Catskill Park including the Catskill Forest Preserve contains land with a wide variety of uses; "...from somewhat remote trail – less mountain peaks and picturesque streams to intensively used camping areas and trails". The Catskill Park State Land Master Plan provides guidelines for uniform protection and management of the Catskill Park based on land classifications. Four basic classifications are used: Wilderness, Wild Forest, Intensive Use and Administrative. The FAA reviewed the characteristics of each of these land classifications and concluded that Part 150 guidelines would be applicable to determine the significance of noise impacts to the Catskill Park with the exception of those areas designated as Wilderness areas. Four Wilderness Areas are within the bounds of the Study Area: Slide Mountain Wilderness, Big Indian Wilderness, Indian Head Wilderness and the Westkill Mountain Wilderness Areas. With the selected project, only the Slide Mountain Wilderness, Big Indian Wilderness, and the Westkill Mountain Wilderness Areas would be exposed to noise levels more than 3.0 DNL higher than the 2011 Future No Action Airspace Alternative. The range of noise exposure levels for the three areas combined would be 15.9 DNL to 37.1 DNL with the 2011 Future No Action Airspace Alternative and 20.8 DNL to 37.3 DNL with the selected project. The ranges of noise exposure levels in the Wilderness Areas are nearly the same for both the Future No Action Airspace Alternative and the selected project in 2011. Therefore, it does not appear that the selected project would change the noise environment in the Wilderness Areas and it is concluded that there would not be a constructive use of the Slide Mountain Wilderness, Big Indian Wilderness, or the Westkill Mountain Wilderness Areas.

Delaware Water Gap National Recreation Area. The general management plan (GMP) for the Delaware Water Gap National Recreation Area (NRA) does not identify quiet or serene aspects. According to the NPS Designation of National Park System Units, "Twelve NRAs in the system are centered on large reservoirs and emphasize water-based recreation. Five other NRAs are located near major population centers. Such urban parks combine scarce open spaces with the preservation of significant historic resources and important natural areas in locations that can provide outdoor recreation for large numbers of people. Motorboat use is allowed on the Delaware River, snowmobile use is permitted on one trail and hunting is permitted in most parts of the recreation area. The GMP discussed three types of camping: developed, group, and primitive backcountry. According to the GMP primitive backcountry camping was to be managed by a permit system. Primitive backcountry camping is characterized as that without comfort facilities. According to the Delaware Water Gap Official Map and Guide, "Primitive campsites are available for through-hikers on the Appalachian Trail and canoeists on extended river trips."

With the exception of the Appalachian Trail (previously evaluated) it is unclear as to whether this site should be considered to have a setting where noise is very low because hunting is permitted throughout the NRA and motor boating is permitted on the Delaware River. However, due to the proximity of the Appalachian Trail, the FAA decided not to rely on the Part 150 guidance to determine whether there would be a constructive use. Noise exposure levels were calculated at multiple points within the Delaware Water Gap NRA. For the purposes of illustrating and discussing the results of the noise analysis, the Recreation Area was divided into two sections; South and North (See Figures 5.28 and 5.29). Noise exposure levels (DNL) for the 2011 Future No Action Alternative and the selected project were compared. For all points located in the southern section the noise level would be lower with the selected project than with the 2011 Future No Action Alternative. For some points in the northern section the difference in noise exposure levels resulting from the selected project as compared to the Future No Action Airspace Alternative would exceed 3 DNL. The ranges of 2006 No Action Airspace alternative noise levels are from 19.5 DNL to 31.7 DNL and from 17.7 DNL to 36.4 DNL for the northern and southern sections respectively. The range of noise levels resulting from the selected project would be from 16.4 DNL to 38.6 DNL and from 15.5 DNL to 31.5 DNL for the northern and southern sections respectively. Since the reason for dividing the Delaware Water Gap NRA into two sections was for the purposes of presenting the results of the analysis and not based on use, it is appropriate to compare the ranges of values for the entire site. The difference between the highest noise exposure levels resulting from the 2006 No Action Airspace Alternative and the selected project would be only 2.2 DNL. Therefore, it does not appear that the selected project would substantially change the noise environment within the Delaware Water Gap NRA.

The relationship of existing ambient sound levels to the DNL noise exposure levels was also considered. Since the Appalachian Trail passes thru the Delaware Water Gap NRA, the same existing ambient values were used for comparison purposes. As a result of the selected project, the highest noise exposure level at the points analyzed in the Delaware Water Gap NRA would be 38.6 DNL. This would be well below a reasonable estimation of the existing ambient 24 hour L_{Aeq} values during both the winter and summer regardless of the acoustic zone.

The FAA has concluded that the selected project would not result in a constructive use of the Delaware Water Gap NRA because the noise environment would not be substantially changed by the selected project and ambient noise levels are expected to be higher than future aircraft noise levels with the selected project.

Wallkill River National Wildlife Refuge (NWR). The ranges of noise exposure levels at the Wallkill River NWR would be 33.6 DNL to 38.2 DNL and 38.7 DNL and 44.0 DNL as a result of the 2011 Future No Action Airspace Alternative and the 2011 selected project respectively. Although the noise exposure levels at the Wallkill River NWR would be higher with the selected project, they remain below the 2006 No Action Airspace Alternative noise exposure levels at the nearby, similarly used Shawangunk Grasslands NWR. These two NWRs are within the same ecosystem and have similar public use activities such as wildlife observation and fishing. The 2006 No Action

Airspace Alternative noise exposure levels for the Shawangunk Grasslands NWR range from 43.4 DNL and 44.6 DNL. Therefore, it is concluded that the selected project would not result in a constructive use as it relates to visitor experience of the Wallkill River NWR.

Although public use including hunting is permitted at the Wallkill River NWR, one of the primary goals in the Draft Comprehensive Conservation Plan and Draft EA for the Wallkill River NWR is to protect and enhance populations of threatened and endangered species. Therefore, the FAA considered the potential for noise increases resulting from the selected Project to impact the threatened and endangered species with habitat in the Wallkill River NWR. According to the NJ Wildlife Action Plan (2-16-07) habitat in this area supports five federally threatened and endangered wildlife species; the Indiana bat, bog turtle, dwarf wedgemussels, Mitchell's satyr (extirpated), and American burying beetle (extirpated). Studies on the effects of noise on wildlife have been conducted predominantly on mammals and birds. Studies of subsonic aircraft disturbances on ungulates (e.g. Pronghorn, bighorn sheep, elk, and mule deer), in both laboratory and field conditions, have shown that effects are transient and of short duration and suggest that the animals habituate to the sounds.²³ Similarly, impacts to raptors and other birds (e.g. waterfowl) from low-level aircraft were found to be brief and insignificant and not detrimental to reproductive success.²⁴ Consequently, the selected Project would not be expected to substantially impair the features or attributes of the Wallkill River NWR related to threatened and endangered species and the FAA concludes that the selected Project would not result in a constructive use of this 4(f) site.

Weir Farm National Historic Site (NHS). The FAA conducted further evaluation of the Weir Farm NHS to determine whether a quiet setting is a generally recognized feature or attribute of the site's significance. A wide range of types of visitor use is identified on the NPS website and in the Weir Farm National Historic Site General Management Plan / Environmental Impact Statement; everything from offering daily visitor landscape and audio tours to providing quiet, uncrowded space for artists. Although it appears that

²³ Sonic Boom/Animal Disturbance Studies on Pronghorn Antelope, Rocky Mountain Elk and Bighorn Sheep, G.W. Workman, T.D. Bunch, J.W. Call., R.C. Evans, L.S. Neilson, and E.M. Rawlings, Prepared for USAF, 1992

The effects of low-altitude jet aircraft on desert ungulates, P.R. Krausman, M.C. Wallace, D.W. DeYoung, M.E. Weisenberger, and C.L. Hayes, International Congress: Noise as a Public Health Problem 6:471-478, 1993.

Effects of Simulated Jet Aircraft Noise on Heart Rate and Behavior of Desert Ungulates, M.E. Weisenberger, P.R. Krausman, M.C. Wallace, D.W. DeYoung, and O.E. Maughan, Journal of Wildlife Management 60:52-61, 1996.

²⁴ Raptors and aircraft., D.G. Smith, D.H. Ellis, and T.H. Johnson, Proceedings of the Southwest Raptor Management Symposium and Workshop, National Wildlife Federation, pages 360-367 in R.L. Glinski, B.G. Pendleton, M.B. Moss, M.N. LeFranc, Jr., B.A. Millsam, and S.W. Hoffman, eds. 1988. Monitoring the Effect of Military Air Operations at Naval Air Station Fallon on the Biota of Nevada, R.E. Lamp, Nevada Department of Wildlife, 1989.

Raptor Responses to Low-Level Military Jets and Sonic Booms., D.H. Ellis, C.H. Ellis, and D.P. Mindell, Environmental Pollution 74:53-83, 1991.

Variation in Breeding Bald Eagle Responses to Jets, Light Planes and Helicopters, T.G. Grubb and W.W. Bowerman, Journal of Raptor Research 31:213-222.

activities already conducted at the site are not conducive to a quiet setting, the FAA decided not to rely on the Part 150 guidance to determine constructive use because the management plan noted the need for artists to have quiet.

The range of noise exposure levels at the Weir Farm NHS would be from 36.4 DNL to 36.5 DNL as a result of the 2011 selected project. When compared to the 2006 No Action Airspace noise exposure level of 34.4 DNL, it does not appear that the selected project would substantially change the noise environment within the Weir Farm NHS.

Additionally, since the Weir Farm NHS is a historic property, the finding under Section 106 may be used to determine whether there would be a constructive use. The Weir Farm NHS is outside of the area of potential effect (APE). The boundaries of the APE were determined in consultation with the Connecticut SHPO. Therefore, the Weir Farm NHS would not be affected by the selected project.

The FAA has concluded that the selected project would not result in a constructive use of the Weir Farm NHS because the selected project would not change the noise environment and the site is not affected as it pertains to Section 106.

Additional Visual Evaluation

Visual impacts would result in a constructive use of a 4(f) site only if the activities, features, or attributes of the site that contribute to its significance or enjoyment are substantially diminished. Normally, visual impacts are a result of construction, development, or demolition. The selected project does not include any of these actions. FHWA regulations defining constructive use include examples of when the proximity of a proposed project to a 4(f) site would substantially diminish aesthetic features or attributes that contribute to the value of a Section 4(f) property. “Examples...would be the location of a proposed transportation facility in such proximity that it obstructs or eliminates the primary views of an architecturally significant historic building, or substantially detracts from the setting of a park or historic site which derives its value in substantial part due to its setting.”

The Proposed Action is limited to changing the aircraft routes. Unlike some other areas of the US, the North Eastern Corridor is heavily populated and is a hub for domestic and international air traffic. The Study Area is already heavily traversed by commercial aircraft. Given the proximity of existing flight tracks to all 4(f) resources in the Study Area, it is unlikely that changes in the location of such tracks would substantially obstruct the primary vista or detract from the setting of 4(f) resources that derive their value in substantial part due to their settings and vistas. However, based on consultation with the NPS, the FAA provided additional information regarding potential airspace changes in the vicinity of outstanding vistas located within the National Parks, National Wildlife Refuges and the Catskill Park Wilderness Areas.

As requested by the NPS, the FAA reviewed the management plans for the parks to determine the locations of important and / or outstanding vistas. It is noted that many management plans referred to scenic qualities in a generalized manner but did not include

the locations of specific outstanding vistas. Visual impacts were primarily considered only for the specifically identified vistas. Thus visual impacts were considered for scenic vistas identified in the following parks: the Appalachian Trail, the Delaware Water Gap National Recreation Area, the Ellis Island National Monument, the Gateway National Recreation Area, the Home of Franklin D. Roosevelt National Historic Site, the Morristown National Historical Park, the Statue of Liberty National Monument, the Vanderbilt Mansion National Historic Site, the Elizabeth A. Morton NWR, the Oyster Bay NWR, the Stewart B. McKinney NWR, the Target Rock NWR, and the Big Indian, Slide Mountain, Indian Head, Westkill Mountain Wilderness Areas in the Catskills Park. For these locations, a summary of the potential airspace changes in the vicinity of the scenic vistas was provided. This information includes number of operations, and the minimum, average and maximum altitudes resulting from the Future No Action Airspace Alternative, Preferred Alternative, and the mitigated Preferred Alternative. Based on this information it was determined in the FEIS that the selected project would not result in a constructive use relative to visual impacts for scenic vistas in the following parks: the Delaware Water Gap National Recreation Area, the Ellis Island National Monument, the Gateway National Recreation Area, the Morristown National Historical Park, the Statue of Liberty National Monument, the Elizabeth A. Morton NWR, the Oyster Bay NWR, the Stewart B. McKinney NWR, the Target Rock NWR, and the Big Indian, Slide Mountain, and Westkill Mountain Wilderness Areas in the Catskills Park.

Additional Analysis

In Section 5.3.5.1 of the FEIS the FAA committed to conduct further evaluation, in consultation with appropriate federal officials, to determine whether visual changes over the Appalachian Trail, the Home of Franklin D. Roosevelt National Historic Site and the Vanderbilt Mansion National Historic Site would result in a constructive use. FAA further indicated that it would include the results of this evaluation and any necessary additional 4(f) analysis and determination in this Record of Decision. The additional analysis is provided below.

Appalachian Trail – Several locations along the Appalachian Trail were identified as having important or outstanding views. Brief descriptions of these viewpoints were included in Table 5.12 and a summary of the airspace changes in the vicinity of these viewpoints was presented in Table 5.13. The airspace changes were reported for groupings of viewpoints.

Viewpoints V1 to V5 - The selected project would result in a nearly 50 percent reduction in daily operations when compared to the No Action Airspace Alternative. The average overflight altitude would decrease from 15,104 feet MSL to 13,363 feet MSL, however, the minimum overflight altitude would be the same for both the No Action Airspace Alternative and the selected project.

Viewpoints V6 to V11 - The selected project would result in a more than doubling of the daily operations when compared to the No Action Airspace Alternative. However, the average overflight altitude would increase from 11,136 feet MSL to 14,423 feet MSL and the minimum altitude would not change.

Viewpoints V12 to V18 - The selected project would result in a more than 50 percent decrease in daily operations when compared to the No Action Airspace Alternative. Additionally, the average overflight altitude would increase from 8,983 feet MSL to 23,672 feet MSL and the minimum overflight altitude would be the same for both the No Action Airspace Alternative and the selected project.

Viewpoints V19 to V20 - The selected project would result in nearly a 50 percent decrease in daily operations when compared to the No Action Airspace Alternative. Additionally, the average overflight altitude would increase from 15,953 feet MSL to 21,452 feet MSL and the minimum overflight altitude would be approximately the same for both the No Action Airspace Alternative and the selected project.

Viewpoints V23 to V30 - The selected project would result in over a 50 percent increase of the daily operations when compared to the No Action Airspace Alternative. However, the average overflight altitude and minimum altitude would not change appreciably.

Viewpoints V31 to V37 - The selected project would result in nearly a doubling of the daily operations when compared to the No Action Airspace Alternative. However, the average overflight altitude would increase from 12,022 feet MSL to 12,859 feet MSL and the minimum altitude would not change.

Viewpoints V38 to V58 - The selected project would result in a small increase of 11 percent in daily operations when compared to the No Action Airspace Alternative. The average overflight altitude would decrease from 14,043 feet MSL to 12,609 feet MSL. With the exception of propeller aircraft tracks above the area between V50 and V51 the minimum overflight altitude would be the same for both the No Action Airspace Alternative and the selected project. The propeller aircraft may be visible from points V48 to V51. The propeller aircraft tracks are at a minimum altitude of 1,922 feet MSL. There is approximately one propeller aircraft operation about every three weeks on these tracks combined.

Viewpoints V59 to V66 - The selected project would result in nearly a 30 percent decrease in daily operations when compared to the No Action Airspace Alternative. The average overflight altitude would decrease from 11,280 feet MSL to 10,807 feet MSL, however, the minimum overflight altitude would be the same for both the No Action Airspace Alternative and the selected project.

Viewpoints V67 to V71 and V79 - The selected project would result in over a 40 percent increase in daily operations when compared to the No Action Airspace Alternative. Additionally, the minimum overflight altitude would not change. The average overflight altitude would decrease from 14,926 feet MSL to 11,865 feet MSL, however, the minimum overflight altitude would be the same for both the No Action Airspace Alternative and the selected project.

Viewpoints V72 to V78 - The selected project would result in a small decrease in daily operations when compared to the No Action Airspace Alternative. The average

overflight altitude would decrease from 21,035 feet MSL to 19,261 feet MSL, however, the minimum overflight altitude would be the same for both the No Action Airspace Alternative and the selected project.

The data shows that minimum altitudes for overflights would be the same with both the No Action Airspace Alternative and the selected pProject for all viewpoints except V19-20, V23-30 and V48-51. At viewpoints V19-20 and V23-30 the minimum altitudes would be appreciably/approximately the same. At viewpoints V48-51 only a minimal number of propeller aircraft would fly at an altitude lower than the No Action Airspace minimum altitude. Operations would decrease at 29 viewpoints (V1-V-5; V12-18; V19-20; V59-66, and V72-78) and increase at 48 viewpoints (V6-11, V23-30, V31-37, V38-V58, V67-71, V79). Currently, given their altitude and transitory nature, commercial aircraft do not obstruct the noted views along the Appalachian Trail. Therefore, since the selected project does not substantially change the minimum altitudes of commercial aircraft, it is concluded that the selected project would not result in an obstruction to the noted views nor would it substantially detract from the setting of the Trail. The visual effects of the airspace changes associated with the selected project are minor and would not substantially diminish the activities, features, or attributes of the Appalachian Trail. The FAA thus concluded that the selected project would not result in a constructive use as it relates to visual impacts.

Home of Franklin D. Roosevelt National Historic Site and the Vanderbilt Mansion National Historic Site – Specific superb views overlooking the Hudson River, the bluffs and mansions across the river, and the Shawangunk Mountains to the west were noted in the both the Home of Franklin D. Roosevelt National Historic Site and the Vanderbilt Mansion National Historic Site Master Plans. According to Table 5.14 the total daily operations over these sites would increase from 109 with the No Action Airspace Alternative to 136 with the selected project. If those operations were spread out over a 24 hour period this would equate to 4.5 operations per hour with the No Action Airspace Alternative and to 5.7 operations per hour with the selected project. The table also shows that the minimum altitude of these operations does not change as a result of selected project. Therefore, because the change in the number of operations would be low and the minimum altitude would remain the same, the visual environment would not substantially change as a result of the selected project. It is thus concluded that the selected project would not result in a constructive use of these resources as it relates to visual impacts because the changes associated with the selected project would not substantially diminish the activities, features, or attributes of either historic site.

APPENDIX C: Agency Coordination

Appendix D – Comment Letters on the FEIS