Revised Draft

Environmental Assessment

Runway 4L/22R Improvements
John F. Kennedy International Airport

Prepared For
U.S. Department of Transportation
Federal Aviation Administration

THE PORT AUTHORITY OF NY & NJ

October 2013

Prepared by
Landrum & Brown

This environmental assessment becomes a Federal document when evaluated, signed, and dated by the Responsible FAA Official.

Responsible FAA Official

Date

Transmittal

To: Interested Parties

Date: October 17, 2013

From: Port Authority of New York & New Jersey

Re: **John F. Kennedy International Airport**
Revised Draft Environmental Assessment
Runway 4L/22R Improvements Project

Enclosed is the Revised Draft Environmental Assessment (EA) for the John F. Kennedy International Airport Runway 4L/22R Improvements project for public review, in accordance with the National Environmental Policy Act (NEPA). This EA is a revision of the Draft EA that initially advertised for public comment in May, 2012. This document responds to all of the requirements of the Federal Aviation Administration (FAA) for preparation of an Environmental Assessment under NEPA. The EA also documents compliance with Federal Executive Order 11988, Floodplain Management.

The John F. Kennedy International Airport ***Runway 4L-22R Improvements project*** includes seven major categories of projects. The categories are the following: (1), Comply with FAA RSA Design Standards (2) Rehabilitate Runway 4L/22R, (3) Widen Runway 4L/22R to Comply with FAA Design Standards (4) Modify Taxiway System, (5) Acquire and Convey Land, Relocate Facilities, and Modify Roadways, (6) Reconfigure Navigational Aid System, and (7) Update Flight Procedures.

The Revised Draft EA is available at the Port Authority's Administration Building at JFK and Port Authority's office in Manhattan (225 Park Avenue South). In addition, an electronic version of the Draft EA is posted on the Port Authority's website http://www.panynj.gov/about/pdf/JFK-Runway-4L-22R-EA.pdf. An announcement will be printed in the *Daily News (Queens edition), Queens Courier (Sun Courier), Queens Chronicle (3 south editions) , South East Queens Press, Queens Times Ledger, Queens Ledger (Leader-Observer), LI Herald (West and North Zone)* newspapers that the Draft EA is available for public review and comment for 30 days.

The 30-day public comment period for the John F. Kennedy International Airport project will begin on **October 17, 2013 and will end on November 18, 2013**. Written comments must be submitted by **November 18, 2013** to the following address:

The Port Authority of NY & NJ
233 Park Avenue South, 9th Floor
New York, NY 10003

Attn: Edward Knoesel

In addition, comments may be emailed to JFK RWYEA @panynj.gov with the subject heading "JFK RWY 4L-22R EA Comment." If you have any questions on this notice please contact Edward Knoesel at (212) 435-3747.

Please note there will be a public information meeting to highlight modifications in the revised EA document. The meeting will be held on October 24, at St. Peter's Church at 7:30p.m in collaboration with Eastern Queens Alliance. The church is located at 224-04 147th Avenue, Queens, New York 11413. Also Assemblywoman Michaelle Solages (22nd District) has indicated her desire that the Port Authority hold an additional public information meeting in her district. Details of this public information meeting will be made public once they are finalized.

Table of Contents

TABLE OF CONTENTS

PAGE

CHAPTER 1 – INTRODUCTION AND BACKGROUND 1-1
1.1 Introduction and Background 1-1
1.2 Airport Description 1-3
1.3 Description of the Proposed Action 1-9
1.4 Document Content and Organization 1-32

CHAPTER 2 – PURPOSE AND NEED 2-1
2.1 Purpose and Need 2-1
2.2 How the Proposed Action Addresses the Needs 2-4
2.3 Implementation Phasing 2-6
2.4 Required Land Use/Environmental Permits 2-6

CHAPTER 3 - ALTERNATIVES 3-1
3.1 Alternatives Considered but Eliminated from Further Consideration 3-3
3.2 Alternatives Selected for Further Evaluation in this EA 3-11

CHAPTER 4 – AFFECTED ENVIRONMENT 4-1
4.1 Environmental Setting 4-1
4.2 Resources Potentially Affected 4-2

CHAPTER 5 – ENVIRONMENTAL CONSEQUENCES 5-1
5.1 Noise 5-1
5.2 Compatible Land Use 5-11
5.3 Socioeconomic Impacts, Environmental Justice, and Children's Environmental Health and Safety Risks 5-15
5.4 Secondary (Induced) Impacts 5-19
5.5 Air Quality 5-19
5.6 Water Quality 5-22
5.7 Department Of Transportation Act: Section 4(f) Resources 5-24
5.8 Historical, Architectural, Archaeological, and Cultural Resources 5-27
5.9 Fish, Wildlife, and Plants 5-28
5.10 Wetlands 5-29
5.11 Floodplains 5-30
5.12 Coastal Resources 5-31
5.13 Wild and Scenic Rivers 5-31
5.14 Farmland 5-32
5.15 Energy Supply and Natural Resources 5-32
5.16 Light Emissions and Visual Impacts 5-33
5.17 Hazardous Materials, Pollution Prevention, and Solid Waste 5-33
5.18 Construction Impacts 5-34
5.19 Other Considerations 5-39
5.20 Cumulative Impacts 5-39
5.21 Adverse Impacts That Cannot be Avoided if the Proposed Action is Implemented 5-52

TABLE OF CONTENTS, (*Continued*)

PAGE

CHAPTER 6 – MITIGATION **6-1**

CHAPTER 7 – PUBLIC INVOLVEMENT **7-1**

CHAPTER 8 – PREPARERS **8-1**

CHAPTER 9 – REFERENCES **9-1**

LIST OF EXHIBITS

PAGE

1-1 Airport Environs 1-5
1-2 Existing Runway 4L/22R 1-7
1-3 Proposed Action 1-11
1-4 Proposed Action – Runway 22R End 1-13
1-5 Proposed Action – Runway 4L End 1-15
1-6 North Boundary Road Access and Proposed Location of PAPD Facilities 1-17
1-7 Property Transfers 1-19
1-8 Proposed Runway 4L/22R Characteristics 1-25
4-1 Land Use 4-5
4-2 Existing (2012/2013) Noise Exposure Contours 4-7
4-3 Floodplains 4-9
4-4 Outfalls 4-15
4-5 Wetlands 4-17
5-1 2015 No-Build/No-Action Noise Exposure Contour 5-3
5-2 2015 Proposed Action Noise Exposure Contour 5-5
5-3 2015 No-Build/No-Action vs. 2015 Proposed Action Noise Exposure Contour 5-7
5-4 2015 Areas of DNL 1.5 dB Increase within the 65 DNL 5-9
B-1 Generalized No-Build/No-Action Aircraft Flight Tracks B-23
B-2 Generalized Proposed Action Aircraft Flight Tracks B-25
B-3 Existing (2012/2013) Noise Exposure Contour B-29
B-4 2015 No-Build/No-Action vs. 2015 Proposed Action Noise Exposure Contour B-31
B-5 2020 No-Build/No-Action vs. 2020 Proposed Action Noise Exposure Contour B-33
B-6 2015 Areas of DNL 1.5 dB Increase within the 65 DNL B-37
B-7 2020 Areas of DNL 1.5 dB Increase within the 65 DNL B-39

TABLE OF CONTENTS, (*Continued*)

LIST OF TABLES

PAGE

1-1 Runway Characteristics 1-23
2-1 Runway 4L/22R Runway Safety Areas (RSA) 2-2
2-2 Runway Use Percentages 2-3
3-1 Alternatives Analysis Summary 3-9
3-2 Runway Characteristics 3-13
5-1 Noise Exposure Area, Housing Units, and Population 5-13
5-2 Noise Impacts to Minority Population Households 5-18
5-3 General Conformity Evaluation 5-20
5-4 Summary of Noise Exposure at Potential Section 4(f) Resources 5-26
5-5 Construction Equipment Noise 5-37
B-1 Runway Characteristics B-3
B-2 Forecast Activity Comparison – Airport Operations B-4
B-3 Average Annual Day Operations by INM Type – 2012/2013, 2015, and 2020 ..... B-6
B-4 Average Annual Day Operations by INM Type, Time of Day, and Stage Length – 2012/2013 ..... B-11
B-5 Average Annual Day Operations by INM Type, Time of Day, and Stage Length – 2015 ..... B-13
B-6 Average Annual Day Operations by INM Type, Time of Day, and Stage Length – 2020 ..... B-15
B-7 Runway Use by INM Type and Time of Day – 2012/2013 ..... B-17
B-8 Runway Use by INM Type and Time of Day – 2015 ..... B-19
B-9 Runway Use by INM Type and Time of Day – 2020 ..... B-21
B-10 Noise Exposure Area, Housing Units, and Population B-35
B-11 Summary of Noise Exposure at Potential Section 4(f) Resources B-41
C-1 National Ambient Air Quality Standards (NAAQS) C-3
C-2 NEPA Compliance for Airport Federal Actions C-4
C-3 *De Minimis* Thresholds C-7
C-4 2012/2013 Total Aircraft Operations C-11
C-5 2015 Total Aircraft Operations C-12
C-6 2020 Total Aircraft Operations C-13
C-7 Annual Ground Access Vehicles C-15
C-8 2012/2013 Existing Conditions Emissions Inventory C-16
C-9 Proposed Action Construction Emissions Inventory C-17
C-10 2015 No-Build/No-Action Emissions Inventory C-18
C-11 2015 Proposed Action Emissions Inventory C-18
C-12 2020 No-Build/No-Action Emissions Inventory C-19
C-13 2020 Proposed Action Emissions Inventory C-19
C-14 General Conformity Evaluation C-20
C-15 Greenhouse Gas Emissions C-22
C-16 Maximum Emissions Dispersion Summary 8-Hour Carbon Monoxide (CO) – USEPA Standard 9 PPM C-24
C-17 Maximum Emissions Dispersion Summary 1-Hour Carbon Monoxide (CO) – USEPA Standard 35 PPM C-24

TABLE OF CONTENTS, (*Continued*)

LIST OF APPENDICES

PAGE

A Agency Coordination A-1
B Noise B-1
C Air Quality C-1
D Comments Received on the May 2012 Draft Environmental Assessment D-1
E Public Involvement E-1

Acronyms

Acronyms

$\mu g/m^3$	micrograms per cubic meter
AC	Advisory Circular
ADG	Aircraft Design Group
ALP	Airport Layout Plan
AOA	Air Operations Area
APU	Auxiliary Power Units
AQCR	Air Quality Control Region
ATA	Air Transport Association
ATCT	Air Traffic Control Tower
BMP	Best Management Practices
BOD	Biological Oxygen Demand
CAA	Clean Air Act (as amended in 1990)
CBD	Central Business District
CBIS	Checked Baggage Inspection System
CEQ	Council on Environmental Quality
CFC	Chlorofluorocarbon
CFR	Code of Federal Regulations
CMAQ	Congestion Mitigation Air Quality
CMP	Coastal Management Program
CNG	Compressed natural gas
CO	Carbon Monoxide
COD	Chemical Oxygen Demand
CSO	Combined Sewer Overflow
CTA	Central Terminal Area
dB	Decibel
DNL	Day-Night Average Sound Level
E.O.	Executive Order
EA	Environmental Assessment
EDMS	Emissions and Dispersion Modeling System
EIS	Environmental Impact Statement
EPA	Environmental Protection Agency
ESA	Endangered Species Act
EWR	Newark Liberty International Airport
FAA	Federal Aviation Administration
FAR	Floor Area Ratio
FEIS	Final Environmental Impact Statement
FEMA	Federal Emergency Management Agency
FIS	Federal Inspection Station
FONSI	Finding of No Significant Impact
FPPA	Farmland Protection Policy Act
GAV	Ground Access Vehicles
GS	Glide Slope
GSE	Ground Support Equipment

Acronyms, (*Continued*)

HDR	High Density Rule
Ldn	Day-Night Average Noise Level
LGA	LaGuardia Airport
LIRR	Long Island Railroad
LOS	Level of Service
LPG	Liquid Propane Gas
LRS	Light Rail System
LTO	Landing and Take-Off Cycle
mg/m3	milligrams per cubic meter
Mgd	million gallons per day
MMBTU	million british thermal units
MW	Megawatts
MWH	megawatts-hours
MTA	Metropolitan Transit Authority
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act of 1969, as amended
NHPA	National Historic Preservation Act
NMFS	National Marine Fisheries Service
NMHC	Non-Methane Hydrocarbons
NO_2	Nitrogen Dioxide
NO_x	Nitrogen Oxides
NRHP	National Register of Historic Places
NYAAQS	New York Ambient Air Quality Standards
NYACQR	New Jersey-New York-Connecticut Interstate Air Quality Control
NYCRR	New York Code of Rules and Regulations
NYCEDC	New York City Economic Development Corporation
NYCDEP	New York City Department of Environmental Protection
NYCT	New York City Transit
NYSDOS	New York State Department of Safety
NYSDEC	New York State Department of Environmental Conservation
NYSDOT	New York State Department of Transportation
NYSHPO	New York State Historic Preservation Office
NYSNHP	New York State Natural Heritage Program
OAG	Official Airline Guide
O&D	Origin and Destination
OST	Office of the Secretary of Transportation
PAPD	Port Authority Police Department
PAPI	Precision Approach Path Indicators
PCA	Pre-Conditioned Air
PCB	Polychlorinated Biphenyl
P.L.	Public Law
$PM_{2.5}$	inhalable particulate matter less than 2.5 microns in diameter
PM_{10}	inhalable particulate matter less than 10 microns in diameter

Acronyms, (*Continued*)

Port Authority	Port Authority of New York and New Jersey
ppm	parts per million
REIL	Runway End Identification Lights
ROD	Record of Decision
RSA	Runway Safety Area
RVR	Runway Visual Range
RVSR	Restricted Service Road
SF	Square Feet
SHPO	Station Historic Preservation Officer
SIP	State Implementation Plan
SO_2	Sulfur Dioxide
SO_x	Sulfur Oxides
SPDES	State Pollution Discharge Elimination System
SWF	Stewart International Airport
SWPPP	Storm Water Pollution Prevention Plan
TEB	Teterboro Airport
TSA	Transportation Security Administration
TSP	Total Suspended Particulate
ULURP	Uniform Land Use Review Procedure
UTB	Unit Terminal Building
USACOE	U.S. Army Corps of Engineers
USEPA	United States Environmental Protection Agency
U.S.C.	U.S. Code
USDOT	United States Department of Transportation
USFWS	U.S. Fish and Wildlife Service
VASI	Visual Approach Slope Indicator
V/C	Volume-to-Capacity
VOC	Volatile Organic Compound
VWE	Van Wyck Expressway
WPCP	Water Pollution Control Plants
WRCRA	Waterfront Revitalization and Coastal Resources Act

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Glossary of Terms

GLOSSARY OF TERMS

Air Traffic – Aircraft operating in the air or on an airport surface, exclusive of loading ramps and parking areas.

Air Traffic Control (ATC) – An FAA service operated for the public, to ensure adequate separation of aircraft and to promote the safe, orderly, and expeditious flow of air traffic. The air traffic facility with jurisdiction over mapped and designated airspace may authorize aircraft to proceed under specified traffic conditions within ***controlled airspace***.

Airport Traffic Control Tower (ATCT) – An ***airport traffic control*** facility established on an airport to provide for safe, orderly, and expeditious flow of air traffic arriving at and departing from an airport, including airport surface areas such as runways and taxiways.

Aircraft Approach Category – A grouping of aircraft based on a speed calculation that takes into account the stall speed in the landing configuration at maximum gross landing weight. An aircraft must fit only one category; its category determines speed minimums that must be observed for various maneuvers. For example, an aircraft which falls in *Category A,* but is circling to land at a speed in excess of 91 knots, must use the approach *Category B* minimums when circling to land. The categories are: *Category A* - Speed less than 91 knots; *Category B* - Speed 91 knots or more but less than 121 knots; *Category C* - Speed 121 knots or more but less than 141 knots; *Category D* - Speed 141 knots or more but less than 166 knots; *Category E*- Speed 166 knots or more. (*See* 14 CFR Part 97.)

Aircraft Classes – For the purposes of wake turbulence aircraft separation minimums, ATC classifies aircraft as (a) *Heavy* - Aircraft capable of takeoff weights of more than 255,000 pounds whether or not they are operating at this weight during a particular phase of flight, (b) *Large* - Aircraft of more than 41,000 pounds, maximum certificated takeoff weight, up to 255,000 pounds, or (c) *Small* - Aircraft of 41,000 pounds or less maximum certificated takeoff weight.

Airport Departure Rate – A dynamic parameter specifying the number of aircraft per hour that can depart from an airport and be accepted into the airspace.

Airport Elevation – The highest point on an airport's usable runways, expressed in feet above ***mean sea level***.

Airport Improvement Program (AIP) – A Federal funding program for airport improvements. AIP is periodically reauthorized by Congress with funding appropriated from the Aviation Trust Fund. Proceeds to the Aviation Trust Fund are derived from excise taxes on airline tickets, aviation fuel, etc.

Airport Layout Plan (ALP) – A scaled drawing of existing and proposed land and facilities necessary for the operation and development of the airport. The ALP shows boundaries and proposed additions to all areas owned or controlled by the airport operator for airport purposes, the location and nature of existing and

proposed action, and the location on the airport of existing and proposed non-aviation areas and improvements thereon.

Airport Operations – The total takeoffs (departures) and landings (arrivals) from an airport.

Airport Surveillance Radar (ASR) – Approach control radar used by air traffic controllers to detect and display an aircraft's position in the airport terminal area. ASR provides range (distance) and ***azimuth*** (direction) information with regard to arriving or departing aircraft.

Air Traffic Service (ATS) Routes – "ATS route," a generic term, includes "VOR Federal airways," "colored Federal airways," "alternate airways," "jet routes," "Military Training Routes," "named routes," and "RNAV routes." The term "ATS route" serves as an overall title for listing the types of routes that comprise the United States route structure.

Airway – A corridor of ***controlled airspace*** whose centerline is established by radio ***navigational aids***. Low altitude airways (between 3,000 and 18,000 feet **Mean Sea Level**) are identified by number with the letter V as a prefix. High altitude airways (above 18,000 feet *Mean Sea Level*) are known as Jet airways and are identified by number with the letter J as a prefix.

Ambient Noise – The total sum of noise from all sources in a given place and time. This is also known as ***Existing Ambient Noise.*** *See* also ***Natural Ambient Noise***.

Approach Light Systems (ALS) – One of various lighting aids that may be installed on an airport. The ALS is a series of lights that provide visual guidance to landing aircraft by radiating light beams in a directional pattern, to assist the pilot when aligning aircraft with the extended runway centerline on ***final approach***.

Attenuation – Acoustical phenomenon whereby ***sound*** energy is reduced between the noise source and the receiver. This energy loss can be attributed to atmospheric conditions, terrain, vegetation, other natural features, and man-made features (e.g., sound insulation).

A-Weighted Sound (dBA) – A system for measuring ***sound*** energy that is designed to represent the response of the human ear to sound. Energy at frequencies more readily detected by the human ear is more heavily weighted in the measurement, while frequencies less well detected are assigned lower weights. A-weighted *sound* measurements are commonly used in studies where the human response to *sound* is the object of the analysis.

Base Flight Segment – A flight path at right angles to the landing runway off its approach end. The base segment normally extends from the downwind segment to the intersection of the extended runway centerline.

Base Leg – A flight path at right angles to the approach of a runway end. It usually extends from the downwind leg to the intersection of the extended runway centerline.

Baseline Condition – The existing condition or conditions prior to future development, which serve as a foundation for analysis.

Capacity – The FAA defines "capacity" as the "throughput rate" of an airport, i.e., the maximum number of aircraft operations that can take place in an hour.

Commuter Aircraft – Generally, aircraft of designated size or seating capacity (usually nine or fewer seats) that support scheduled air transportation services for compensation or hire in air commerce, with a frequency of at least five round trip operations per week on at least one route according to a published flight schedule. Commuter aircraft operate pursuant to a ***Federal Aviation Administration*** air carrier certificate issued under 14 CFR Parts 119 and 135 of the ***Federal Aviation Regulations***. (*See* 14 CFR § 119.3, *Definitions*.) ***Regional Jets*** (RJs) are not "commuters," because they are large transport category aircraft and fall within the *Federal Aviation Administration's* ***air carrier aircraf****t* category.

Contour – *See* ***Noise Contour***.

Controlled Airspace – An airspace of defined dimensions within which ***air traffic control*** service is provided to flights operating under both ***Instrument Flight Rules*** and ***Visual Flight Rules*** in accordance with the airspace classification. Controlled airspace designated as Class *A*, Class *B,* Class *C*, Class *D*, and Class *E*, generally according to altitude above the surface, distance from a primary airport, and volume of aircraft operations. Controlled airspace is also that airspace within which all aircraft operators are subject to certain pilot qualifications, operating rules, and equipment requirements (for specific operating requirements, *see* 14 CFR Part 91).

Crosswind Leg – A flight path at right angles to the approach runway end off of the upwind end.

Day-Night Average Sound Level (DNL) - A noise measure used to describe the average ***sound*** level over a 24-hour period, typically an average day over the course of a year. In computing DNL, an extra weight of ten ***decibels*** is assigned to noise occurring between the hours of 10:00 p.m. and 7:00 a.m. to account for increased annoyance when ambient noise levels are lower and people are trying to sleep. DNL may be determined for individual locations or expressed in noise contours.

dBA - *See A-weighted Sound Level*

Decibel (dB) - ***Sound*** is energy and is measured by its pressure. Because of the enormous range of *sound* pressures to which the human ear is sensitive, the raw sound pressure measurement is converted to the ***decibel*** scale for purposes of description and analysis. The *decibel* scale is logarithmic. A ten-*decibel* increase in *sound* is perceived as a doubling of sound (or twice as loud) by the human ear.

Declared Distances – The distance the airport owner declares available for the airplane's takeoff run, takeoff distance, accelerate-stop distance, and landing distance requirements.

Departure Fix – A departure fix, or so-called departure gate, is a section of airspace used to separate departing from arriving aircraft. This fix determines the initial flight path and direction of the aircraft.

Detailed Study Area - One of the areas identified for detailed environmental investigation as part of this ***Environmental Impact Statement***. This *study area* is smaller in scale than the ***General Study Area*** to accommodate the more detailed analyses. (*See* ***General Study Area.*****)**

Displaced Threshold - A threshold that is located at a point on the runway other than the designated beginning of the runway. The portion of pavement behind a displaced threshold may be available for takeoffs in both directions and landings from the opposite direction.

Distance Measuring Equipment (DME) - A flight instrument that measures the line-of-sight distance of an aircraft from a navigational radio station in ***nautical miles.***

Downwind Approach/Arrival – A flight path parallel to the landing runway in the direction opposite to landing.

Easement - The legal right of one party to use part of the rights of a piece of real estate belonging to another party. This may include, but is not limited to, the rite of passage over, on or below the property; certain air rights above the property, including view rights; and the rights to any specified form of development or activity.

Engine Run-ups – A routine procedure for testing aircraft systems by running one or more engines at a high power setting. Engine run-ups are normally conducted by airline maintenance personnel checking an engine or other on board systems following maintenance.

Enplanements - The number of revenue passengers boarding an aircraft at an airport.

EnRoute Air Traffic Control System - Unlike ***airport traffic control tower*** or terminal radar approach control service, *Air Route Traffic Control Centers* provide enroute service, generally for aircraft on ***Instrument Flight Rules*** flight plans, when these aircraft are operating between departure and destination airports at designated higher altitudes. When equipment, capabilities, and controller workload permit, certain advisory/assistance services may be provided to ***Visual Flight Rules*** aircraft. Enroute airspace is that airspace not delegated to approach control.
Environmental Impact Statement (EIS) - As stated in CEQ regulation 40 CFR § 1508.11, a detailed written statement that complies with NEPA section 102 (42 USC § 4332) by including in every report on proposals for major Federal actions significantly affecting the quality of the human environment, a detailed statement

on (i) environmental impact of the proposed action, (ii) any adverse environmental effects which cannot be avoided should the proposal be implemented, (iii) alternatives to the proposal, (iv) relationship between local short-term uses of the environment and maintenance and enhancement of long-term productivity, and (v) any irreversible and irretrievable commitment of resources involved in the proposed action, should it be implemented.

Equivalent Sound Level (Leq) - The ***A-weighted*** energy average ***sound*** level experienced over a given period of time. The metric is expressed as ten times the log of the total noise energy divided by the number of seconds during the period under consideration.

Federal Aviation Administration (FAA) - The FAA is the Federal agency responsible for insuring the safe and efficient use of the nation's airspace, for fostering civil aeronautics and air commerce, and for supporting the requirements of national defense. The activities required to carry out these responsibilities include: safety regulations, airspace management and the establishment, operation and maintenance of a system of ***air traffic control*** and navigation facilities; research and development in support of the fostering of a national system of airports, promulgation of standards and specifications for civil airports, and administration of Federal grants-in-aid for developing public airports; various joint and cooperative activities with the Department of Defense, and technical assistance (under State Department auspices) to other countries.

Federal Aviation Regulations (FAR) - The body of Federal regulations enacted by the U.S. Secretary of Transportation, under the statutory authority of the Federal Aviation Act and published in Title 14 of the Code of Federal Regulations (CFR).

Final Approach - A flight path in the direction of landing that follows the extended runway centerline. It usually extends from the ***base leg*** to the runway.

Fixed-Base Operator (FBO) - A business located on the airport that provides services such as hangar space, fuel, flight training, repair, and maintenance to airport users.

Fleet Mix - The mix or differing types of aircraft operating in a particular airport environment.

Flight Track Utilization - The use of established routes for arrival and departure by aircraft to and from the runways at the airport.

General Aviation Aircraft – Generally, those U.S. registered civil aircraft which operate for private and noncommercial purposes and whose operations are not governed by 14 CFR Parts 119, 121, 125, or 135 of the ***Federal Aviation Regulations***. General aviation aircraft range from small single-engine propeller aircraft to large ***turbojet*** private aircraft.

General Study Area (GSA) - One of the areas identified for environmental investigation as part of this ***EIS***. This study area is larger in scale than the ***Detailed Study Area.*** (*See* ***Detailed Study Area.***)

Geographic Information Systems (GIS) - An information system that is designed for storing, integrating, manipulating, analyzing, and displaying data referenced by spatial or geographic coordinates.

Glide Slope (GS) - Provides vertical guidance for aircraft during approach and landing. The glide slope consists of the following:

> Electronic components emitting signals which provide vertical guidance by reference to airborne instruments during instrument approaches such as ***Instrument Landing System***, or visual ground aids, such as ***Visual Approach Slope Indicator***, which provide vertical guidance for ***visual flight rules*** approach or for the visual portion of an ***instrument approach*** and landing.

GPS - **Global Positioning System** equipment onboard an aircraft takes advantage of various radio navigation and/or *Global Positioning System* routes to guide the aircraft. A system of satellites used as reference points to enable navigators equipped with GPS receivers to determine their latitude, longitude, and altitude.

Grid Analysis - A type of aircraft noise analysis that evaluates the noise levels at individual points rather than through generation of ***noise contours***.

Ground Effect - Noise ***attenuation*** attributed to absorption or reflection of noise by man-made or natural features on the ground surface.

Hub - An airport that services airlines that have ***hubbing*** operations.

Hubbing - A method of airline scheduling that times the arrival and departure of several aircraft in a close period of time in order to allow the transfer of passengers between different flights of the same airline in order to reach their ultimate destination. Several airlines may conduct hubbing operations at an airport.

Infill - Urban development occurring on vacant lots in substantially developed areas; may also include the redevelopment of areas to a greater density.

Instrument Approach - A series of predetermined maneuvers for the orderly transfer of an aircraft under ***instrument flight rules*** from the beginning of the initial approach to a landing, or to a point from which a landing may be made visually.

Instrument Flight Rules (IFR) - That portion of the ***Federal Aviation Regulations*** (14 CFR Part 91) specifying the procedures to be used by aircraft during flight in ***Instrument Meteorological Conditions.*** These procedures may also be used under visual conditions and provide for ***positive control*** by ***Air Traffic Control***. (*See* also ***Visual Flight Rules)***.

Instrument Landing System (ILS) - An electronic system installed at some airports which helps to guide pilots to runways for landing during periods of limited visibility or adverse weather.

Instrument Meteorological Conditions (IMC) - Weather conditions expressed in terms of visibility, distance from clouds, and cloud ceilings during which all aircraft are required to operate using ***Instrument Flight Rules (IFR)***.

Integrated Noise Model (INM) - A computer model developed, updated and maintained by the ***Federal Aviation Administration*** to predict the noise exposure generated by aircraft ***operations***.

Itinerant Operation - An aircraft flight that ends at an airport different from where the flight began.

Knots - Airspeed measured as the distance in ***nautical miles*** (6,076.1 feet) covered in one hour. (Approximately equal to 1.15 miles per hour.)

Land Use Compatibility - The ability of land uses surrounding the airport to coexist with airport-related activities with minimum conflict.

Landing and Takeoff (LTO) Cycle - The time that an aircraft is in operation at or near an airport. An LTO cycle begins when an aircraft starts its ***final approach*** (arrival) and ends after the aircraft has made its climb-out (departure).

Ldn - *See* ***DNL***. Ldn is used in place of *DNL* in mathematical equations only.

Leq - *See* ***Equivalent Sound Level***.

Local Operation - An aircraft flight that begins and ends at the same airport.

Localizer - The component of an ***Instrument Landing System*** that provides lateral course guidance to the runway.

Loudness - The subjective assessment of the intensity of ***sound***.

Maximum Noise Level (Lmax) - The maximum ***sound*** pressure for a given event adjusted toward the frequency range of human hearing.

Mean Sea Level (MSL) - The average height of the surface of the sea for all stages of the tide; used as a reference for elevations; also called sea level datum.

Military Operations Area - Airspace established to separate or segregate certain non-hazardous military activities from ***Instrument Flight Rules*** traffic and to identify for ***Visual Flight Rules*** traffic where these activities are conducted.

Missed Approach - A maneuver conducted by a pilot when an ***instrument approach*** cannot be completed for landing at an airport. *Instrument approach* procedure charts show the route of flight and altitude that the pilot must follow in this circumstance.

National Airspace System (NAS) - The common network of U.S. airspace, air navigation facilities, equipment, services, airports, or landing areas; aeronautical charts, information, and services; rules, regulations, and procedures; technical information, manpower, and materials, all of which are used in aerial navigation to provide a safe and efficient flying environment.

National Environmental Policy Act of 1969 (NEPA) - The original legislation establishing the environmental review process for proposed Federal actions.

National Pollutant Discharge Elimination System (NPDES) – Federal requirement under the Clean Water Act (CWA) that any discharge of a non-point source of pollution into waters of the United States be in conformance with any established water quality management plan developed under the Clean Water Act.

Nautical Mile - A measure of distance equal to one minute of arc on the earth's surface (6,076.1 feet or 1,852 meters).

Natural Ambient Noise - *Existing Ambient Noise*, minus man made sounds. ***See Ambient Noise* and *Existing Ambient Noise*.**

NAVAIDs (Navigational Aids) - Any facility used by an aircraft for navigation.

Navigational Fix - A geographical position determined by reference to one or more radio navigational aids.

Noise Abatement - A measure or action that minimizes the amount of impact of noise on the environs of an airport. Noise abatement measures include aircraft operating procedures and use or disuse of certain runways or ***flight tracks***.

Noise Contour - A map representing average annual noise levels summarized by lines connecting points of equal noise exposure.

Nondirectional Beacon (NDB) - A beacon transmitting non-directional signals whereby the pilot of an aircraft equipped with direction finding equipment can determine the bearing to and from the station. When the radio beacon is installed in conjunction with the ***Instrument Landing System*** marker, it is normally called a compass locator.

Nonprecision Approach - A standard ***instrument approach*** procedure providing runway alignment but no ***glide slope*** or descent information.

Precision Approach Path Indicator (PAPI) - Provides visual approach slope guidance to aircraft during an approach. It is similar to a ***Visual Approach Slope Indicator*** but provides a sharper transition between the colored indicator lights.
Precision Approach Procedure - A standard ***instrument approach*** procedure in which an electronic ***glide slope***/glide path is provided (e.g., ***Instrument Landing System*** and ***Precision Approach Radar***).

Precision Approach Radar (PAR) - Navigational equipment located on the ground adjacent to the runway, consisting of one antenna, which scans the vertical plane, and a second antenna, which scans the horizontal plane. The PAR provides the controller with a picture of the descending aircraft in ***azimuth***, distance, and elevation, permitting an accurate determination of the aircraft's alignment relative to the runway centerline and the ***glide slope***.

Profile - The position of the aircraft during an approach or departure in terms of altitude above the runway and distance from the runway end.

Propagation - ***Sound*** propagation is the spreading or radiating of sound energy from the noise source. It usually involves a reduction in sound energy with increased distance from the source. Atmospheric conditions, terrain, natural objects, and manmade objects affect sound propagation.

Public Use Airport - An airport open to public use without prior permission, and without restrictions within the physical capabilities of the facility. It may or may not be publicly-owned.

Record of Decision (ROD) - As stated in CEQ regulation 40 CFR § 1505.2, the ***Federal Aviation Administration****'s* findings, explanations, and related justifications after review of a Draft Environmental Assessment or ***Environmental Impact Statement****.* The ROD specifies the environmentally preferred alternative.

Regional Jet - A jet aircraft that falls within the air carrier aircraft category because of size and payload. For use in air commerce, the ***regional jet*** must be operated pursuant to an air carrier certificate pursuant to an air carrier certificate issued under 14 CFR Parts 119 and 121 of the ***Federal Aviation Regulations***. (*See* 14 CFR § 119.3, for Domestic, Flag, and Supplemental operations). *Regional jets* are not operated as commuter aircraft pursuant to 14 CFR Part 135. *Regional jets* are typically jet aircraft, with approximately 35 to 90 seats. The next-generation *regional jet*s are expected to seat 100 passengers.

Retrofitted Aircraft - An aircraft originally certified as ***Stage 2*** that has been modified to meet ***Stage 3*** requirements. This includes both modification of engines or the replacement of engines to meet the ***Stage 3*** standard.

Run-up - A routine procedure for testing aircraft systems by running one or more engines at a high power setting. ***Engine run-ups*** are normally conducted by airline maintenance personnel checking an engine or other on board systems following maintenance.

Runway End Identifier Lights (REIL) - Two synchronized flashing lights, one on each side of the ***runway threshold***, which identify the approach end of the runway.

Runway Protection Zone (RPZ) - An area, trapezoidal in shape and centered about the extended runway centerline, designated to enhance the protection of people and property on the ground. It begins 200 feet (60 M) beyond the end of the area usable for takeoff or landing. The RPZ dimensions are functions of the aircraft, type of operation, and visibility minimums. (Formerly known as the clear zone.)

Runway Safety Area (RSA) - A defined surface surrounding the runway prepared or suitable for reducing the risk or damage to airplanes in the event of an undershoot, overshoot, or excursion from the runway.

Runway Threshold - The beginning of that portion of the runway usable for landing.

Single event - One noise event. For many kinds of analysis, the ***sound*** from single events is expressed using the ***Sound Exposure Level*** metric.

Sound - Sound is the result of vibration in the air. The vibration produces alternating bands of relatively dense and sparse particles of air, spreading outward from the source in the same way as ripples do on water after a stone is thrown into it. The result of the movement is fluctuation in the normal atmospheric pressure or sound waves.

Sound Exposure Level (SEL) - A standardized measure of a ***single (sound) event***, expressed in ***A-weighted decibels***, that takes into account all sound above a specified threshold set at least ten ***decibels*** below the maximum level. All sound energy in the event is integrated over one second.

Special Use Airspace - Airspace of defined dimensions identified by an area on the earth's surface wherein activities must be confined because of their nature and/or wherein limitations may be imposed upon aircraft ***operations***, which are not part of those activities.

Stage 2 Aircraft - Aircraft that meet the noise levels prescribed by ***Federal Aviation Regulations*** *14 CFR* Part 36, which are less stringent than those established for the quieter ***Stage 3*** designation. The Airport Noise and Capacity Act required the phase-out of all Stage 2 aircraft over 75,000 pounds by December 31, 1999, with the potential for case-by-case exceptions through the year 2003.

Stage 3 Aircraft - Aircraft that meet the most stringent noise levels set in ***Federal Aviation Regulations*** *14 CFR* Part 36.

Standard Instrument Departure Procedure (SID) - A planned ***Instrument Flight Rules air traffic control*** departure procedure published for pilot use in graphic and textual form. SIDs provide transition from the terminal to the en route ***air traffic control*** structure.

Statute Mile - A measure of distance equal to 5,280 feet.

Terminal Radar Approach Control (TRACON) - A ***Federal Aviation Administration Air Traffic Control*** Facility which uses radar and two-way communication to provide separation of air traffic within a specified geographic area in the vicinity of one or more airports.

Time Above (TA) - The amount of time that ***sound*** exceeds a given ***decibel*** level during a 24-hour period (e.g., time in minutes that the sound level is above 75 ***decibels***).

Thrust Settings – Settings on an aircraft that control the power applied to the engines.

Traffic Pattern – The traffic flow prescribed for aircraft landing at, taxiing on, or taking off from an airport. The components of a typical traffic pattern are ***upwind leg***, ***crosswind leg***, ***downwind leg***, ***base leg***, and ***final approach***.

Turbojet - An aircraft powered by a jet turbine engine. The term is customarily used in ***air traffic control*** for all aircraft, without propellers, that are powered by variants of jet engines, including turbofans.

Turboprop - Aircraft of this type are typically used by airlines on short routes between two relatively close locations.

Upwind Leg - A flight path parallel to the approach runway in the direction of approach.

Vector - Compass heading instructions issued by ***Air Traffic Control*** in providing navigational guidance by radar.

Very High Frequency Omnidirectional Range (VOR) Station - A ground-based radio navigation aid transmitting signals in all directions. A VOR provides ***azimuth*** guidance to pilots by reception of electronic signals.

Very High Frequency Omnidirectional Range Station with Tactical Air Navigation (VORTAC) - A navigational aid providing ***VOR azimuth*** and ***Tactical Air Navigation distance measuring equipment*** at one site.

Visual Approach - An approach conducted on an ***Instrument Flight Rules*** flight plan, which authorizes the pilot to proceed visually and clear of clouds to the airport.

Visual Approach Slope Indicator (VASI) - A visual aid for final approach to the ***runway threshold***, consisting of two wing bars of lights on either side of the runway. Each bar produces a split beam of light - the upper segment is white, the lower is red.

Visual Flight Rules (VFR) - Rules and procedures specified in ***Federal Aviation Regulations*** *14 CFR* Part 91 for aircraft operations under visual conditions. Aircraft operations under VFR are not generally under ***positive control*** by ***Air Traffic Control***. The term VFR is also used in the U.S. to indicate weather

conditions that are equal to or greater than minimum VFR requirements. In addition, it is used by pilots and controllers to indicate a type of flight plan.

Visual Meteorological Conditions (VMC) - Weather conditions expressed in terms of visibility, distance from cloud, and cloud ceiling equal to or greater than those specified in ***Federal Aviation Regulations*** *14 CFR* Part 91.155 for aircraft operations under ***Visual Flight Rules***.

Yearly Day-Night Average Sound Level - *see* ***DNL***.

Chapter 1

CHAPTER 1
INTRODUCTION AND BACKGROUND

1.1 INTRODUCTION AND BACKGROUND

This Environmental Assessment (EA), required by the National Environmental Policy Act of 1969 (NEPA), as amended (40 CFR 1500-1508)[1], and prepared in accordance with Federal Aviation Administration (FAA) FAA Orders 1050.1E Change 1, *Environmental Impacts: Policies and Procedures* and 5050.4B, *National Environmental Policy Act (NEPA) Implementing Instructions for Airport Actions,* analyzes the potential environmental effects of a Proposed Action involving rehabilitation and widening and compliance with FAA Runway Safety Area (RSA) design standards on Runway 4L/22R at John F. Kennedy International Airport (JFK or Airport) – the "Proposed Action." The EA is required under NEPA because the project would require the FAA to approve a change to the Airport Layout Plan (ALP) for JFK, which is a Federal action, and because Federal funds may be used to implement the Proposed Action.

A Draft EA for this project, *Runway 4L/22R Improvements, John F. Kennedy International Airport,* was prepared and published for public review and comment in May 2012. The Proposed Action from the May 2012 Draft EA included the following major elements:

- Relocate the Runway 4L end 460 feet to the north.
- Construct 728 feet of new runway pavement on the north side of Runway 4L/22R to maintain adequate departure length on Runway 22R while providing the required 1,000 feet of overrun RSA to comply with FAA design standards.
- Rehabilitate Runway 4L/22R using concrete, replacing the existing asphalt.
- Widen Runway 4L/22R from 150 to 200 feet.
- Relocate the displaced landing (arrival) threshold on Runway 22R 3,316 feet to the north.

Two of the elements, the relocation of the Runway 22R arrival threshold 3,316 feet to the north and the relocation of the Runway 4L end (departure starting point) 460 feet to the north, would have resulted in aircraft being at lower altitudes than existing conditions over areas to the north of the runway, including Idlewild Park. The lower altitude of aircraft would have resulted in up to 800 trees in Idlewild Park becoming obstructions, as defined in FAA Order 8260.3B, United States Standard for Terminal Instrument Procedures (TERPS). FAA Order 8260.3B specifies the minimum measure of obstacle clearance that is considered by the FAA (the Federal authority) to supply a satisfactory level of vertical protection for aircraft operating at an airport. If the project described in the May 2012 Draft EA were to be implemented, up to 800 trees in Idlewild Park would have required removal to comply with FAA standards. The project described in the May 2012 Draft EA has been modified to avoid this impact as explained in the following paragraphs.

[1] P.L. 91-190, 42 U.S.C. 4321, et. seq., *National Environmental Policy Act*, 1969, Section 102(2)(c).

In order to minimize the number of trees to be removed from Idlewild Park, the Port Authority made the decision to redefine the proposed project as described in Section 1.3 of this Revised Draft EA. The Port Authority no longer proposes the relocation of the Runway 22R arrival threshold 3,316 feet to the north. The arrival threshold on Runway 22R would remain in its existing location, which does not result in lower landing elevations north of the Airport. Because there is no change to the Runway 22R arrival threshold, the high speed taxiway proposed for arrivals on Runway 22R is also no longer proposed in this Revised Draft EA. In addition, the revised project no longer proposes the relocation of the Runway 4L departure starting point. As a result the Proposed Action, described in the May 2012 Draft, has been redefined and this Revised Draft EA has been prepared. The Proposed Action presented in this Revised Draft EA and described in more detail in Section 1.3, includes the following major elements:

- Displace the Runway 4L arrival threshold 460 feet to the north to provide 600 feet of required undershoot RSA to comply with FAA design standards.
- Construct 728 feet of new runway pavement on the north side of Runway 4L/22R to maintain adequate departure length on Runway 22R while providing the required 1,000 feet of overrun RSA to comply with FAA design standards. This element was also included in the proposed project described in May 2012 Draft EA.
- Rehabilitate Runway 4L/22R using concrete, replacing the existing asphalt.
- Widen Runway 4L/22R from 150 to 200 feet.

It is important to note, because the Runway 22R arrival threshold and Runway 4L departure starting point would not be relocated, the altitude of arrivals on Runway 22R and the altitude of departures on Runway 4L would remain the same as existing conditions. In addition, the Proposed Action would not cause airport operations to increase and would not result in additional vehicular traffic following the construction period.

It should also be noted the Port Authority of New York and New Jersey (Port Authority) is currently mitigating ***existing*** tree obstructions in Idlewild Park that are unrelated to the Runway 4L/22R project. There are approximately 312 ***existing*** TERPS tree obstructions in Idlewild Park that require removal to comply with FAA Order 8260.3B. In addition, there are trees in Idlewild Park that currently do not comply with Title 14 Code of Federal Regulation (CFR) Part 77, which establishes standards and notification requirements for objects affecting navigable airspace. Violations of Part 77 do not require removal but do typically require installation of lights/light poles to identify the obstructions to pilots. In order to comply with Part 77 requirements the Port Authority plans to install up to seven light poles in Idlewild Park to identify the trees that do not comply Part 77 requirements. The Port Authority is currently working with the New York City Department of Parks and Recreation to insure that the existing Airport complies with both of these Federal requirements. As stated above, the removal of these trees and the installation of the light poles are not caused by the implementation the Proposed Action presented in this EA and therefore are not considered an impact of the Proposed Action. They will however be considered as part of the cumulative impacts.

This Revised Draft EA was prepared in accordance with and to satisfy FAA Orders 1050.1E, Change 1 and 5050.4B and NEPA. All public comments received on the May 2012 Draft EA are included in this Revised Draft EA in Appendix D, *Comments Received on the May 2012 Draft Environmental Assessment* and were considered in the preparation of this Revised Draft EA. There will be a public comment period from October 17, 2013 to November 18, 2013 to accept comments on this on this Revised Draft EA.

1.2 AIRPORT DESCRIPTION

JFK is the largest facility in the Port Authority airport system with over 4,930 acres, four runways, and six operating terminals. In 2012, JFK carried 1.3 million tons of cargo and handled over 49.2 million passengers. JFK remains the premiere international gateway in the U.S. with over 70 carriers serving 100 international nonstop destinations and over 401,600 aircraft operations.

As shown in **Exhibit 1-1, *Airport Environs***, JFK's current airfield consists of four runways: two widely-spaced parallel runways oriented in a northwest/southeast direction (Runways 13L/31R and 13R/31L) and two closely-spaced parallel runways oriented in a northeast/southwest direction (Runways 4L/22R and 4R/22L). The dimensions of the runways are as follows:

- Runway 13L/31R – 10,000' x 150'
- Runway 13R/31L – 14,511' x 200'
- Runway 4L/22R – 11,351' x 150'
- Runway 4R/22L – 8,400' x 200'

See **Exhibit 1-2, *Existing Runway 4L/22R***, for the existing condition of Runway 4L/22R.

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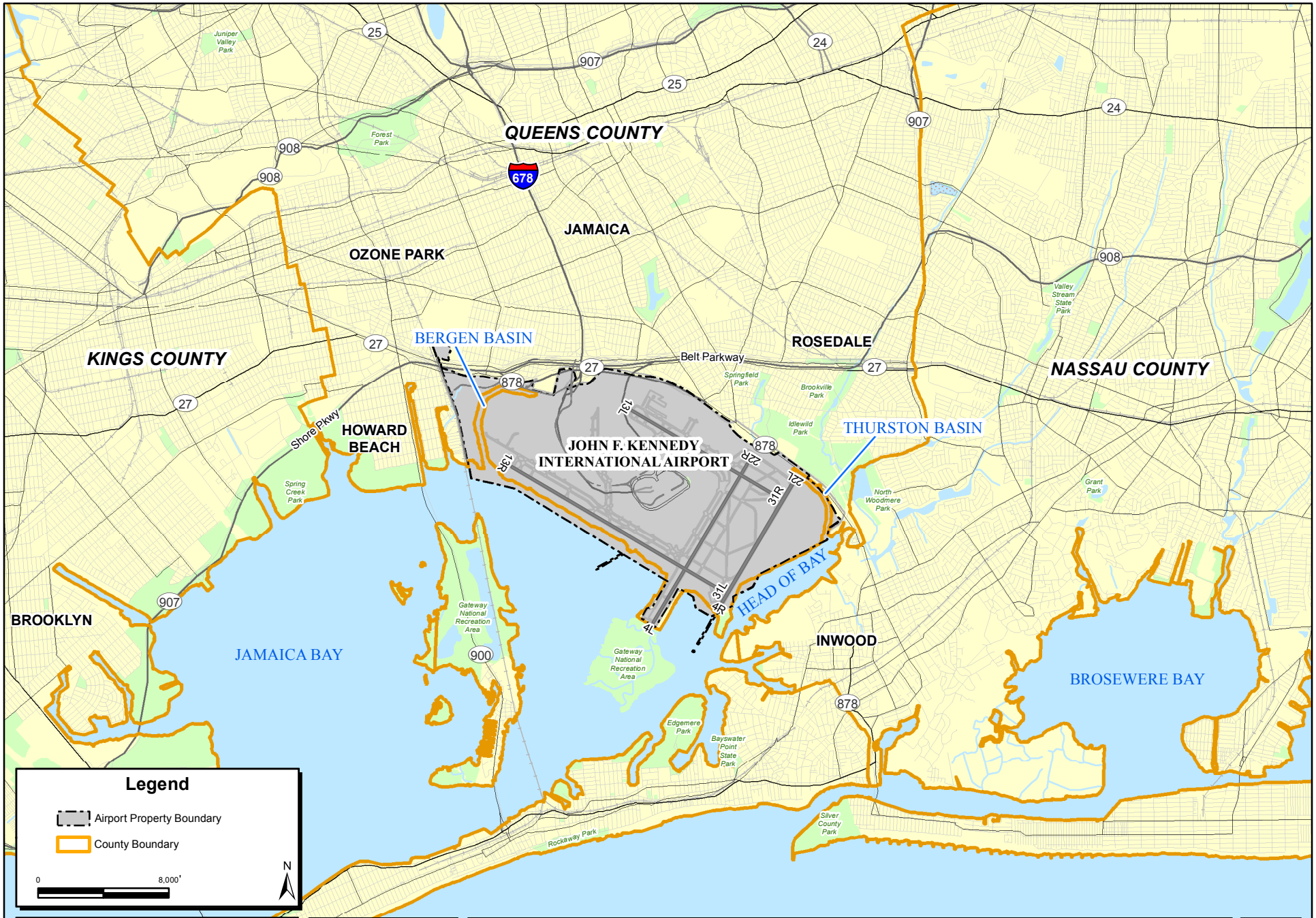


Environmental Assessment
4L/22R Improvements
John F. Kennedy International Airport

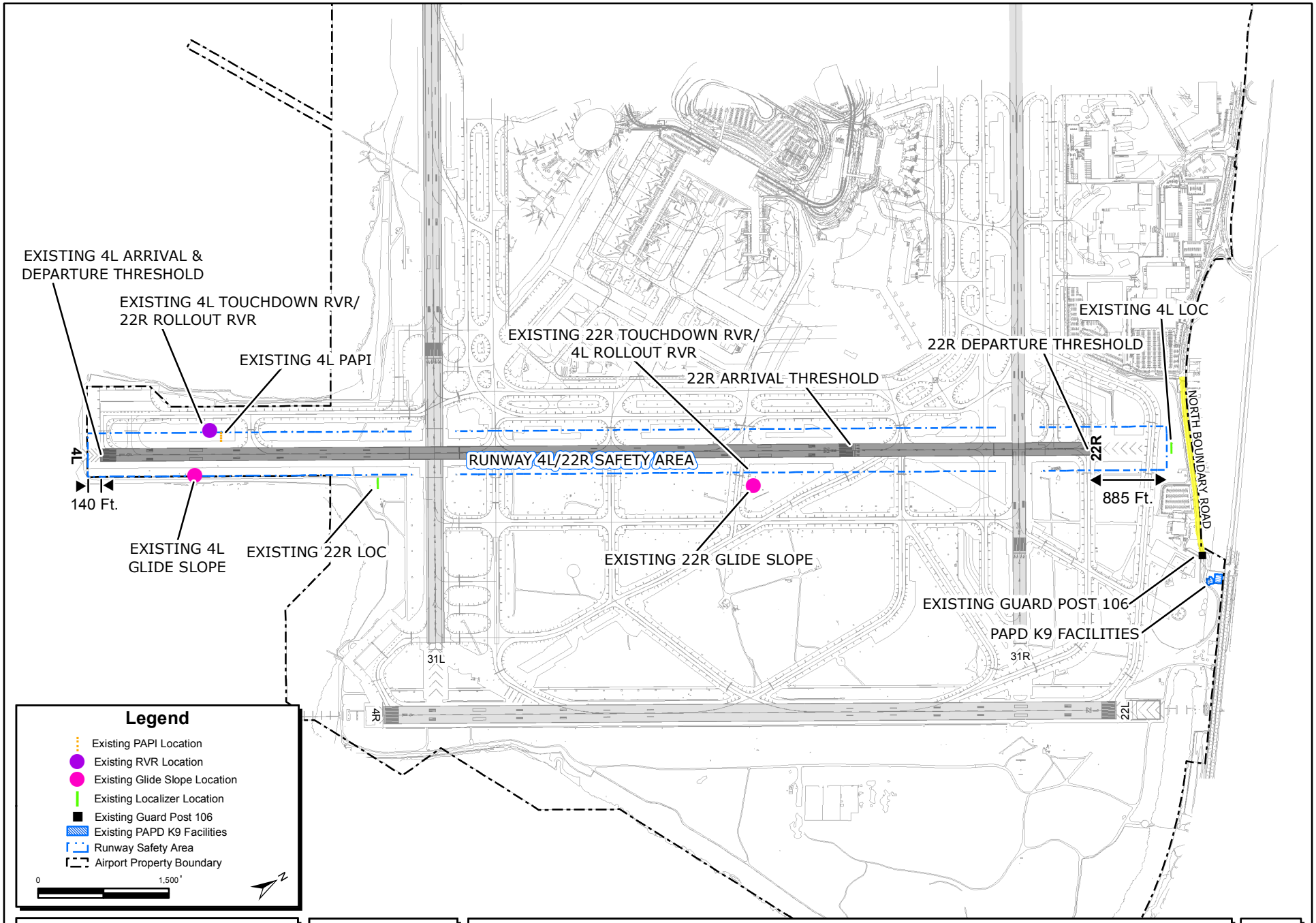
REVISED DRAFT

8/20/2013 Prepared by Landrum & Brown
Filename: Y:\JFK\4L_22R Rehab EA\
E-L&B Work Product\2-GIS\MXD\
1-1_Airport Environs.mxd

Airport Environs

Exhibit:
1-1

BACK OF EXHIBIT 1-1, AIRPORT ENVIRONS



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1-2_Existing Runway 4L-22R.mxd

Existing Runway 4L/22R

Exhibit:
1-2

BACK OF EXHIBIT 1-2, EXISTING RUNWAY 4L/22R

1.3 DESCRIPTION OF THE PROPOSED ACTION

The Proposed Action includes the following seven major categories of projects to Runway 4L/22R: (1), Comply with FAA RSA Design Standards (2) Rehabilitate Runway 4L/22R, (3) Widen Runway 4L/22R to Comply with FAA Design Standards (4) Modify Taxiway System, (5) Acquire and Convey Land, Relocate Facilities, and Modify Roadways, (6) Reconfigure Navigational Aid System, and (7) Update Flight Procedures. The Proposed Action elements are shown on **Exhibit 1-3, *Proposed Action***, **Exhibit 1-4**, ***Proposed Action – Runway 22R End***, **Exhibit 1-5, *Proposed Action – Runway 4L End***, **Exhibit 1-6, *North Boundary Road Access and Proposed Location of PAPD Facilities,*** and **Exhibit 1-7, *Property Transfers***. The elements of the Proposed Action are listed below.

Comply with FAA RSA Design Standards

- Displace the Runway 4L arrival threshold 460 feet to the north to provide 600 feet of required undershoot RSA for Runway 4Lto comply with FAA design standards.
- Construct 728 feet of new runway pavement on the north side of Runway 4L/22R to maintain adequate departure length on Runway 22R while providing the required 1,000 feet of overrun RSA for Runway 22R to comply with FAA design standards.

Rehabilitate Runway 4L/22R

- Rehabilitate Runway 4L/22R using concrete, replacing the existing asphalt.

Widen Runway 4L/22R

- Widen Runway 4L/22R from 150 to 200 feet to comply with FAA design standards.

Modify Taxiway System

- Construct new taxiway exits leading to the central terminal area, new taxiway access points to the north end of the runway, and other taxiway modifications to conform to the rehabilitation, widening, and reconfiguration of Runway 4L/22R.

Acquire and Convey Land, Relocate Facilities, and Modify Roadways

- Acquire land from and convey land to the New York City Economic Development Corporation (NYCEDC); relocate Patrol Road, Airport security fence, and Guard Post 106; reconfigure and relocate a portion of the Port Authority Police Department (PAPD) impound parking lot; demolish and relocate the PAPD K9 facilities; install a visual screen; and decommission (dead-end) a portion of North Boundary Road located within the Aircraft Operations Area (AOA).

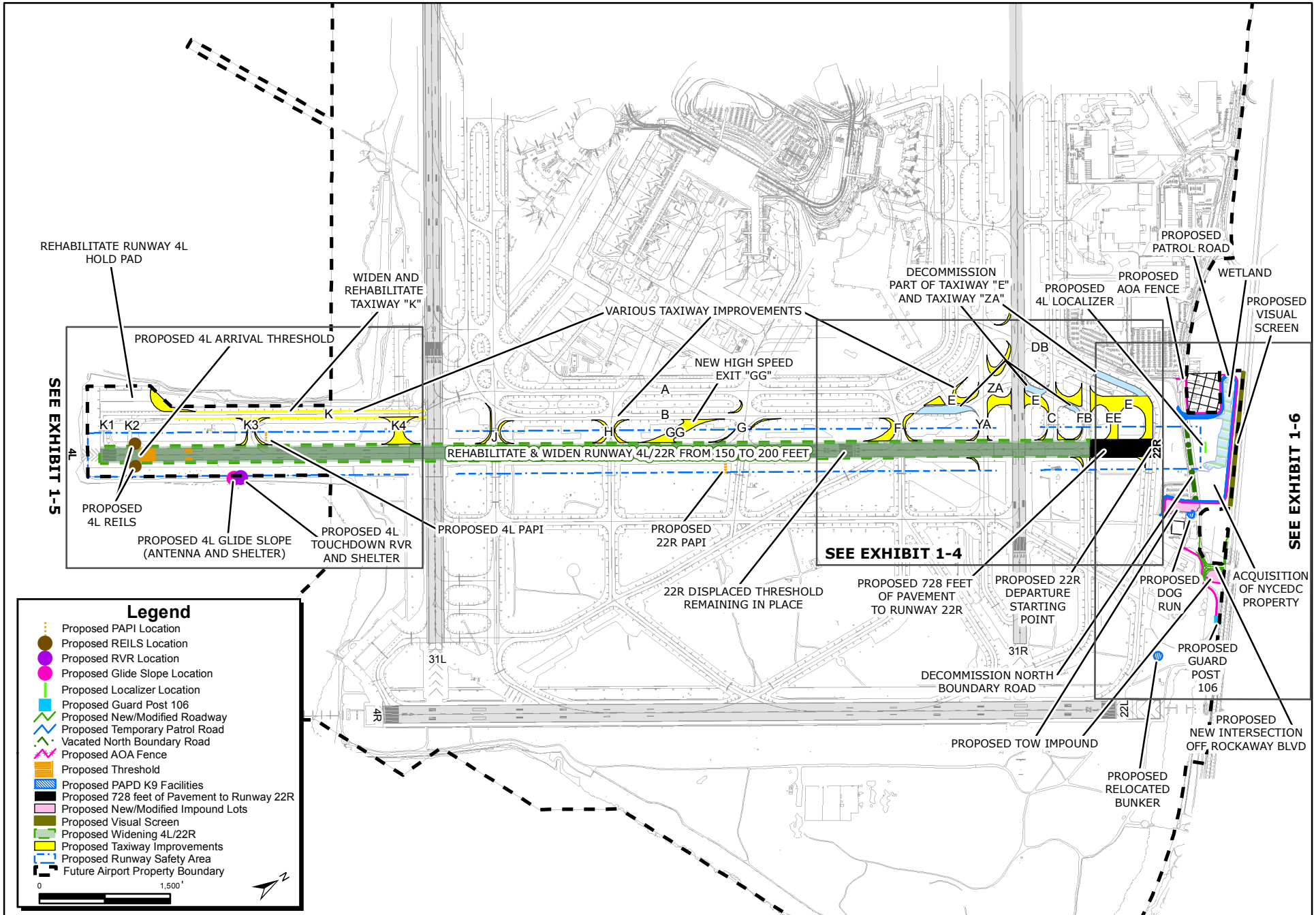
Reconfigure Navigational Aid System

- Relocate Runway 4L localizer.
- Relocate Runway 4L glide slope (GS) to account for the Runway 4L displaced arrival threshold location and to place the GS out of the RSA lateral to the runway.

- Relocate Precision Approach Path Indicators (PAPI), Runway Visual Range (RVR), runway distance-to-go signs, and reconfigure runway signs and runway lighting to conform to the reconfigured Runway 4L.
- Install Runway End Identifier Lighting (REIL) for Runway 4L
- Install PAPI, runway distance-to-go signs, and reconfigure runway signs and runway lighting to conform to the reconfigured Runway 22R.

Update Flight Procedures

- Update the arrival and departure procedures due to the reconfiguration of Runway 4L/22R.



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John F. Kennedy International Airport

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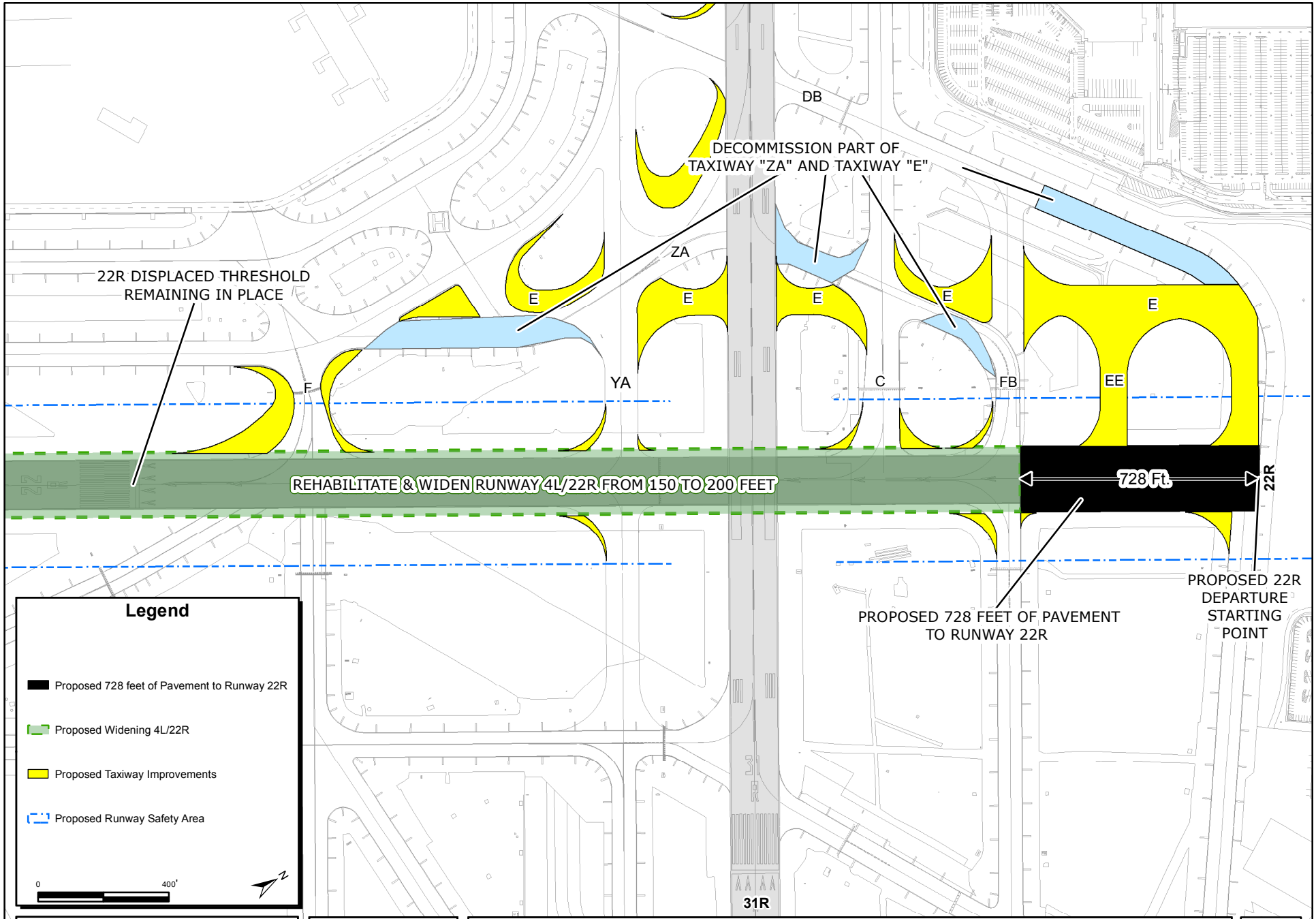
Proposed Action

Exhibit: 1-3

BACK OF EXHIBIT 1–3, PROPOSED ACTION



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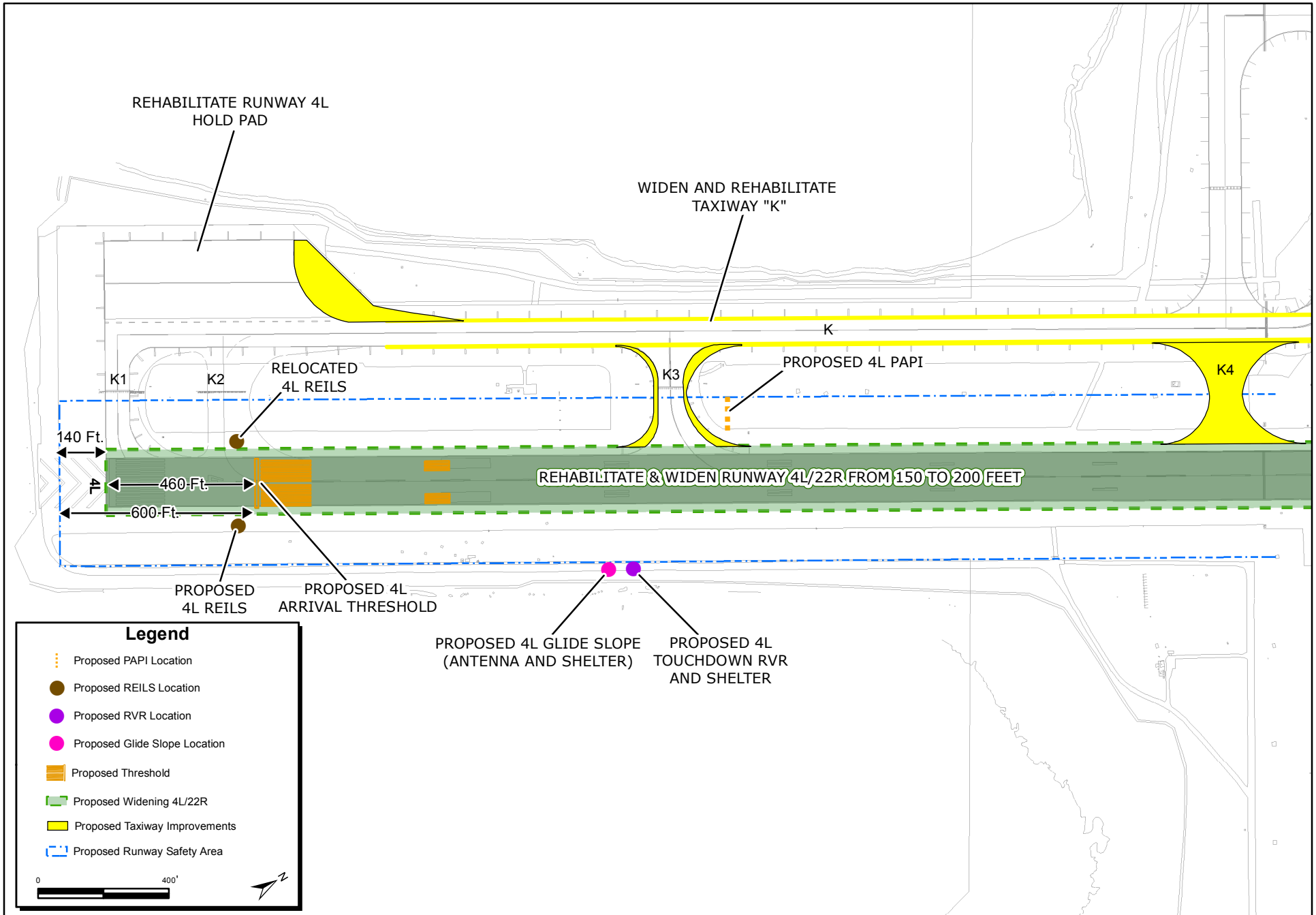
E-L&B Work Product\2-GIS\MXD\
1-4_Proposed Action Runway 22R End.mxd

Proposed Action - Runway 22R End

Exhibit:
1-4

BACK OF EXHIBIT 1–4, PROPOSED ACTION – RUNWAY 22R END



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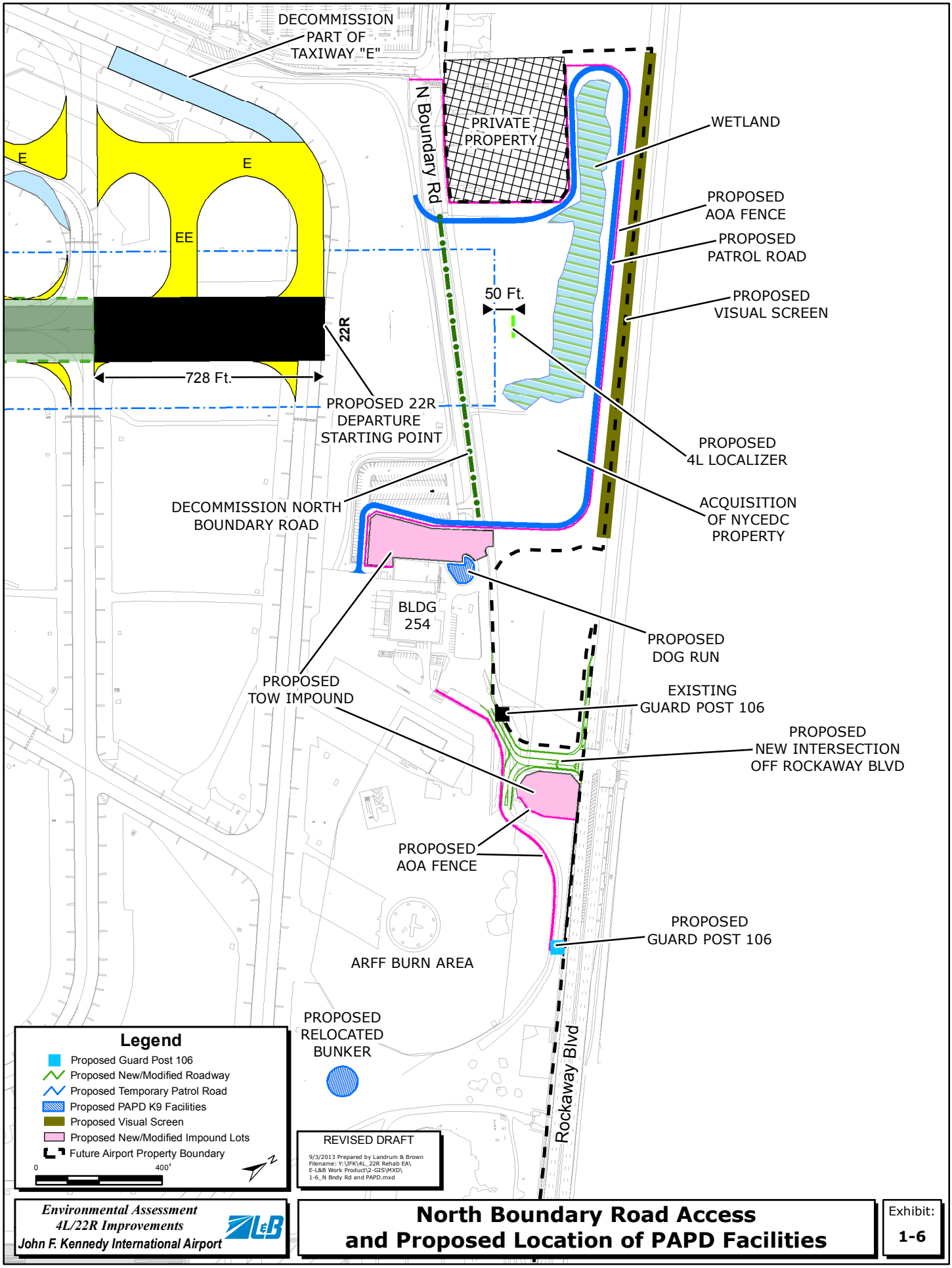
1-5_Proposed Action Runway 4L End.mxd

Proposed Action - Runway 4L End

Exhibit:
1-5

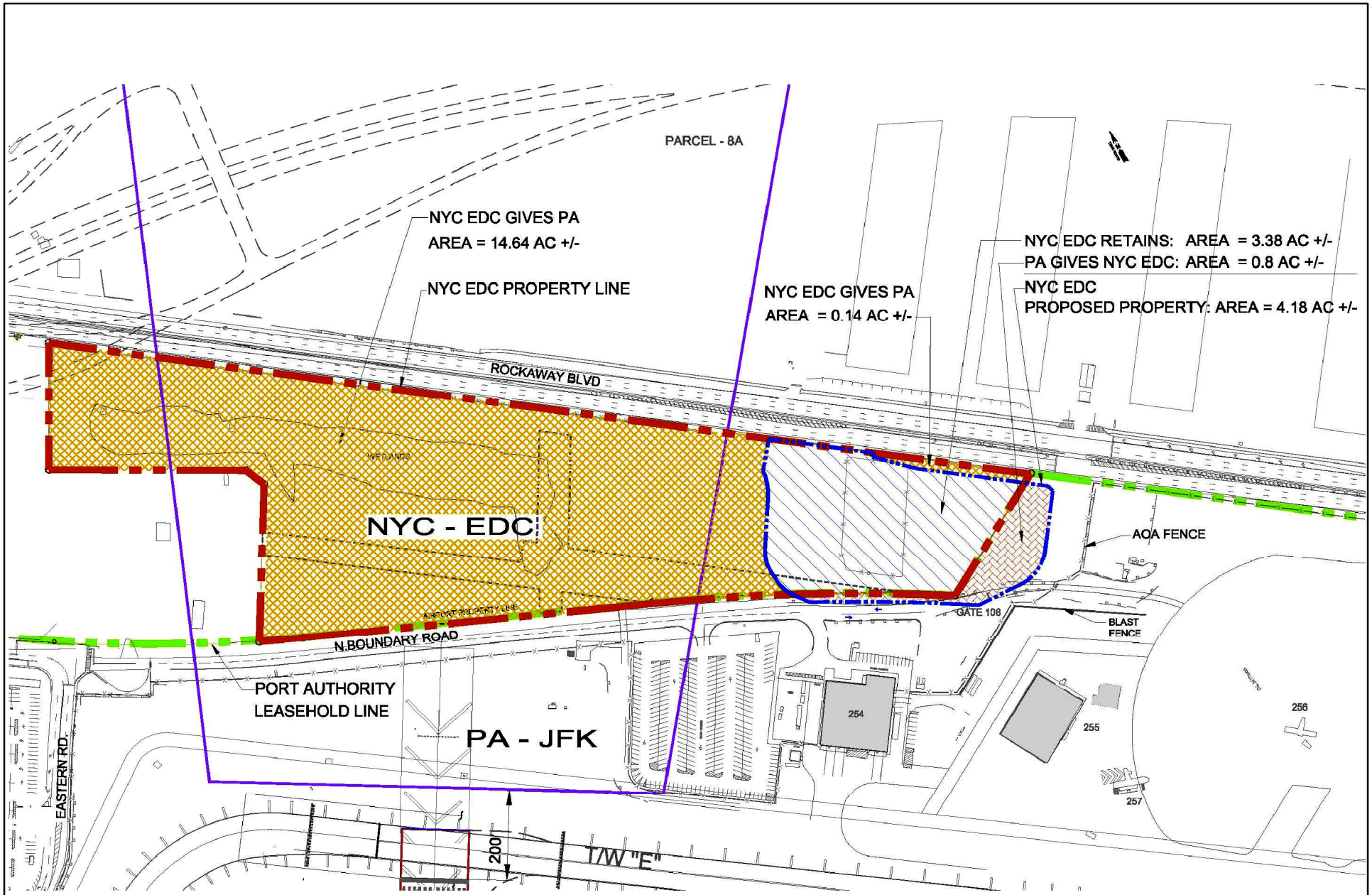
BACK OF EXHIBIT 1–5, PROPOSED ACTION – RUNWAY 4L END



Environmental Assessment
4L/22R Improvements
John F. Kennedy International Airport

North Boundary Road Access and Proposed Location of PAPD Facilities

Exhibit: **1-6**



John F. Kennedy
International Airport

PROPOSED PROPERTY TRANSFERS

Aviation Department
Master and Site Planning
JFK-14485-02 December 2011 TSM

Environmental Assessment
4L/22R Improvements
John F. Kennedy International Airport

REVISED DRAFT
8/30/2013 Prepared by Landrum & Brown
Filename: Y:\JFK\4L_22R Rehab EA\
E-L&B Work Product\2-GIS\MXD\
1-7_Property Transfers.mxd

Property Transfers

Exhibit:
1-7

BACK OF EXHIBIT 1–7, PROPERTY TRANSFERS

The following describes in more detail the elements of the Proposed Action.

Comply with FAA RSA Standards

Displace the Runway 4L arrival threshold 460 feet to the north to provide 600 feet of required undershoot RSA for Runway 4L to comply with FAA design standards

The current landing threshold on Runway 4L is not displaced. The RSA prior to landing on Runway 4L is currently 140 feet in length, which does not comply with the required 600 feet of undershoot RSA for arrivals as specified by the FAA AC 150/5300-13A, *Airport Design.* Therefore the arrival threshold of Runway 4L needs to be displaced 460 feet to the north, resulting in a required undershoot RSA of 600 feet prior to the landing threshold of Runway 4L. The arrival threshold relocation would require remarking the pavement but would not include adding new pavement to the end of the runway. There would be no change to departures on Runway 4L. See Exhibit 1-5 for a depiction of these elements of the Proposed Action.

Construct 728 feet of new runway pavement on the north side of Runway 4L/22R to maintain adequate departure length on Runway 22R while providing the required 1,000 feet of overrun RSA for Runway 22R to comply with FAA design standards

As previously stated, the existing RSA on the south end of Runway 4L/22R is 140 feet in length versus the required 1,000 feet of overrun for Runway 22R departing aircraft. To comply with FAA AC 150/5300-13A requirements, the existing departure length for operations on Runway 22R would be reduced by 860 feet by means of declared distances[2] to create the required 1,000 foot RSA (existing 140 feet + 860 feet = 1,000 feet), reducing the available departure length to 10,491 feet. To offset this reduction in available departure length, it was determined an additional 728 feet of runway pavement would be needed on the north end of the runway resulting in 11,219 feet of available departure length, which is a net decrease of 132 feet from the existing 11,351 feet. The additional runway pavement would intersect Taxiway E to provide access to the runway. A runway length analysis determined that an 11,219 foot runway would be needed to continue to accommodate the current and projected aircraft fleet. See Exhibit 1-4 for a depiction of these elements of the Proposed Action.

Rehabilitate Runway 4L/22R

Rehabilitate Runway 4L/22R using concrete, replacing the existing asphalt

Runway 4L/22R was last rehabilitated in 1999. Interim repairs were performed to the southern 1,300 feet of the runway in 2008. However, on-going aircraft operations on the runway have resulted in continued deterioration of the existing asphalt pavement. Therefore, rehabilitation of this runway is necessary in order to safely accommodate aircraft operations. The runway rehabilitation would be completed in the same timeframe as the other projects in order to reduce runway closures and minimize impacts to Airport operations. The Proposed Action would

[2] The distance the airport owner declares available for the airplane's takeoff run, takeoff distance, accelerate-stop distance, and landing distance requirements.

replace the existing asphalt with concrete. A temporary concrete plant would be installed to produce concrete on site. This would minimize the need for concrete trucks to use major highways, which would help reduce traffic and emissions.

Widen Runway 4L/22R

Widen Runway 4L/22R from 150 to 200 feet to comply with FAA Design Standards

The Port Authority is required by FAA to widen Runway 4L/22R from 150 to 200 feet for operations of Airplane Design Group (ADG) VI aircraft during the rehabilitation to enhance safety. ADG is a classification of aircraft based on wingspan and tail height. The ADG VI aircraft include the Airbus 380, Boeing 747-8, and Boeing 747-8 Freighter aircraft. The Airbus 380 currently operates on Runway 4L/22R with a Modification of Standard waiver from the FAA.

Summary of Runway Elements

Table 1-1, *Runway Characteristics* provides a summary of the characteristics of Runway 4L/22R for the No-Build/No-Action and Proposed Action scenarios. **Exhibit 1-8**, ***Proposed Runway 4L/22R Characteristics*** provides a graphical depiction of the Proposed Runway 4L/22R characteristics. As previously stated, the existing RSA on the south end of Runway 4L/22R is 140 feet in length versus the required 1,000 feet of overrun for Runway 22R departing aircraft. To comply with FAA AC 150/5300-13A requirements, the existing departure length for operations on Runway 22R would be reduced by 860 feet by means of declared distances to create the required 1,000 foot RSA (existing 140 feet + 860 feet = 1,000 feet), reducing the available departure length to 10,491 feet. To offset this reduction in available departure length, it was determined an additional 728 feet of runway pavement would be needed on the north end of the runway resulting in 11,219 feet of available departure length. A runway length analysis determined that an 11,219 foot runway would be needed to continue to accommodate the current and projected aircraft fleet. As shown in the table and on the exhibit, the additional 728 feet of pavement added to the north end of the runway does not increase the takeoff available distance for departures on Runway 22R as compared to existing conditions, but actually decreases it by 132 feet. With the Proposed Action, the existing landing available distance would decrease by 182 feet on Runway 4L and decrease by 860 feet on Runway 22R.

Table 1-1
RUNWAY CHARACTERISTICS
John F. Kennedy International Airport

	NO-BUILD/ NO-ACTION	PROPOSED ACTION	CHANGE
Runway 4L			
Pavement Length	11,351 feet	12,079 feet	+728 feet
Pavement Width	150 feet	200 feet	+50 feet
Takeoff available distance	11,351 feet	11,351 feet	0 feet
Landing available distance	11,351 feet	11,169 feet	-182 feet
Displaced arrival threshold	0 feet	460 feet	460 feet
Runway 22R			
Pavement Length	11,351 feet	12,079 feet	+728 feet
Pavement Width	150 feet	200 feet	+50 feet
Takeoff available distance	11,351 feet	11,219 feet	-132 feet
Landing available distance	8,655 feet	7,795 feet	-860 feet
Displaced arrival threshold	2,696 feet	3,424 feet	+728 feet

Source: PANYNJ, Landrum & Brown 2013

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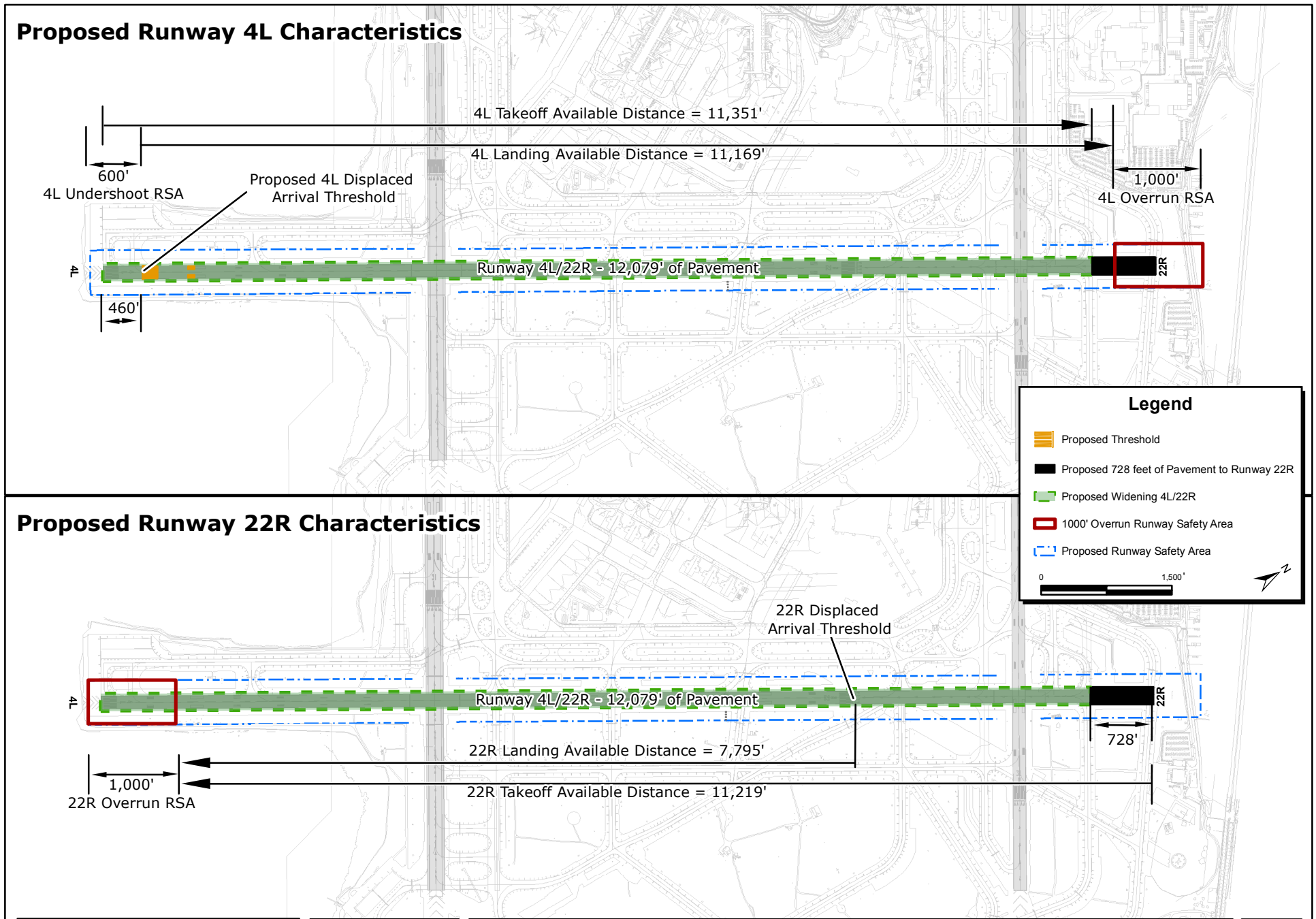

Environmental Assessment
4L/22R Improvements
John F. Kennedy International Airport

REVISED DRAFT
10/10/2013 Prepared by Landrum & Brown
Filename: Y:\JFK\4L_22R Rehab EA\
E-L&B Work Product\2-GIS\MXD\
1-8_Proposed 4L-22R Characteristics.mxd

Proposed Runway 4L/22R Characteristics

Exhibit:
1-8

BACK OF EXHIBIT 1–8, PROPOSED RUNWAY 4L/22R CHARACTERISTICS

Upgrade Taxiway System

Add New High-Speed Taxiway GG

A new 30-degree angle taxiway (Taxiway GG) would be built between Taxiway H and Taxiway G to accommodate the displaced arrival threshold on Runway 4L. See Exhibit 1-3 for a depiction of this element of the Proposed Action.

Realign Taxiway E and Add New Taxiway EE

A portion of existing Taxiway E, north of Taxiway FB, does not comply with FAA design standards for ADG VI. In addition, to provide a more logical, direct, and efficient taxiway system to the new departure starting point on Runway 22R, the realignment of a parallel taxiway (Taxiway E) to Runway 4L/22R is included as part of the Proposed Action. This parallel taxiway would provide access for departures on Runway 22R. This realigned taxiway would begin at Taxiway B and connect to the existing Taxiway E at the end of Runway 22R. A new taxiway (Taxiway EE) would also be added between Taxiway FB and Taxiway E. This new taxiway would provide additional staging for aircraft departing on Runway 22R. See Exhibits 1-3 and 1-4 for a depiction of these elements of the Proposed Action.

Re-designate a Portion of Taxiway E to Taxiway DB

This re-designation would rename the older portion of Taxiway E west of Runway 22R, which would be renamed to Taxiway DB in the segment between Taxiway FB and Taxiway A. This is necessary because a new Taxiway E would connect to the proposed Runway 22R threshold. See Exhibits 1-3 and 1-4 for a depiction of this element of the Proposed Action.

Decommission the West Section of Existing Taxiway E between Taxiway FB and the Northern End of New Taxiway E

A portion of the existing Taxiway E, north of Taxiway FB, does not comply with FAA design standards for ADG VI. Therefore it would be decommissioned and reconstructed as part of the Proposed Action. The decommissioning of a portion of existing Taxiway E would be necessary to gain the increased efficiency provided by the new parallel Taxiway E. See Exhibits 1-3 and 1-4 for a depiction of this element of the Proposed Action.

Decommission Sections of Existing Taxiway ZA

With the realignment of Taxiway E, the portions of existing Taxiway ZA between Taxiway B and Taxiway YA would be decommissioned. See Exhibits 1-3 and 1-4 for a depiction of this element of the Proposed Action.

Extend Taxiway K4

On the north side of the runway, Taxiway K4 (existing Taxiway KC) would be extended to connect to Runway 4L/22R to comply with FAA design standards. See Exhibits 1-3 for a depiction of this element of the Proposed Action.

Widen and Rehabilitate Taxiway K

Taxiway K would be widened to 82 feet. On June 30, 2011 the FAA approved a Modification to Standard that conditionally approved the operation of ADG VI – Taxiway Design Group (TDG) 7 aircraft on 75-foot taxiways at JFK. TDG relates to the undercarriage dimensions of the aircraft. Taxiway/taxilane width and fillet standards, and in some instances, runway to taxiway and taxiway/taxilane separation requirements, are determined by TDG. Widening Taxiway K to 82 feet is required to bring Taxiway K into full compliance during rehabilitation as the pavement has deteriorated. See Exhibits 1-3 and 1-5 for a depiction of this element of the Proposed Action.

Widen Fillets for Taxiways K3, J, H, G, F, YA, C, ZA, and FB

Fillets would be widened at Taxiways K3, J, H, G, F, YA, C, ZA, and FB to accommodate ADG VI-TDG 7 aircraft. A fillet is the additional pavement on a junction or intersection of a taxiway with a runway, apron, or another taxiway, to ensure the prescribed taxiway edge safety margin is maintained when the pilot guides the aircraft around turns. See Exhibit 1-3 for a depiction of these elements of the Proposed Action.

Rehabilitate Runway 4L Hold Pad

The hold pad pavement, located on the west side of Runway 4L, has deteriorated and is in need of rehabilitation. See Exhibits 1-3 and 1-5 for a depiction of this element of the Proposed Action.

Acquire and Convey Land, Relocate Facilities, and Modify Roadways

Acquire land from and convey land to the New York City Economic Development Corporation (NYCEDC); relocate Patrol Road, Airport security fence, Guard Post 106; reconfigure and relocate a portion of the Port Authority Police Department (PAPD) impound parking lot; demolish and relocate the PAPD K9 facilities; install a visual screen; and decommission (dead-end) a portion of North Boundary Road within the AOA

As part of the Proposed Action the NYCEDC[3] property north of the runway (approximately 14.8 acres) would be acquired by the Port Authority to allow for the Runway 4L/22R projects. As part of the land acquisition, the Port Authority would convey approximately 2.4 acres of land to the NYCEDC (see Exhibit 1-7).

Patrol Road, the Airport security fence, and North Boundary Road run in an east/west direction approximately 320 to 350 feet north of Taxiway E. All three would be located within the proposed RSA for Runway 4L/22R and therefore need to be relocated. Patrol Road is located within the Airport security fence while North Boundary is located outside of the security fence but within the Airport property.

[3] See Appendix A, *Agency Coordination* for the signed First Amendment to the Lease between the Port Authority and the NYEDC.

At this time, a piece of private property would not be obtained within the program schedule to allow for the relocation of North Boundary Road. As a result, North Boundary Road would be decommissioned (dead-ended) from the corner with Eastern Road to the relocated Patrol Road, restricting access to facilities on the east side of Runway 4L/22R. A new driveway connecting Rockaway Boulevard to the Airport and North Boundary Road would be constructed and would be the only landside access to the facilities on the east side of Runway 4L/22R. Also approximately eight street light poles along the median of Rockaway Boulevard would be lowered to mitigate for Part 77 obstructions. Coordination and permitting are currently underway with the New York State Department of Transportation for the new access road and changes to the traffic light at the new road intersection.[4] Patrol Road and the Airport security fence would be relocated on the property acquired by the Port Authority from the NYCEDC, as shown in Exhibit 1-6. The relocation of Patrol Road and the Airport security fence would be implemented in a way that avoids impacting jurisdictional wetlands located to the north of Runway 4L/22R.

Guard Post 106 would be relocated approximately 800 feet east on North Boundary Road from the existing location just northeast of Building 254 on North Boundary Road (see Exhibit 1-6). The existing PAPD impound lot has 260 parking spaces and covers approximately 99,700 square feet. With the Proposed Action, the lot would be reconfigured and reduced to approximately 98 parking spaces and approximately 41,500 square feet. An additional impound lot would be located east of the new driveway from Rockaway Boulevard to North Boundary Road, as shown on Exhibit 1-6, and would accommodate approximately 60 parking spaces over approximately 23,720 square feet. With the Proposed Action there would be approximately 158 parking spaces available between the two impound lots, which would accommodate the PAPD's needs as the existing impound lot is underutilized. The additional PAPD impound lot would be located on previously disturbed land that is currently used by the PAPD K9 unit to train dogs and consists of a fenced area/dog run and a "bunker" used to train dogs. The fenced area/dog run would be relocated to a grassy area located next to the reconfigured impound lot and would be approximately 4,300 square feet. The "bunker" would be demolished and relocated southeast of the burn area[5] and would be approximately 7,400 square feet (see Exhibit 1-6).

The perimeter fence would be enhanced and a visual screen would be installed on the existing fence along Rockaway Boulevard (see Exhibit 1-3 and Exhibit 1-6). The screen would be approximately 1,600 feet long and would not exceed 14 feet in height. The intent of the screen is to aid in visually shielding the community from aircraft operations on the airport.

[4] See correspondence in Appendix A, *Agency Coordination* between the Port Authority and the Department of Transportation.

[5] Area on Airport where Aircraft Rescue and Fire Fighting (ARFF) training occurs.

Site Navigational Aids

Relocate Runway 4L localizer to meet RSA requirements

The Proposed Action would relocate the Runway 4L localizer from its current location approximately 390 feet to the north along the extended runway centerline (see Exhibit 1-6). The localizer signal is used to establish and maintain the aircraft's horizontal position until visual contact confirms the runway alignment and location. The localizer antenna is made up of a group directional antennas oriented perpendicular to the runway. The localizer pad is approximately 100-foot by 10-foot. Electrical power would be supplied underground and would be extended from the nearest available source. The Proposed Action would relocate the localizer along the extended runway centerline north 600 feet from the future end of the extended runway pavement to protect it from jet blast impacts. This configuration maintains the current visibility minimums on the Runway 4L approach and would not impact the operational capability of the runway. This would require acquiring property from the NYCEDC and relocating Patrol Road and the Airport security fence.

Relocate Runway 4L glide slope (GS) to account for the Runway 4L displaced arrival threshold and to place the GS out of the RSA lateral to the runway

Placement of a GS antenna to serve a runway end must occur within a specified distance from the runway threshold, typically 800 feet to 1,200 feet beyond the landing threshold and not more than 600 feet laterally from the runway centerline. The GS signal is used to establish and maintain the aircraft's descent rate until visual contact confirms the runway alignment and location. A GS differentiates precision from non-precision approaches. Glide slope antennas are single pole antennas typically 30 to 50 feet in height. A glide slope consists of a shelter and antenna that is approximately 10-feet by 12-feet and a concrete pad that is approximately 10-foot by 10-foot. Electrical power would be supplied underground and would be extended from the nearest available source. The current Runway 4L GS shelter and antenna is located along the east side of Runway 4L. The GS is currently situated just inside the lateral limits of the RSA with the antenna being approximately 250 feet from the centerline of Runway 4L/22R. As part of this project the existing GS facilities would be relocated 460 feet to the north of its current position and sited to be outside of the RSA (see Exhibit 1-5).

Relocate Precision Approach Path Indicators (PAPI), Runway Visual Range (RVR), runway distance-to-go signs, and reconfigure runway signs and runway lighting to conform to the reconfigured Runway 4L

A PAPI consists of four lamps on a 5-foot by 5-foot concrete pad in a linear pattern with 30 feet between each lamp. Electrical power to the PAPI would be supplied underground and would be extended from the nearest available source. The PAPI system serving Runway 4L is located on the west side of the runway alignment. It would be relocated approximately 520 feet to the north to provide the appropriate glide path angle for visual reference. In addition, the runway threshold lights would be located to the position of the displaced threshold and placed in the ground lateral to the runway pavement (see Exhibit 1-5).

The RVR is required to support precision landing and takeoff operations. The system measures visibility, background luminance, and runway light intensity to determine the distance a pilot should be able to see down the runway. RVRs are a component of the Instrument Landing System (ILS) for the runway. Based on FAA Order 6560.10, the touchdown RVR shall be located no further than 1,000 feet from the center of the GS antenna toward the approach end of the runway and 1,500 feet from the center of the GS antenna down the runway.

An RVR consists of an antenna approximately 15 feet tall and a concrete pad that is approximately 5-feet by 5-feet. Electrical power would be supplied underground and would be extended from the nearest available source. Currently the RVR is located directly behind the GS. The proposed 460-foot northerly displacement of the Runway 4L arrival threshold to provide the required undershoot RSA length necessitates the relocation of the touchdown RVR for Runway 4L. The proposed RVR would be relocated to the east side of Runway 4L/22R and to the north approximately 330 feet (see Exhibit 1-5).

Associated with the relocation of the electronic navigational aids and PAPI system, the runway would need to be re-marked to include shifting the runway designation markings, and runway threshold markings to the position of the displaced Runway 4L arrival threshold. Additionally the runway aiming point markings and runway touchdown zone markings would also need to be relocated to account for the 460-foot displacement of the Runway 4L arrival threshold. Arrow markings prior to the displaced threshold and along the centerline of the runway would also be required to aid in identifying the displacement of the landing threshold.

Install Runway End Identifier Lighting (REIL) on Runway 4L

A REIL consists of a flashing white high-intensity light installed at each approach end corner of a runway. The lights are directed toward the approach zone, enabling the pilot to identify the runway threshold. These lights consist of two synchronized flashing unidirectional or omnidirectional (360 degree) lights, one on each side of the runway threshold. REIL would be installed in the ground; at least 40 feet from the edge of the runway to account for the displaced arrival threshold on Runway 4L (see Exhibit 1-3 and 1-5).

Install PAPI, runway distance-to-go signs, and reconfigure runway signs and runway lighting to conform to the reconfigured Runway 22R

In the Proposed Action, a PAPI system serving Runway 22R would be installed to the east of the runway and south of the alignment of connector Taxiway G to provide the appropriate glide path angle for visual reference (see Exhibit 1-3). Associated with the relocation of the electronic navigational aids and PAPI system, the runway would need to be re-marked to include shifting the runway designation markings.

Update Flight Procedures

New Arrival and Departure Procedures

Several elements of the Proposed Action would require the FAA Flight Procedures Office to update the arrival and departure procedures on Runway 4L/22R. The elements include the displacement of the arrival threshold on Runway 4L and the relocation of the departure starting point on Runway 22R. The new departure starting point may result in aircraft turning at slightly different points and at a slightly higher altitude than existing conditions. These changes would need to be incorporated into FAA Flight Procedures for JFK. The new procedures are discussed in more detail in Appendix B, *Noise* pages B-8 through B-9. The new procedures were included in the impact assessments in Section 5.1, *Noise*, Section 5.3, *Socioeconomic Impacts, Environmental Justice, and Children's Environmental Health and Safety Risks,* and Section 5.7, *Department of Transportation Act: Section 4(f) Resources*.

1.4 DOCUMENT CONTENT AND ORGANIZATION

This document is organized as follows:

- Section 2.0 describes the purpose and need for the Proposed Action
- Section 3.0 describes alternatives to the Proposed Action
- Section 4.0 describes the affected environment
- Section 5.0 describes the potential environmental impacts of the Proposed Action and of the No-Build/No-Action Alternative

The Federal actions required to implement the Proposed Action is the approval by the FAA of a revised JFK ALP showing the Proposed Action described in Section 1.3, commissioning and decommissioning of NAVAIDS, revised approach procedures and departure procedures, and the provision of Federal funding.

An EA is a disclosure document prepared for the Federal agency (in this case the FAA) responsible for approving a proposed Federal or Federally-funded action, in compliance with the requirements set forth by the Council on Environmental Quality (CEQ) in its regulations implementing NEPA. The purpose of this EA is to investigate, analyze, and disclose the potential impacts of the Proposed Action and its reasonable alternatives. In this case, the FAA is responsible for reviewing and approving actions that pertain to airports and their operation. As such, this EA has been prepared in accordance with FAA Orders 1050.1E Change 1, *Environmental Impacts: Policies and Procedures* and 5050.4B, *National Environmental Policy Act (NEPA) Implementing Instructions for Airport Projects,* and took into consideration guidance included in the *FAA Environmental Desk Reference for Airport Actions*.

This EA was also prepared pursuant to other laws relating to the quality of the natural and human environments, including:

- The Department of Transportation Act, 49 U.S.C., § 303 (formerly Section 4(f))
- 49 U.S.C., §40114, as amended
- 49 U.S.C., §§47101, et seq.
- Executive Order 11990, *Protection of Wetlands*
- Executive Order 11988, *Floodplain Management*
- Executive Order 11593, *Protection and Enhancement of the Cultural Environment*
- Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*
- Federal Aviation Act of 1958 recodified as 49 U.S.C. §§40101, et seq.
- The Airport and Airway Improvement Act of 1982, 49 U.S.C. §47108, as amended
- National Historic Preservation Act, 16 U.S.C. §470(f), as amended
- 36 CFR Part 800, Advisory Council on Historic Preservation
- Archaeological and Historic Preservation Act, 16 U.S.C. §469(a)
- Archaeological Resource Protection Act, 16 U.S.C. §470(aa)
- Farmland Protection Policy Act, 7 U.S.C. §73, and implementing regulations at 7 CFR §658
- Clean Air Act, 42 U.S.C. §§7401, et seq., and implementing regulations at 40 CFR. Parts 51 and 93
- Clean Water Act, 33 U.S.C. §§121, et seq., and implementing regulations at 33 CFR §§325 and 33 CFR §336
- 33 CFR Parts 320-330, Regulatory Programs of the Corps of Engineers
- Endangered Species Act, 16 U.S.C. §661, et seq., as amended
- Other laws, regulations, and policies as applicable

Copies of this document are available at JFK Airport, at the Port Authority offices, and online at http://www.panynj.gov/about/pdf/JFK-Runway-4L-22R-EA.pdf. The public comment period ends on November 18, 2013.

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Chapter 2

CHAPTER 2
PURPOSE AND NEED

2.1 PURPOSE AND NEED

The purpose of the Proposed Action is to comply with Federal Aviation Administration (FAA) Runway Safety Area (RSA) design standards while maintaining sufficient runway length to accommodate current and projected fleet, rehabilitate Runway 4L/22R, and widen Runway 4L/22R to comply with FAA design standards at John F. Kennedy International Airport (JFK or Airport). The purpose and need for the Runway 4L/22R projects are discussed in more detail in the following sections.

2.1.1 COMPLY WITH RSA STANDARDS, WHILE MAINTAINING SUFFICIENT RUNWAY LENGTH TO ACCOMMODATE CURRENT AND PROJECTED FLEET

The purpose of complying with FAA RSA standards included in FAA Advisory Circular (AC) 150/5300-13A, *Airport Design,* as required by Public Law (P.L.) 109-115, is to enhance the level of safety provided by RSAs at the Airport. The FAA's design standards were established to ensure the safety of airports. These standards include criteria for RSAs, which are clear and graded areas around a runway, free of objects and structures. RSAs are designed and maintained to enhance safety in the event that an aircraft undershoots, overruns, or veers off the runway, and to provide greater accessibility for firefighting and rescue equipment during such incidents. RSAs should also be adequately drained by surface grades or storm sewers to prevent water accumulation.

The applicable requirements for RSAs are included in FAA AC 150/5300-13A, *Airport Design*. Both the Airplane Design Group (ADG), defined by an aircraft's wingspan, and tail height, and the Aircraft Approach Category, defined by an aircraft's approach speed, form the basis for establishing RSA dimensions. Based on these criteria, the following standard RSA dimensional requirements apply to Runway 4L/22R at JFK:

RSA Dimensions	**Airplane Design Group VI**
RSA Width	500 feet
RSA Undershoot (Length Prior to Landing)	600 feet
RSA Overshoot (Length Beyond the Runway)	1,000 feet

Many airports, including JFK, were built before the current FAA design standards for RSAs were adopted. Achieving the required RSAs can be challenging due to obstacles such as water bodies, highways, or populated areas. In the late 1990s and early 2000s, a series of aircraft mishaps highlighted the need for airports to comply with RSA standards. These mishaps stimulated the passage of Public Law 109-115, which states "*not later than December 31, 2015, the owner or operator of an airport certificated under 49 United States Code 44706 shall improve the airport's RSAs to comply with the FAA design standards required by 14 Code of Federal Regulations Part 139"* (P.L. 109-115, November 30, 2005

[119 Statute 2401]). In addition, according to FAA Order 5200.8, "whenever a project for a runway involves construction, reconstruction (includes overlays), or significant expansion, the project shall also provide for improving the RSA…"

The RSA dimensions on Runway 4L/22R, along with the FAA standards, are summarized in **Table 2-1, *Runway 4L/22R Runway Safety Areas (RSA*)**. As shown in the table, the RSA for Runway 4L arrival and departure operations are deficient and the RSA for Runway 22L departure operations is deficient. The Runway 4L end is limited by the Jamaica Bay National Wildlife Area and wetlands. On the north end, Runway 22L, both natural and manmade facilities limit the RSA. These include jurisdictional wetlands, road alignments, and the Airport property boundary.

Table 2-1
RUNWAY 4L/22R RUNWAY SAFETY AREAS (RSA)
John F. Kennedy International Airport

	RSA LENGTH PRIOR TO LANDING THRESHOLD (ARRIVALS)		RSA LENGTH BEYOND RUNWAY END (DEPARTURES)		RSA WIDTH CENTERED ALONG RUNWAY CENTERLINE	
RUNWAY END	**CURRENT AIRFIELD**	**FAA STANDARD**	**CURRENT AIRFIELD**	**FAA STANDARD**	**CURRENT AIRFIELD**	**FAA STANDARD**
4L	140 feet	600 feet	885 feet	1,000 feet	500 feet	500 feet
22R	2,696 feet	600 feet	140 feet	1,000 feet		

Source: Landrum & Brown, FAA AC 150/5300-13A, *Airport Design*

Maintaining sufficient runway length, as close to the existing takeoff and landing length as possible, is needed to accommodate the existing and projected fleet on Runway 4L/22R. In particular, a takeoff distance available shorter than 11,219 feet on Runway 22R on hot weather days, could result in operational restrictions for Boeing 747s, Boeing 777s, Airbus 340s, Airbus 330s, McDonnell Douglas MD11s, McDonnell Douglas DC10s, Airbus 300s, Airbus 310s, Airbus 380s, Boeing 767-400s, and other long-haul Boeing 767s. The eastbound departures that are not able to takeoff from the shorter Runway 22R would have to use Runway 31L, and consequently cross the Runway 22R departure path. This would result in a loss of departure slots on Runway 22R for every eastbound full-length departure on Runway 31L. Air traffic controllers are conservative when operating both Runway 22R and Runway 31L for departures because airspace constraints result in the merging of both departure flows. In order to ensure departures are properly spaced in the air, air traffic controllers have to apply lengthy wait times between an eastbound departure on Runway 31L and a departure on Runway 22R. The loss of departure slots on Runway 22R would cause an increase in departure delays.

Complying with RSA standards would shorten the landing distance available for arrivals on Runway 22R from 8,655 feet to 7,795 feet. The shorter Runway 22R landing distance would be critical for Boeing 747s, Airbus 340s, McDonnell Douglas MD11s, and McDonnell Douglas DC10s in wet conditions. Without improvements that would offer additional length, these aircraft would have to land on Runway 22L.

2.1.2 REHABILITATE RUNWAY 4L/22R

Runway 4L/22R was originally constructed in 1948 as an 8,000-foot 150-foot wide concrete runway. A 3,351-foot long concrete extension was constructed south of the Bay Runway (Runway 13R/31L) in 1964. The runway is currently 11,351 feet long and 150 feet wide. The existing shoulder pavement is 25 feet wide and the erosion control pavement is 40 feet wide and is a mix of full depth asphalt and asphalt overlaid concrete. The original concrete runway has also since been overlaid with asphalt to accommodate larger aircraft. As shown in **Table 2-2, *Runway Use Percentages***, Runway 4L/22R is primarily used as a departure runway with a majority of the departures occurring on Runway 22R.

Table 2-2
RUNWAY USE PERCENTAGES
John F. Kennedy International Airport

RUNWAY	PERCENT OF ARRIVAL OPERATIONS	PERCENT OF DEPARTURE OPERATIONS
4L	**3.1%**	**17.8%**
4R	17.6%	0.1%
13L	12.0%	0.6%
13R	0.7%	13.1%
22L	28.7%	0.4%
22R	**2.7%**	**26.1%**
31L	9.2%	41.3%
31R	26.0%	0.6%
Total	100%	100%

Note: Percentages are based on ANOMS data from June 1, 2012 through May 31, 2013.

The runway was last rehabilitated in 1999 and interim repairs were performed to the southern 1,300 feet of the runway in 2008. However, on-going aircraft operations on the runway have resulted in continued deterioration of the existing asphalt pavement. Therefore, rehabilitation of this runway is necessary in order to safely accommodate aircraft operations. The Port Authority has determined that concrete would be used for the rehabilitation of the runway because it has a lower life cycle cost compared to asphalt and is the least disruptive to Airport operations during future maintenance paving.

2.1.3 WIDEN RUNWAY 4L/22R TO COMPLY WITH FAA DESIGN STANDARDS

The existing dimensions of Runway 4L/22R designate it as an ADG V runway (aircraft with wingspans up to 213 feet). However, JFK operates Runway 4L/22R under a Modification of Standard that allows this runway to accommodate ADG VI aircraft (aircraft with wingspans of 214 feet, but less than 262 feet). To comply with standards for ADG VI aircraft and eliminate the Modification of Standard, Runway 4L/22R needs to be widened to 200 feet from the present 150 feet.

The Port Authority has identified the need to perform the runway rehabilitation, the runway widening, and the RSA compliance projects at approximately the same time in order to avoid numerous runway closures and minimize impact to Airport operations.

2.2 HOW THE PROPOSED ACTION ADDRESSES THE NEEDS

2.2.1 COMPLY WITH FAA RSA STANDARDS

Displace the Runway 4L arrival threshold 460 feet to the north to provide 600 feet of required undershoot RSA for Runway 4L to comply with FAA design standards: This element addresses the need to comply with RSA standards as described in Section 2.1.1. Displacing the Runway 4L arrival threshold 460 feet to the north allows for 600 feet of required undershoot prior to landing for arrivals on Runway 4L.

Construct 728 feet of new runway pavement on the north side of Runway 4L/22R to maintain adequate departure length on Runway 22R while providing the required 1,000 feet of overrun RSA for Runway 22R to comply with FAA design standards: This element addresses the need to comply with RSA standards, while maintaining sufficient runway length to accommodate current and projected fleet as described in Section 2.1.1. As previously mentioned, the existing RSA on the south end of Runway 4L/22R does not comply with the required 1,000 feet of required overrun for Runway 22R departing aircraft. To comply with FAA AC 150/5300-13A requirements, the existing departure length for operations on Runway 22R would be reduced by 860 feet by implementation of declared distances[1], resulting in 10,491 feet in available departure length. To offset the reduction, it was determined an additional 728 feet of pavement would be added to the north resulting in 11,219 feet of available departure length. The additional pavement would also make the best use of the existing taxiway infrastructure by intersecting with Taxiway E.

2.2.2 REHABILITATE RUNWAY 4L/22R

Rehabilitate Runway 4L/22R using concrete, replacing the existing asphalt: This element addresses the need to rehabilitate and widen Runway 4L/22R described in Section 2.1.2.

2.2.3 WIDEN RUNWAY 4L/22R

Widen Runway 4L/22R from 150 to 200 feet to comply with FAA design standards: This element addresses the need to rehabilitate and widen Runway 4L/22R described in Section 2.1.3.

[1] The distance the airport owner declares available for the airplane's takeoff run, takeoff distance, accelerate-stop distance, and landing distance requirements.

2.2.4 MODIFY TAXIWAY SYSTEM

Construct new taxiway exits leading to the central terminal area, new taxiway access points to the north end of the runway, and other taxiway modifications to conform to the rehabilitation, widening, and reconfiguration of Runway 4L/22R: The taxiway improvements do not individually address one of the stated needs. However, they support the elements that address the need to rehabilitate and widen Runway 4L/22R and to comply with FAA RSA standards.

2.2.5 Acquire and Convey Land, Relocate Facilities, Modify Roadways, Reconfigure Navigational Aid System, and Update Flight Procedures

The following elements of the Proposed Action do not individually address one of the stated needs. However, they support the implementation of the elements that do address the stated needs.

- Acquire land from and convey land to the New York City Economic Development Corporation (NYCEDC); relocate Patrol Road, Airport security fence, and Guard Post 106; reconfigure and relocate a portion of the Port Authority Police Department (PAPD) impound parking lot; demolish and relocate the PAPD K9 facilities; install a visual screen; and decommission (dead-end) a portion of North Boundary Road located within the Aircraft Operations Area (AOA).
- Relocate Runway 4L localizer.
- Relocate Runway 4L glide slope (GS) to account for the Runway 4L displaced arrival threshold location and to place the GS out of the RSA lateral to the runway.
- Relocate Precision Approach Path Indicators (PAPI), Runway Visual Range (RVR), runway distance-to-go signs, and reconfigure runway signs and runway lighting to conform to the reconfigured Runway 4L.
- Install Runway End Identifier Lighting (REIL) for Runway 4L.
- Install PAPI, runway distance-to-go signs, and reconfigure runway signs and runway lighting to conform to the reconfigured Runway 22R.
- Update the arrival and departure procedures due to the reconfiguration of Runway 4L/22R.

2.3 IMPLEMENTATION PHASING

Construction of the Proposed Action is planned to begin in March 2014 with the full closure of the runway anticipated in June 2015. The runway is scheduled to reopen in December 2015 with all major construction completed. The closure of Runway 4L/22R would not exceed 180 days. The construction is planned to occur in three stages which would allow at least three runways to remain operational at all times during construction. The Port Authority would minimize interruptions to operations by scheduling runway closures during the overnight hours and during times agreed upon with the local Air Traffic Control. The proposed preliminary construction schedule is described below:

- March 2014: Mobilize and construct underground infrastructure.
- April 2014: Construct north of Runway 13L/31R and begin to relocate the navigation aids.
- March 2015: Construct the Runway 13L/31R intersection.
- April 2015: Construct south of Runway 13L/31R.
- August 2015: Construct the Runway 13R/31L intersection.
- December 2015: Complete Proposed Action and open runway for aircraft arrivals and departures.

2.4 REQUIRED LAND USE/ENVIRONMENTAL PERMITS

Federal

- FAA approval of the Airport Layout Plan (ALP)
- Federal environmental approval pursuant to National Environmental Policy Act of 1969 (NEPA)

State

- New York State Department of State (NYSDOS) Consistency with Coastal Zone Management
- New York State Department of Environmental Conservation (NYSDEC) State Pollution Discharge Elimination System permit.
- Preparation of a NYSDEC Stormwater Pollution Protection Plan.

City

- New York City Economic Development Corporation (NYCEDC) approval for transfer of property.[2]

[2] See Appendix A, *Agency Coordination* for the signed First Amendment to the Lease between the Port Authority and the NYEDC.

Chapter 3

CHAPTER 3
ALTERNATIVES

The Council on Environmental Quality (CEQ) regulations implementing the National Environmental Policy Act (NEPA) requires that the Federal Aviation Administration (FAA), as Federal decision-maker for this project, perform the following tasks when preparing an Environmental Assessment (EA):

- Evaluate all reasonable alternatives, including alternatives not within the jurisdiction of the Federal agency, and for alternatives which were eliminated from detailed study, briefly discuss the reasons for their having been eliminated.
- Devote substantial treatment to each alternative considered in detail, including the No-Build/No-Action Alternative and the Proposed Action, so that reviewers may evaluate their comparative merits.

This section describes the Proposed Action and alternatives to the Proposed Action, including the No-Build/No-Action Alternative, and evaluates the ability of each to meet the Purpose and Need described in Chapter 2, *Purpose and Need*. The Proposed Action, described later in this section, would fulfill the Purpose and Need for the project. The No-Build/No-Action Alternative would not meet the Purpose and Need, however, it is analyzed in the EA, pursuant to the requirements of the CEQ, FAA Orders 1050.1E, 5050.4B and NEPA.

Federal and state guidelines concerning the environmental review process require that all prudent, feasible, reasonable, and practicable alternatives that might accomplish the objectives of a project be identified and evaluated. Federal agencies may consider the applicant's purposes and needs and common sense realities of a given situation in the development of alternatives.[1] Federal agencies may also afford substantial weight to the alternative preferred by the applicant, provided there is no substantially superior alternative from an environmental standpoint.

As described in Chapter 1, *Introduction and Background*, a Draft EA for this project, *Runway 4L/22R Improvements, John F. Kennedy International Airport,* was prepared and published for public review and comment in May 2012. The Proposed Action from the May 2012 Draft EA included the following major elements:

- Relocate the Runway 4L end 460 feet to the north.
- Construct 728 feet of new runway pavement on the north side of Runway 4L/22R to maintain adequate departure length on Runway 22R while providing the required 1,000 feet of overrun RSA to comply with FAA design standards.
- Rehabilitate Runway 4L/22R using concrete, replacing the existing asphalt.
- Widen Runway 4L/22R from 150 to 200 feet.
- Relocate the displaced landing (arrival) threshold on Runway 22R 3,316 feet to the north.

[1] Guidance Regarding NEPA Regulations, CEQ, 48 *Federal Register* 34263 (July 28, 1983).

Two of the elements, the relocation of the Runway 22R arrival threshold 3,316 feet to the north and the relocation of the Runway 4L end (departure starting point) 460 feet to the north, would have resulted in aircraft being at lower altitudes, than existing conditions, over areas to the north of the runway, including Idlewild Park. The lower altitude of aircraft would have resulted in up to 800 trees in Idlewild Park becoming obstructions, as defined in FAA Order 8260.3B, United States Standard for Terminal Instrument Procedures (TERPS). FAA Order 8260.3B specifies the minimum measure of obstacle clearance that is considered by the FAA (the Federal authority) to supply a satisfactory level of vertical protection for aircraft operating at an airport. If the project described in the May 2012 Draft EA were to be implemented, up to 800 trees in Idlewild Park would have required removal to comply with FAA standards.

In order to minimize the number of trees to be removed from Idlewild Park, the Port Authority made the decision to redefine the proposed project. The Port Authority no longer proposes the relocation of the Runway 22R arrival threshold 3,316 feet to the north. The arrival threshold on Runway 22R would remain in its existing location, which does not result in lower landing elevations north of the Airport. Because there is no change to the Runway 22R arrival threshold, the high speed taxiway proposed for arrivals on Runway 22R is also no longer proposed in this Revised Draft EA. In addition, the revised project no longer proposes the relocation of the Runway 4L departure starting point. As a result the Proposed Action, described in the May 2012 Draft, has been redefined and this Revised Draft EA has been prepared. The Proposed Action presented in this Revised Draft EA includes the following major elements:

- Displace the Runway 4L arrival threshold 460 feet to the north to provide 600 feet of required undershoot RSA to comply with FAA design standards.
- Construct 728 feet of new runway pavement on the north side of Runway 4L/22R to maintain adequate departure length on Runway 22R while providing the required 1,000 feet of overrun RSA to comply with FAA design standards.
- Rehabilitate Runway 4L/22R using concrete, replacing the existing asphalt.
- Widen Runway 4L/22R from 150 to 200 feet.

The major elements **removed** from the Proposed Action presented in the May 2012 Draft EA were:

- Relocation of the Runway 22R arrival threshold 3,316 feet to the north; and
- Relocation of the Runway 4L departure end 460 feet to the north.

3.1. ALTERNATIVES CONSIDERED BUT ELIMINATED FROM FURTHER CONSIDERATION

Numerous alternatives were considered in this EA, but were eliminated from further detailed environmental review if the alternative did not comply with FAA RSA requirements, accommodate current and projected aircraft fleet, or resulted in extreme economic or environmental impacts. Based on the results of a runway length analysis, at least 11,219 feet of available runway length for departures is required to accommodate current and projected aircraft fleet. The alternatives are categorized as rehabilitation and widening alternatives or RSA alternatives. Both categories of alternatives are described in the following sections. **Table 3-1**, ***Alternatives Analysis Summary***, located at the end of this section, provides a summary of the RSA alternatives analysis conducted as part of this EA process. The major elements of each alternative are described in the table along with a determination of if the alternative would be carried forward for further environmental analysis.

3.1.1 Rehabilitation and Widening Alternatives

The Port Authority developed alternatives for the rehabilitation and widening of Runway 4L/22R. Two pavement options (Portland concrete or asphalt) and two runway widths (150 feet wide or 200 feet wide) were studied. The two criteria used in the evaluation of the rehabilitation and widening alternatives were 1) attaining the lowest estimated life-cycle cost and 2) complying with FAA standards for an Airplane Design Group (ADG) VI aircraft. The recommended alternative was to rehabilitate the runway 200-feet wide with Portland cement concrete. This alternative would accommodate Airplane Design Group (ADG) VI aircraft and would have a lower estimated life-cycle cost.

3.1.2 RSA Alternatives

As part of the 2006[2] and 2009[3] RSA Studies at JFK a range of alternatives, to address RSA deficiencies, were developed based on FAA Order 5200.8, *RSA Program, Appendix 2 (Supporting Documentation for RSA Determinations)*. The alternatives were evaluated based on a range of criteria including potential cost, environmental issues, and projected impact on current and projected aircraft operations.

FAA Order 5200.8 establishes various alternative concepts to be considered for obtaining or correcting RSAs. The alternatives vary depending on the unique factors and location of a specific airport. In general, the first alternative is always constructing the traditional graded area surrounding the runway. However when this is not practical the other alternatives can include:

[2] Runway Safety Area Analysis Study, John F. Kennedy International Airport, Ricondo & Associates, Inc, September 2006

[3] John F. Kennedy International Airport Runway Safety Area Analysis 4L/22R and 13L/31R, Landrum & Brown, August 2009.

a) Relocation, shifting, or realignment of the runway;

b) Reduction in runway length where the existing runway length exceeds that which is required for the existing or projected design aircraft;

c) A combination of runway relocation, shifting, grading, realignment, or reduction;

d) Declared distances; and

e) Engineered Materials Arresting Systems (EMAS).

In evaluating various alternative concepts, JFK's constrained location had to be taken into account. The Airport is located in Jamaica, New York in the Borough of Queens. The south end of Runway 4L/22R is limited by the Jamaica Bay National Wildlife Area and wetlands. On the north end of Runway 4L/22R, both natural and manmade facilities limit the ability to obtain the necessary RSA. These include jurisdictional wetlands, road alignments, and the Airport property boundary.

RSA Alternatives Screening

A multi-step evaluation process took place for this EA to evaluate the various alternative concepts. The airfield alternatives were evaluated against the following criteria:

- Does the alternative comply with FAA RSA requirements and other airport design standards?
- Does the alternative maintain adequate runway length to accommodate current and projected aircraft fleet at JFK (i.e., at least 11,219 feet of takeoff available distance for departures on Runway 22R)?
- Is the alternative reasonable/feasible from an economic and environmental perspective?

The following discussion documents the various options that were analyzed in the alternatives analysis and the recommendation of the alternative(s) for further detailed environmental review in this EA. This EA evaluates five (5) development alternatives along with the No-Build/No-Action alternative.

Alternative A (No-Build/No-Action)

Alternative A is the No-Build/No-Action alternative. This alternative would result in Runway 4L/22R remaining unchanged from existing conditions.

Pros

- Maintains adequate runway length (i.e., at least 11,219 feet of takeoff available distance for departures on Runway 22R) to accommodate current and project aircraft fleet
- No economic or environmental impacts

Cons

- Does not comply with FAA RSA requirements and other airport standards

Conclusion: Alternative A would not comply with FAA RSA requirements and other airport design standards. However, Alternative A will be carried forward as required by the Council on Environmental Quality (CEQ).

Alternative B

Alternative B would construct an additional 460 feet of RSA (existing 140 feet + additional 460 feet = required 600 feet) to the south of Runway 4L, which results in a fully compliant RSA to Runway 4L. However, in order to accomplish this, land reclamation (fill in Jamaica Bay) would be required. The takeoff available distance for Runway 22R departures would be reduced to 10,951 feet after complying with the 1,000 feet of required RSA overrun.

Pros

- Complies with FAA RSA requirements and other airport standards

Cons

- Does not maintain adequate runway length (i.e., at least 11,219 feet of takeoff available distance for departures on Runway 22R) to accommodate current and projected aircraft fleet
- Extensive land reclamation is required off the end of runway into Jamaica Bay

Conclusion: Alternative B would comply with FAA RSA requirements and other airport design standards. However, Alternative B was not carried forward for detailed environmental review because the alternative does not maintain adequate runway length to accommodate current and projected aircraft fleet for departures on Runway 22R and due to the extensive economic and environmental issues associated with land reclamation in Jamaica Bay, as compared to the other alternatives.

Alternative C

Alternative C would displace the Runway 4L arrival threshold 460 feet to the north and declare that portion of the runway as RSA for arrival operations on Runway 4L (existing 140 feet RSA + additional 460 feet RSA = required 600 feet RSA). The takeoff available distance for Runway 22R departures would be reduced to 10,491 feet after complying with the 1,000 feet of required RSA overrun.

Pros

- Complies with FAA RSA requirements and other airport standards
- Economically and environmentally reasonable/feasible

Cons

- Does not maintain adequate runway length (i.e., at least 11,219 feet of takeoff available distance for departures on Runway 22R) to accommodate current and projected aircraft fleet

Conclusion: Alternative C would comply with FAA RSA requirements and other airport design standards. However, Alternative C was not carried forward for detailed environmental review because the alternative does not maintain adequate runway length to accommodate current and projected aircraft fleet for departures on Runway 22R.

Alternative D

Alternative D would displace the Runway 4L arrival threshold 460 feet to the north and declare that portion of the runway as RSA for arrival operations on Runway 4L (existing 140 feet RSA + additional 460 feet RSA = required 600 feet RSA). In addition, 324 feet of runway pavement would be added to the north end of Runway 22R. This would allow for the Runway 22 departure starting point to relocate 324 feet to the north. The takeoff available distance for Runway 22R departures would be reduced to 10,815 feet after complying with the 1,000 feet of required RSA overrun.

Pros

- Complies with FAA RSA requirements and other airport standards
- Economically and environmentally reasonable/feasible

Cons

- Does not maintain adequate runway length (i.e., at least 11,219 feet of takeoff available distance for departures on Runway 22R) to accommodate current and projected aircraft fleet

Conclusion: Alternative D would comply with FAA RSA requirements and other airport design standards. However, Alternative D was not carried forward for detailed environmental review because the alternative does not maintain adequate runway length to accommodate current and projected aircraft fleet for departures on Runway 22R.

Alternative E

Alternative E would displace the Runway 4L arrival threshold 460 feet to the north and declare that portion of the runway as RSA for arrival operations on Runway 4L (existing 140 feet RSA + additional 460 feet RSA = required 600 feet RSA). In addition, 509 feet of runway pavement would be added to the north end of Runway 22R. This would allow for the Runway 22 departure starting point to be relocated 509 feet to the north. The takeoff available distance for Runway 22R departures would be reduced to 11,000 feet after complying with the 1,000 feet of required RSA overrun.

Pros

- Complies with FAA RSA requirements and other airport standards
- Economically and environmentally reasonable/feasible

Cons

- Does not maintain adequate runway length (i.e., at least 11,219 feet of takeoff available distance for departures on Runway 22R) to accommodate current and projected aircraft fleet

Conclusion: Alternative E would comply with FAA RSA requirements and other airport design standards. However, Alternative E was not carried forward for detailed environmental review because the alternative does not maintain adequate runway length to accommodate current and projected aircraft fleet for departures on Runway 22R.

Alternative F (Proposed Action)

Alternative F would displace the Runway 4L arrival threshold 460 feet to the north and declare that portion of the runway as RSA for arrival operations on Runway 4L (existing 140 feet RSA + additional 460 feet RSA = required 600 feet RSA). In addition, 728 feet of runway pavement would be added to the north end of Runway 22R. This would allow for the Runway 22 departure starting point to be relocated 728 feet to the north. The takeoff available distance for Runway 22R departures would be 11,219 feet after complying with the 1,000 feet of required RSA overrun.

Pros

- Complies with FAA RSA requirements and other airport standards
- Maintains adequate runway length (i.e., at least 11,219 feet of takeoff available distance for departures on Runway 22R) to accommodate current and projected aircraft fleet
- Economically and environmentally reasonable/feasible

Cons

- None.

Conclusion: Alternative F would comply with FAA RSA requirements and other airport design standards. In addition, Alternative F would maintain adequate runway length to accommodate current and projected aircraft fleet and would be economically and environmentally reasonable and feasible. As a result Alternative F was carried forward for detailed environmental review.

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Table 3-1
ALTERNATIVES ANALYSIS SUMMARY
John F. Kennedy International Airport

Alternative	Description of Changes to Runway 4L/22R	Meet Screening Criteria?	Carried Forward for Detailed Environmental Review?
A (No-Build/ No-Action)	• No change from the existing runway	• Does **not** comply with FAA RSA requirements • Maintains adequate runway length • Economically and environmentally reasonable/feasible	Yes (as required by CEQ)
B	• Construct 460' of pavement south of Runway 4L/22R • 4L Arrival Threshold - No change • 4L Departure Starting Point - No change • 22R Arrival Threshold - No change • 22R Departure Starting Point - No change	• Complies with FAA RSA requirements • Does **not** maintain adequate runway length • **Not** economically and environmentally reasonable/feasible	No
C	• No additional runway pavement • 4L Arrival Threshold - Displace 460' to the north • 4L Departure Starting Point - No change • 22R Arrival Threshold - No change • 22R Departure Starting Point - No change	• Complies with FAA RSA requirements • Does **not** maintain adequate runway length • Economically and environmentally reasonable/feasible	No
D	• Construct 324' of pavement north of Runway 4L/22R • 4L Arrival Threshold - Displace 460' to the north • 4L Departure Starting Point - No change • 22R Arrival Threshold - No change • 22R Departure Starting Point - Relocate 324' to the north	• Complies with FAA RSA requirements • Does **not** maintain adequate runway length • Economically and environmentally reasonable/feasible	No
E	• Construct 509' of pavement north of Runway 4L/22R • 4L Arrival Threshold - Displace 460' to the north • 4L Departure Starting Point - No change • 22R Arrival Threshold - No change • 22R Departure Starting Point - Relocate 509' to the north	• Complies with FAA RSA requirements • Does **not** maintain adequate runway length • Economically and environmentally reasonable/feasible	No
F (Proposed Action)	• Construct 728' of pavement north of Runway 4L/22R • 4L Arrival Threshold - Displace 460' to the north • 4L Departure Starting Point - No change • 22R Arrival Threshold - No change • 22R Departure Starting Point - Relocate 728' to the north	• Complies with FAA RSA requirements • Maintains adequate runway length • Economically and environmentally reasonable/feasible	Yes

Note: Shaded alternatives indicate those carried forward for detailed environmental review.

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3.2 ALTERNATIVES SELECTED FOR FURTHER EVALUATION IN THIS EA

As a result of the evaluations previously described, the only development alternative carried forward for further evaluation is the Proposed Action presented in this Revised Draft EA (Alternative F). As discussed previously, the No-Build/No-Action Alternative will also be carried forward as required by FAA Orders 1050.1E, 5050.4B and NEPA.

3.2.1 PROPOSED ACTION ALTERNATIVE

The following describes the elements of the Proposed Action and how the Proposed Action addresses the stated purpose and needs described in Chapter 2:

Comply with FAA RSA Standards

Displace the Runway 4L arrival threshold 460 feet to the north to provide 600 feet of required undershoot RSA for Runway 4L to comply with FAA design standards

The current landing threshold on Runway 4L is not displaced. The RSA prior to landing on Runway 4L is currently 140 feet in length, which does not comply with the required 600 feet of undershoot RSA for arrivals as specified by the FAA AC 150/5300-13A, *Airport Design.* Therefore the arrival threshold of Runway 4L needs to be displaced 460 feet to the north, resulting in a required undershoot RSA of 600 feet prior to the landing threshold of Runway 4L. The arrival threshold relocation would require remarking the pavement but would not include adding new pavement to the end of the runway. There would be no change to departures on Runway 4L. See Exhibit 1-5 for a depiction of these elements of the Proposed Action.

Construct 728 feet of new runway pavement on the north side of Runway 4L/22R to maintain adequate departure length on Runway 22R while providing the required 1,000 feet of overrun RSA for Runway 22R to comply with FAA design standards

As previously stated, the existing RSA on the south end of Runway 4L/22R is 140 feet in length versus the required 1,000 feet of overrun for Runway 22R departing aircraft. To comply with FAA AC 150/5300-13A requirements, the existing departure length for operations on Runway 22R would be reduced by 860 feet by means of declared distances[4] to create the required 1,000 foot RSA (existing 140 feet + 860 feet = 1,000 feet), reducing the available departure length to 10,491 feet. To offset this reduction in available departure length, it was determined an additional 728 feet of runway pavement would be needed on the north end of the runway resulting in 11,219 feet of available departure length, which is a net decrease of 132 feet from the existing 11,351 feet. The additional runway pavement would intersect Taxiway E to provide access to the runway. A runway length analysis determined that an 11,219 foot runway would be needed to continue to accommodate the current and projected aircraft fleet. See Exhibit 1-4 for a depiction of these elements of the Proposed Action.

[4] The distance the airport owner declares available for the airplane's takeoff run, takeoff distance, accelerate-stop distance, and landing distance requirements.

Rehabilitate Runway 4L/22R

Rehabilitate Runway 4L/22R using concrete, replacing the existing asphalt

Runway 4L/22R was last rehabilitated in 1999. Interim repairs were performed to the southern 1,300 feet of the runway in 2008. However, on-going aircraft operations on the runway have resulted in continued deterioration of the existing asphalt pavement. Therefore, rehabilitation of this runway is necessary in order to safely accommodate aircraft operations. The runway rehabilitation would be completed in the same timeframe as the other projects in order to reduce runway closures and minimize impacts to Airport operations. The Proposed Action would replace the existing asphalt with concrete. A temporary concrete plant would be installed to produce concrete on site. This would minimize the need for concrete trucks to use major highways, which would help reduce traffic and emissions.

Widen Runway 4L/22R

Widen Runway 4L/22R from 150 to 200 feet to comply with FAA Design Standards

The Port Authority is required by FAA to widen Runway 4L/22R from 150 to 200 feet for operations of Airplane Design Group (ADG) VI aircraft during the rehabilitation to enhance safety. ADG is a classification of aircraft based on wingspan and tail height. The ADG VI aircraft include the Airbus 380, Boeing 747-8, and Boeing 747-8 Freighter aircraft. The Airbus 380 currently operates on Runway 4L/22R with a Modification of Standard waiver from the FAA.

Summary of Runway Elements

Table 3-2, *Runway Characteristics* provides a summary of the characteristics of Runway 4L/22R for the No-Build/No-Action and Proposed Action scenarios. Exhibit 1-8 provides a graphical depiction of the Proposed Runway 4L/22R characteristics. As previously stated, the existing RSA on the south end of Runway 4L/22R is 140 feet in length versus the required 1,000 feet of overrun for Runway 22R departing aircraft. To comply with FAA AC 150/5300-13A requirements, the existing departure length for operations on Runway 22R would be reduced by 860 feet by means of declared distances to create the required 1,000 foot RSA (existing 140 feet + 860 feet = 1,000 feet), reducing the available departure length to 10,491 feet. To offset this reduction in available departure length, it was determined an additional 728 feet of runway pavement would be needed on the north end of the runway resulting in 11,219 feet of available departure length. A runway length analysis determined that an 11,219 foot runway would be needed to continue to accommodate the current and projected aircraft fleet. As shown in the table and on the exhibit, the additional 728 feet of pavement added to the north end of the runway does not increase the takeoff available distance for departures on Runway 22R as compared to existing conditions, but actually decreases it by 132 feet. With the Proposed Action, the existing landing available distance would decrease by 182 feet on Runway 4L and decrease by 860 feet on Runway 22R.

Table 3-2
RUNWAY CHARACTERISTICS
John F. Kennedy International Airport

	NO-BUILD / NO-ACTION	PROPOSED ACTION	CHANGE
Runway 4L			
Pavement Length	11,351 feet	12,079 feet	+728 feet
Pavement Width	150 feet	200 feet	+50 feet
Takeoff available distance	11,351 feet	11,351 feet	0 feet
Landing available distance	11,351 feet	11,169 feet	-182 feet
Displaced arrival threshold	0 feet	460 feet	460 feet
Runway 22R			
Pavement Length	11,351 feet	12,079 feet	+728 feet
Pavement Width	150 feet	200 feet	+50 feet
Takeoff available distance	11,351 feet	11,219 feet	-132 feet
Landing available distance	8,655 feet	7,795 feet	-860 feet
Displaced arrival threshold	2,696 feet	3,424 feet	+728 feet

Source: PANYNJ, Landrum & Brown 2013

Upgrade Taxiway System

Add New High-Speed Taxiway GG

A new 30-degree angle taxiway (Taxiway GG) would be built between Taxiway H and Taxiway G to accommodate the displaced arrival threshold on Runway 4L. See Exhibit 1-3 for a depiction of this element of the Proposed Action.

Realign Taxiway E and Add New Taxiway EE

A portion of existing Taxiway E, north of Taxiway FB, does not comply with FAA design standards for ADG VI. In addition, to provide a more logical, direct, and efficient taxiway system to the new departure starting point on Runway 22R, the realignment of a parallel taxiway (Taxiway E) to Runway 4L/22R is included as part of the Proposed Action. This parallel taxiway would provide access for departures on Runway 22R. This realigned taxiway would begin at Taxiway B and connect to the existing Taxiway E at the end of Runway 22R. A new taxiway (Taxiway EE) would also be added between Taxiway FB and Taxiway E. This new taxiway would provide additional staging for aircraft departing on Runway 22R. See Exhibits 1-3 and 1-4 for a depiction of these elements of the Proposed Action.

Re-designate a Portion of Taxiway E to Taxiway DB

This re-designation would rename the older portion of Taxiway E west of Runway 22R, which would be renamed to Taxiway DB in the segment between Taxiway FB and Taxiway A. This is necessary because a new Taxiway E would connect to the proposed Runway 22R threshold. See Exhibits 1-3 and 1-4 for a depiction of this element of the Proposed Action.

Decommission the West Section of Existing Taxiway E between Taxiway FB and the Northern End of New Taxiway E

A portion of the existing Taxiway E, north of Taxiway FB, does not comply with FAA design standards for ADG VI. Therefore it would be decommissioned and reconstructed as part of the Proposed Action. The decommissioning of a portion of existing Taxiway E would be necessary to gain the increased efficiency provided by the new parallel Taxiway E. See Exhibits 1-3 and 1-4 for a depiction of this element of the Proposed Action.

Decommission Sections of Existing Taxiway ZA

With the realignment of Taxiway E, the portions of existing Taxiway ZA between Taxiway B and Taxiway YA would be decommissioned. See Exhibits 1-3 and 1-4 for a depiction of this element of the Proposed Action.

Extend Taxiway K4

On the north side of the runway, Taxiway K4 (existing Taxiway KC) would be extended to connect to Runway 4L/22R to comply with FAA design standards. See Exhibits 1-3 for a depiction of this element of the Proposed Action.

Widen and Rehabilitate Taxiway K

Taxiway K would be widened to 82 feet. On June 30, 2011 the FAA approved a Modification to Standard that conditionally approved the operation of ADG VI – Taxiway Design Group (TDG) 7 aircraft on 75-foot taxiways at JFK. TDG relates to the undercarriage dimensions of the aircraft. Taxiway/taxilane width and fillet standards, and in some instances, runway to taxiway and taxiway/taxilane separation requirements, are determined by TDG. Widening Taxiway K to 82 feet is required to bring Taxiway K into full compliance during rehabilitation as the pavement has deteriorated. See Exhibits 1-3 and 1-5 for a depiction of this element of the Proposed Action.

Widen Fillets for Taxiways K3, J, H, G, F, YA, C, ZA, and FB

Fillets would be widened at Taxiways K3, J, H, G, F, YA, C, ZA, and FB to accommodate ADG VI-TDG 7 aircraft. A fillet is the additional pavement on a junction or intersection of a taxiway with a runway, apron, or another taxiway, to ensure the prescribed taxiway edge safety margin is maintained when the pilot guides the aircraft around turns. See Exhibit 1-3 for a depiction of these elements of the Proposed Action.

Rehabilitate Runway 4L Hold Pad

The hold pad pavement, located on the west side of Runway 4L, has deteriorated and is in need of rehabilitation. See Exhibits 1-3 and 1-5 for a depiction of this element of the Proposed Action.

Acquire and Convey Land, Relocate Facilities, and Modify Roadways

Acquire land from and convey land to the New York City Economic Development Corporation (NYCEDC); relocate Patrol Road, Airport security fence, Guard Post 106; reconfigure and relocate a portion of the Port Authority Police Department (PAPD) impound parking lot; demolish and relocate the PAPD K9 facilities; install a visual screen; and decommission (dead-end) a portion of North Boundary Road within the AOA

As part of the Proposed Action the NYCEDC[5] property north of the runway (approximately 14.8 acres) would be acquired by the Port Authority to allow for the Runway 4L/22R projects. As part of the land acquisition, the Port Authority would convey approximately 2.4 acres of land to the NYCEDC (see Exhibit 1-7).

Patrol Road, the Airport security fence, and North Boundary Road run in an east/west direction approximately 320 to 350 feet north of Taxiway E. All three would be located within the proposed RSA for Runway 4L/22R and therefore need to be relocated. Patrol Road is located within the Airport security fence while North Boundary is located outside of the security fence but within the Airport property. At this time, a piece of private property would not be obtained within the program schedule to allow for the relocation of North Boundary Road. As a result, North Boundary Road would be decommissioned (dead-ended) from the corner with Eastern Road to the relocated Patrol Road, restricting access to facilities on the east side of Runway 4L/22R. A new driveway connecting Rockaway Boulevard to the Airport and North Boundary Road would be constructed and would be the only landside access to the facilities on the east side of Runway 4L/22R. Also approximately eight street light poles along the median of Rockaway Boulevard would be lowered to mitigate for Part 77 obstructions. Coordination and permitting are currently underway with the New York State Department of Transportation for the new access road and changes to the traffic light at the new road intersection.[6] Patrol Road and the Airport security fence would be relocated on the property acquired by the Port Authority from the NYCEDC, as shown in Exhibit 1-6. The relocation of Patrol Road and the Airport security fence would be implemented in a way that avoids impacting jurisdictional wetlands located to the north of Runway 4L/22R.

Guard Post 106 would be relocated approximately 800 feet east on North Boundary Road from the existing location just northeast of Building 254 on North Boundary Road (see Exhibit 1-6). The existing PAPD impound lot has 260 parking spaces and covers approximately 99,700 square feet. With the Proposed Action, the lot would be reconfigured and reduced to approximately 98 parking spaces and approximately 41,500 square feet. An additional impound lot would be located east of the new driveway from Rockaway Boulevard to North Boundary Road, as shown on Exhibit 1-6, and would accommodate approximately 60 parking spaces over approximately 23,720 square feet. With the Proposed Action there would be approximately 158 parking spaces available between the two impound lots, which

[5] See Appendix A, *Agency Coordination* for the signed First Amendment to the Lease between the Port Authority and the NYEDC.

[6] See correspondence in Appendix A, *Agency Coordination* between the Port Authority and the Department of Transportation.

would accommodate the PAPD's needs as the existing impound lot is underutilized. The additional PAPD impound lot would be located on previously disturbed land that is currently used by the PAPD K9 unit to train dogs and consists of a fenced area/dog run and a "bunker" used to train dogs. The fenced area/dog run would be relocated to a grassy area located next to the reconfigured impound lot and would be approximately 4,300 square feet. The "bunker" would be demolished and relocated southeast of the burn area[7] and would be approximately 7,400 square feet (see Exhibit 1-6).

The perimeter fence would be enhanced and a visual screen would be installed on the existing fence along Rockaway Boulevard (see Exhibit 1-3 and Exhibit 1-6). The screen would be approximately 1,600 feet long and would not exceed 14 feet in height. The intent of the screen is to aid in visually shielding the community from aircraft operations on the airport.

Site Navigational Aids

Relocate Runway 4L localizer to meet RSA requirements

The Proposed Action would relocate the Runway 4L localizer from its current location approximately 390 feet to the north along the extended runway centerline (see Exhibit 1-6). The localizer signal is used to establish and maintain the aircraft's horizontal position until visual contact confirms the runway alignment and location. The localizer antenna is made up of a group directional antennas oriented perpendicular to the runway. The localizer pad is approximately 100-foot by 10-foot. Electrical power would be supplied underground and would be extended from the nearest available source. The Proposed Action would relocate the localizer along the extended runway centerline north 600 feet from the future end of the extended runway pavement to protect it from jet blast impacts. This configuration maintains the current visibility minimums on the Runway 4L approach and would not impact the operational capability of the runway. This would require acquiring property from the NYCEDC and relocating Patrol Road and the Airport security fence.

Relocate Runway 4L glide slope (GS) to account for the Runway 4L displaced arrival threshold and to place the GS out of the RSA lateral to the runway

Placement of a GS antenna to serve a runway end must occur within a specified distance from the runway threshold, typically 800 feet to 1,200 feet beyond the landing threshold and not more than 600 feet laterally from the runway centerline. The GS signal is used to establish and maintain the aircraft's descent rate until visual contact confirms the runway alignment and location. A GS differentiates precision from non-precision approaches. Glide slope antennas are single pole antennas typically 30 to 50 feet in height. A glide slope consists of a shelter and antenna that is approximately 10-feet by 12-feet and a concrete pad that is approximately 10-foot by 10-foot. Electrical power would be supplied underground and would be extended from the nearest available source. The current Runway 4L GS shelter and antenna is located along the east side of Runway 4L.

[7] Area on Airport where Aircraft Rescue and Fire Fighting (ARFF) training occurs.

The GS is currently situated just inside the lateral limits of the RSA with the antenna being approximately 250 feet from the centerline of Runway 4L/22R. As part of this project the existing GS facilities would be relocated 460 feet to the north of its current position and sited to be outside of the RSA (see Exhibit 1-5).

Relocate Precision Approach Path Indicators (PAPI), Runway Visual Range (RVR), runway distance-to-go signs, and reconfigure runway signs and runway lighting to conform to the reconfigured Runway 4L

A PAPI consists of four lamps on a 5-foot by 5-foot concrete pad in a linear pattern with 30 feet between each lamp. Electrical power to the PAPI would be supplied underground and would be extended from the nearest available source. The PAPI system serving Runway 4L is located on the west side of the runway alignment. It would be relocated approximately 520 feet to the north to provide the appropriate glide path angle for visual reference. In addition, the runway threshold lights would be located to the position of the displaced threshold and placed in the ground lateral to the runway pavement (see Exhibit 1-5).

The RVR is required to support precision landing and takeoff operations. The system measures visibility, background luminance, and runway light intensity to determine the distance a pilot should be able to see down the runway. RVRs are a component of the Instrument Landing System (ILS) for the runway. Based on FAA Order 6560.10, the touchdown RVR shall be located no further than 1,000 feet from the center of the GS antenna toward the approach end of the runway and 1,500 feet from the center of the GS antenna down the runway.

An RVR consists of an antenna approximately 15 feet tall and a concrete pad that is approximately 5-feet by 5-feet. Electrical power would be supplied underground and would be extended from the nearest available source. Currently the RVR is located directly behind the GS. The proposed 460-foot northerly displacement of the Runway 4L arrival threshold to provide the required undershoot RSA length necessitates the relocation of the touchdown RVR for Runway 4L. The proposed RVR would be relocated to the east side of Runway 4L/22R and to the north approximately 330 feet (see Exhibit 1-5).

Associated with the relocation of the electronic navigational aids and PAPI system, the runway would need to be re-marked to include shifting the runway designation markings, and runway threshold markings to the position of the displaced Runway 4L arrival threshold. Additionally the runway aiming point markings and runway touchdown zone markings would also need to be relocated to account for the 460-foot displacement of the Runway 4L arrival threshold. Arrow markings prior to the displaced threshold and along the centerline of the runway would also be required to aid in identifying the displacement of the landing threshold.

Install Runway End Identifier Lighting (REIL) on Runway 4L

A REIL consists of a flashing white high-intensity light installed at each approach end corner of a runway. The lights are directed toward the approach zone, enabling the pilot to identify the runway threshold. These lights consist of two synchronized flashing unidirectional or omnidirectional (360 degree) lights, one on each side of

the runway threshold. REIL would be installed in the ground; at least 40 feet from the edge of the runway to account for the displaced arrival threshold on Runway 4L (see Exhibit 1-3 and 1-5).

Install PAPI, runway distance-to-go signs, and reconfigure runway signs and runway lighting to conform to the reconfigured Runway 22R

In the Proposed Action, a PAPI system serving Runway 22R would be installed to the east of the runway and south of the alignment of connector Taxiway G to provide the appropriate glide path angle for visual reference (see Exhibit 1-3). Associated with the relocation of the electronic navigational aids and PAPI system, the runway would need to be re-marked to include shifting the runway designation markings.

Update Flight Procedures

New Arrival and Departure Procedures

Several elements of the Proposed Action would require the FAA Flight Procedures Office to update the arrival and departure procedures on Runway 4L/22R. The elements include the displacement of the arrival threshold on Runway 4L and the relocation of the departure starting point on Runway 22R. The new departure starting point may result in aircraft turning at slightly different points and at a slightly higher altitude than existing conditions. These changes would need to be incorporated into FAA Flight Procedures for JFK. The new procedures are discussed in more detail in Appendix B, *Noise* pages B-8 through B-9. The new procedures were included in the impact assessments in Section 5.1, *Noise*, Section 5.3, *Socioeconomic Impacts, Environmental Justice, and Children's Environmental Health and Safety Risks,* and Section 5.7, *Department of Transportation Act: Section 4(f) Resources*.

3.2.2 NO-BUILD/NO-ACTION ALTERNATIVE

The No-Build/No-Action Alternative would result in Runway 4L/22R remaining unchanged from existing conditions, which is shown on Exhibit 1-2 in Chapter 1. Selection of the No-Build/No-Action Alternative would conflict with the Port Authority's obligation and commitment to the FAA, the Congressional mandate, the public, its tenants, and to bondholders to provide and maintain facilities at JFK in compliance with FAA standards and in support of the traveling public. Neither the objectives of the project nor the Port Authority's mission and responsibility would be met by this alternative.

The No-Build/No-Action Alternative would not fulfill the Purpose and Need for the project. This alternative would not comply with FAA RSA standards, rehabilitate Runway 4L/22R, or widen Runway 4L/22R. Presently, Runway 4L/22R does not meet the standards set forth in FAA AC 150/5300-13A. However, as discussed above, the No-Build/No-Action alternative is required by the CEQ to be evaluated in an EA. As such, this alternative will be carried forward in the EA and used as the baseline against which the Proposed Action will be evaluated.

Chapter 4

CHAPTER 4
AFFECTED ENVIRONMENT

Federal Aviation Administration (FAA) Order 5050.4B states that the affected environment section of an Environmental Assessment (EA) should succinctly describe only those environmental resources the proposed action and its reasonable alternatives, are likely to affect. The amount of information on a potentially affected resource should be based on the extent of the expected impact and be commensurate with the impact's importance.

The following describes the area around John F. Kennedy International Airport (JFK or Airport). This is followed by discussions of the resources that may potentially be impacted, which include noise, air quality, compatible land use, floodplains, water quality, and coastal resources. In accordance with Order 5050.4B, the other resource categories are not discussed in this chapter due to lack of presence of the resource in the project. Chapter 5, *Environmental Consequences,* includes a discussion about all of the resource categories, whether there are impacts to the category or not.

4.1 ENVIRONMENTAL SETTING

JFK is one of five airports operated by the Port Authority of New York and New Jersey (Port Authority), which serve the metropolitan New York and New Jersey areas and the Hudson Valley. Both JFK and LaGuardia Airport (LGA) are located in the Borough of Queens and Newark Liberty International Airport (EWR) is located in New Jersey. Teterboro Airport (TEB) is located in Bergen County, New Jersey. Stewart International Airport (SWF) is located in Newburgh/New Windsor, New York, 60 miles north of New York City. The Port Authority also has an agreement with the South Jersey Transportation Authority (SJTA) to perform certain general management services and functions for Atlantic City International Airport located in Egg Harbor Township, New Jersey.

The JFK runway system consists of two pairs of parallel runways: 4L/22R, 4R/22L, 13L/31R, and 13R/31L. The total runway length is nearly nine miles. JFK also has over 25 miles of taxiways to move aircraft in and around the airfield. In addition, there are five helipads.

4.1.1 ROAD ACCESS

Two divided highways provide access to JFK: the Van Wyck Expressway (VWE) and the John F. Kennedy Expressway (JFKE). The VWE (Interstate 678) is a six-lane divided highway extending in a north-south direction. The VWE serves as the primary access route for travelers destined to the Airport with connections to the east-west expressway network extending to Manhattan on the west and into Long Island in the east. The JFKE is a four to six-lane divided highway extending in a north-south direction located approximately 0.5 miles east of the VWE. The JFKE serves as a secondary access to the Airport with connections to the Nassau Expressway and the Belt Parkway.

4.1.2 ADJACENT WATERWAYS

JFK is bordered on three sides by surface water, including Jamaica Bay, Bergen Basin, Head of Bay, and the Thurston Basin. Jamaica Bay, bordering JFK to the south, receives input from Bergen Basin and Thurston Basin, which border JFK on the west and east, respectively. The waters of Jamaica Bay and Head of Bay are considered suitable for primary and secondary contact recreation (classified SB by the New York State Department of Environmental Conservation (NYSDEC)). Waters within the adjacent tributaries are considered suitable for secondary contact recreation (classified I by NYSDEC). Shell fishing for market purposes is not permitted in these areas. A large part of Jamaica Bay and its adjoining waterways and shoreline are components of the Gateway National Recreation Area, which includes a National Wildlife Refuge. Tidal wetlands, shallow, and deep-water habitats adjacent to the Airport are habitat for a diverse plant and avian population.

4.2 RESOURCES POTENTIALLY AFFECTED

4.2.1 AIR QUALITY

The Airport is located in Queens County, New York which is included in the New Jersey-New York-Connecticut Intrastate Air Quality Control Region (AQCR).[1] The New Jersey-New York-Connecticut Intrastate AQCR does not meet the Federal standard for the 8-hour concentration of ozone and the Federal standard for the 24-hour and annual arithmetic mean concentrations of fine particulate matter ($PM_{2.5}$). In the past, Queens County was designated as nonattainment for carbon monoxide (CO); however, on May 20, 2002, the U.S. Environmental Protection Agency (USEPA) determined the area had attained the CO standard and the region was re-designated to attainment for CO. The area now operates under a maintenance plan.

Climate

Research has shown there is a direct correlation between fuel combustion and GHG emissions. In terms of U.S. contributions, the General Accounting Office (GAO) reports that "domestic aviation contributes about three percent of total carbon dioxide emissions, according to EPA data," compared with other industrial sources including the remainder of the transportation sector (20 percent) and power generation (41 percent).[2] The International Civil Aviation Organization (ICAO)

[1] U.S. Environmental Protection Agency (USEPA), 40 CFR Part 81, Section 81.13, *New Jersey-New York-Connecticut Intrastate Air Quality Control Region* (December 23, 1980).
[2] *Aviation and Climate Change.* GAO Report to Congressional Committees, (2009).

estimates that GHG emissions from aircraft account for roughly three percent of all anthropogenic GHG emissions globally.[3] Climate change due to GHG emissions is a global phenomenon, so the affected environment is the global climate.[4]

The scientific community is continuing efforts to better understand the impact of aviation emissions on the global atmosphere. The FAA is leading and participating in a number of initiatives intended to clarify the role that commercial aviation plays in GHG emissions and climate. The FAA, with support from the U.S. Global Change Research Program and its participating federal agencies (e.g., National Aeronautics and Space Administration (NASA), National Oceanic and Atmospheric Administration (NOAA), Environmental Protection Agency (EPA), and Department Of Energy (DOE)), has developed the Aviation Climate Change Research Initiative (ACCRI) in an effort to advance scientific understanding of regional and global climate impacts of aircraft emissions. FAA also funds the Partnership for Air Transportation Noise & Emissions Reduction (PARTNER) Center of Excellence research initiative to quantify the effects of aircraft exhaust and contrails on global and U.S. climate and atmospheric composition. Similar research topics are being examined at the international level by the International Civil Aviation Organization.[5]

4.2.2 COASTAL RESOURCES

The Coastal Zone Management Act of 1972 established the Federal Coastal Zone Management Program to encourage and assist states in preparing and implementing management programs to "preserve, protect, develop, and, where possible, to restore or enhance the resources of the nation's coastal zone." Pursuant to the Act, New York State adopted its Waterfront Revitalization and Coastal Resources Act (WRCRA, 1981), which created the New York State Coastal Management Program (CMP) under direction of the New York State Department of the State (NYSDOS). The program encourages coordination among all levels of government to promote sound waterfront planning and requires government to consider the goals of the program in making land use decisions. JFK and much of its surroundings are located within the designated coastal zone and as such a Coastal Zone consistency concurrence is required from the New York Department of State for the Proposed Action. A copy of the Port Authority letter seeking NYSDOS concurrence on CMP and New York City's Concurrence on their New York City Waterfront Revitalization Program is included in Appendix A.

There are no coastal barriers or any areas subject to the Coastal Barriers Resources Act of 1982 or the Coastal Barriers Improvement Act of 1990 in the vicinity of JFK.

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[3] Alan Melrose, "European ATM and Climate Adaptation: A Scoping Study," in *ICAO Environmental Report.* (2010).

[4] As explained by the U.S. Environmental Protection Agency, "greenhouse gases, once emitted, become well mixed in the atmosphere, meaning U.S. emissions can affect not only the U.S. population and environment but other regions of the world as well; likewise, emissions in other countries can affect the United States." Climate Change Division, Office of Atmospheric Programs, U.S. Environmental Protection Agency, *Technical Support Document for Endangerment and Cause or Contribute Findings for Greenhouse Gases under Section 202(a) of the Clean Air Act* 2-3 (2009).

[5] Lourdes Q. Maurice and David S. Lee. *Chapter* 5: *Aviation Impacts on Climate.* Final Report of the International Civil Aviation Organization (lCAO) Committee on Aviation and Environmental Protection (CAEP) Workshop. October 29th November 2nd 2007, Montreal.

4.2.3 LAND USE

Land use in the JFK area consists of commercial and industrial developments, and residential areas ranging from detached single-family houses on 40- to 60-foot square lots to medium-density row houses and garden apartments. There are no large apartment buildings (14 stories or larger) in the immediate vicinity of JFK. To the north lies the Belt Parkway, the Queens neighborhoods of Ozone Park, and Jamaica. To the east lay Thurston Bay and the Five Towns area of Nassau County, Long Island. Located directly to the west are the Bergen Basin and the Howard Beach neighborhood of Queens. The Gateway National Recreation Area, which contains the Jamaica Bay Wildlife Refuge, borders the southern side of the Airport and is part of the National Park System. The land uses in the JFK area are shown in **Exhibit 4-1, Land Use**.

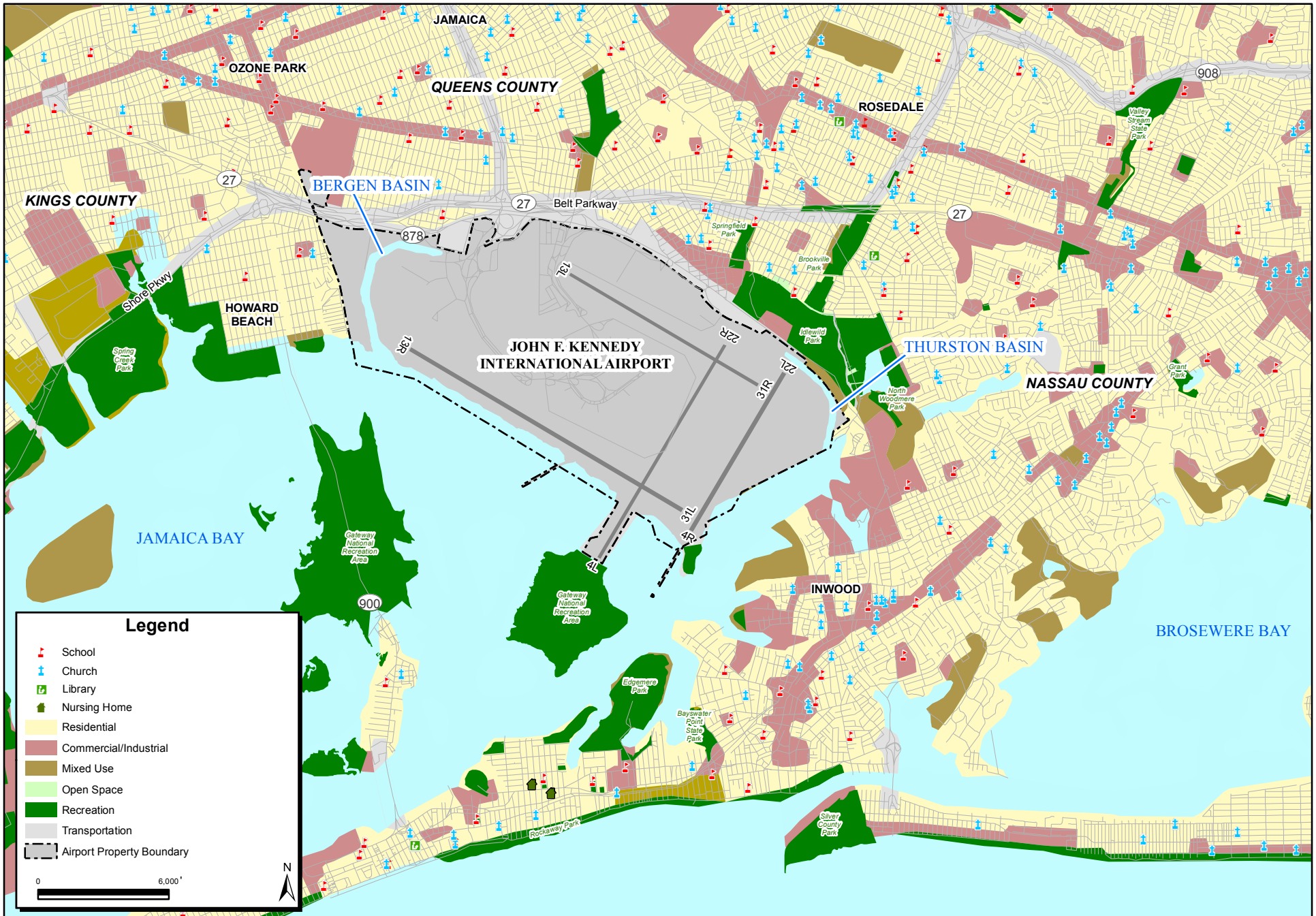
4.2.4 NOISE

The 65 DNL, 70 DNL, and 75 DNL Existing (2012/2013) noise exposure contours are shown on **Exhibit 4-2, *Existing (2012/2013) Noise Exposure Contours***. The Existing noise exposure contours were based on data from June 1, 2012 through May 31 2013, as it was the latest data available at the time the noise contours were prepared. For more information on the noise exposure contours see Appendix B, *Noise*.

4.2.5 FLOODPLAINS

Floodplains are defined by executive Order 11988, *Floodplain Management,* as "the lowland and relatively flat areas adjoining inland and coastal waters including flood prone areas of offshore islands, including at a minimum, that area subject to a one percent or greater chance of flooding in any given year." The Federal Emergency Management Agency (FEMA) has mapped the 100-year floodplains for JFK and the surrounding areas, as shown in **Exhibit 4-3, *Floodplains***. The Proposed Action occurs in an area that would encroach in the special flood hazard area subject to inundation by the 100-year floodplain. In 2013, after Hurricane Sandy, FEMA published Advisory Base Flood Elevation maps for New York City. The Advisory Base Flood Elevations along the shorelines of JFK are 10 feet for the 100-year flood event. The shoreline surrounding Runway 4L/22R is mapped as *AE*, indicating an area of high flood risk subject to inundation by the one percent annual-chance flood event.[6]

[6] http://fema.maps.arcgis.com/home/webmap/viewer.html



Environmental Assessment
4L/22R Rehab
John F. Kennedy International Airport

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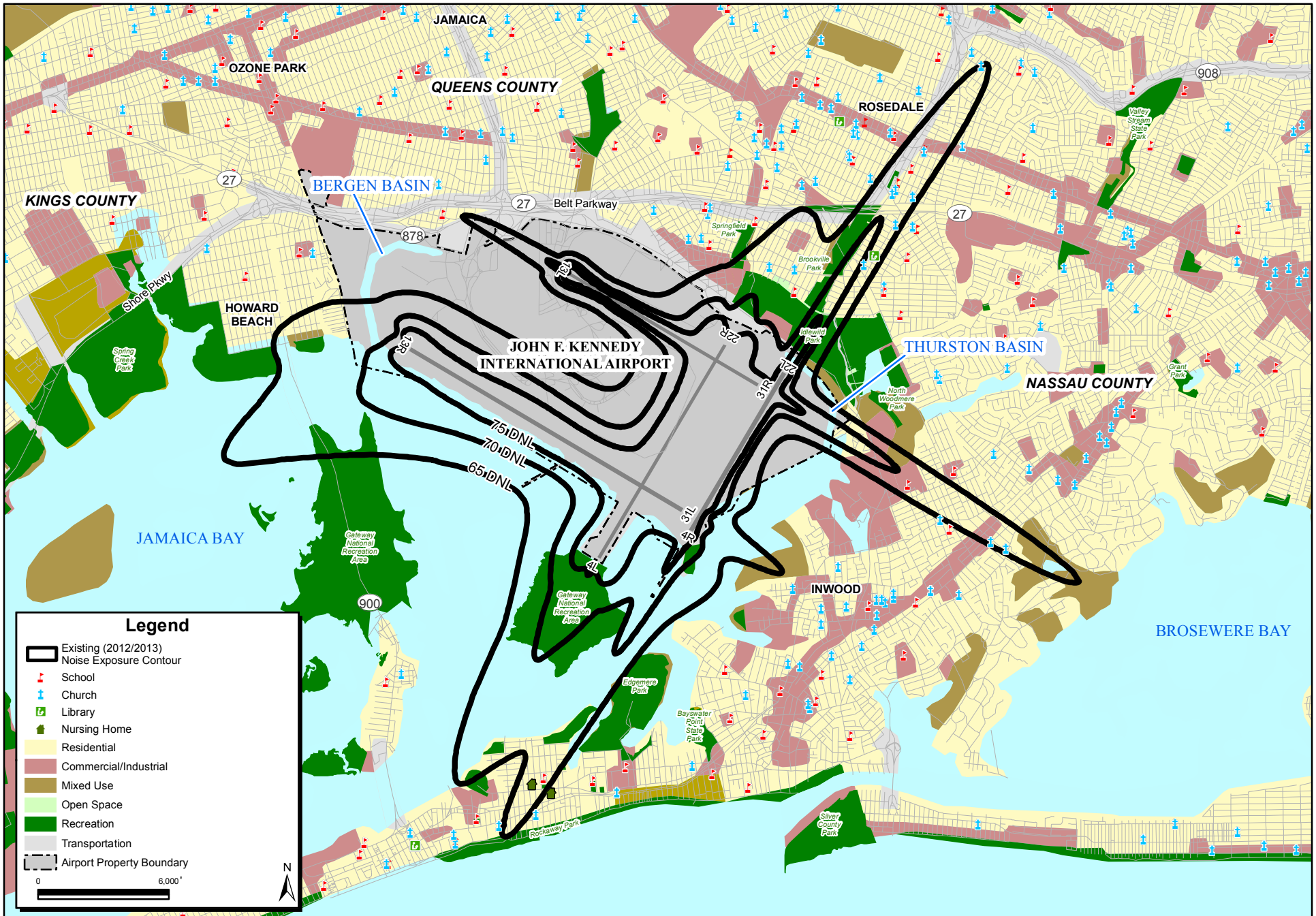
4-1_Land Use.mxd

Land Use

Exhibit:
4-1

BACK OF EXHIBIT 4–1, LAND USE



Environmental Assessment
4L/22R Rehab
John F. Kennedy International Airport

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Contour: JFK13dNoise-Contours

Existing (2012/2013) Noise Exposure Contour

Exhibit: **4-2**

BACK OF EXHIBIT 4–2, EXISTING CONDITIONS (2012/2013) NOISE EXPOSURE CONTOURS

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4L/22R Improvements
John F. Kennedy International Airport

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Floodplains

Exhibit:
4-3

BACK OF EXHIBIT 4–3, FLOODPLAINS

4.2.6 WATER QUALITY

JFK is bordered on three sides by surface water, including Jamaica Bay, Bergen Basin, Head of Bay, and the Thurston Basin. Brief descriptions of current water quality conditions at JFK follow.

Surface Water Resources

Jamaica Bay, bordering JFK to the south, currently covers an area of approximately 13,000 acres, including open waters, tidal flats, bordering marshes, and a number of islands. Jamaica Bay has been extensively modified through dredging and filling operations over the years due to development at JFK and surrounding areas.

Jamaica Bay is situated at the southwestern end of Long Island, as the westernmost of the island's large south shore bays. It is located primarily within the New York City boroughs of Brooklyn and Queens, with a small eastern portion extending into the Town of Hempstead in Nassau County, New York. The bay is protected by a barrier beach and it connects with the sea through Rockaway Inlet at its western end. The Jamaica Bay watershed, including the National Park Service and all other holdings is approximately 36,900 hectares (91,000 acres) in size; open water and wetlands extend for about 5,300 hectares (13,000 acres).

Jamaica Bay is embedded within a heavily urbanized region with extremely high population densities. According to 2010 U.S. Census Bureau estimates, there were 2,504,700 people residing in Brooklyn and 2,230,722 in Queens alone, part of the more than eight million population of New York City and the nearly 19 million of the New York City metropolitan region. Jamaica Bay has been characterized as a temperate, eutrophic estuary, with open water salinities ranging from about 20 to 26 parts per thousand (ppt), temperatures from one-degree Celsius to 26-degrees Celsius, and (Potential Hydrogen) pH from 6.8 to 9 (U.S. Fish and Wildlife Service (USFWS 1997). Muddy fine sand is the primary sediment of the eastern and northern portions of the bay, while fine to medium sands predominate in the higher energy southern and western sections nearer to Rockaway Inlet (USFWS 1997). Jamaica Bay's original average low tide depth of about three feet has been increased to 16 feet through landfilling of shallows, channel dredging, and the removal of sediments from "borrow" pits, some of which exceed 50 feet in depth. Because of these changes, the average residence time of a water molecule in the northern portion of the bay has risen from 11 days to 33 (New York City Department of Environmental Protection (NYCDEP 1994), with dredging accounting for a 70 percent increase in the volume of the bay (Rhoads et al. 2001). The bay's original network of freshwater and brackish creeks have been shortened, straightened, bulkheaded, and channelized, with two-thirds of the freshwater runoff diverted through four sewage treatment facilities. Thus, salinity gradients are now minimized within the system. Freshwater inputs total approximately one- half of one percent of the bay's volume per day (Rhoads et al. 2001).

Rockaway Inlet connects Jamaica Bay to the Lower Bay of New York Harbor. Although tidal waters enter the Bay at this location, with an average tidal range of five feet, there is limited exchange of fresh water with ocean water. As a result, pollutants may remain resident in the Bay for extended periods. The southern end of Runway 4L/22R is located along the Jamaica Bay shoreline while the northern end is separated from the water's edge by surface roadways, taxiways, and Runway 4R/22L.

Stormwater Runoff

JFK is serviced by an independent storm sewer system that collects stormwater runoff from the Airport and discharges to Jamaica Bay at 26 separate outfall locations. All sanitary waste from buildings/terminals is piped directly to the Jamaica Bay waste water control plant run by the NYCDEP. Runoff from parking areas, rooftops, runways, tarmacs, and landscaped areas is collected and transported in a closed system and discharged to the Bay. **Exhibit 4-4, *Outfalls***, illustrates the layout of the JFK stormwater management system.

In New York State, stormwater discharges are regulated by NYSDEC under the State Pollution Discharge Elimination System (SPDES) program. JFK currently holds an individual industrial SPDES Permit (Permit No. NY 0008109) that includes monthly monitoring requirements for specified water quality constituents. The constituents and their discharge limitations have been chosen in consultation with the NYSDEC to specifically address issues relating to Airport operations, including aircraft fueling and deicing.

The Proposed Action is located within drainage Areas I, J, K, L, and P (see Exhibit 4-4). Drainage Area I covers approximately six percent (300 acres) and services a northern section of the airport that includes primarily hangars and cargo buildings as well as the U.S. Post Office. This area drains through four sewer barrels to outfall 023 and discharges into Thurston Basin. Drainage Area J covers approximately 13 percent (606 acres) of JFK. This area includes aeronautical runways and taxiways, which discharge through outfall 017A. This area discharges into the Thurston Basin. Drainage Area K covers approximately 10 percent (484 acres) and includes terminals as well as aeronautical taxiways. Taxiways discharge through outfall 014. All outfalls from Drainage Area K discharge into Jamaica Bay. Drainage Area L covers approximately five percent (229 acres) of the Airport. This area includes aeronautical runways which discharge through outfall 015, outfall 016, and outfall 017 to the Jamaica Bay. Lastly, drainage Area P covers approximately five percent (225 acres) and includes aeronautical runways and taxiways that discharge through outfalls 017B into Jamaica Bay and outfall 019 into the Head of Bay.[7]

[7] *John F. Kennedy International Airport Best Management Practices Plan*, Prepared by Malcolm Pirnie, Inc. July 2009 (Revised August 2010).

Sanitary Wastewater

Four water pollution control plants (WPCPs) discharge treated wastewater effluent into the Bay and its tributaries: Jamaica WPCP (including JFK wastewater), Rockaway WPCP, Coney Island WPCP, and 26th Ward WPCP. During significant rainfall events, sanitary and stormwater collected in combined sewers overflow to Jamaica Bay in combined sewer overflows (CSOs). There are over 25 potential CSO locations around the Bay. All sanitary wastewater generated at JFK is conveyed to the Jamaica WPCP by the Airport sanitary sewer system.

The effects of these discharges on water quality vary across the Bay and its tributaries. The City of New York has monitored New York Harbor, including Jamaica Bay, for over the past 90 summers. Coliform levels, dissolved oxygen, algae growth and floating materials, suspended solids, and heavy metals are a few of the water quality indicators used. The City of New York has implemented various pollution control programs and is continually upgrading sewer systems and treatment facilities to support water quality enhancement.

Groundwater

JFK is located along the periphery of the Brooklyn/Queens aquifer system, which is part of the larger Long Island aquifer complex. The area is primarily underlain by sandy fill materials dredged from Jamaica Bay during Airport construction. Beneath the fill material are layers of organic material (marsh deposits) and glacial outwash deposits (sands, gravels with quantities of silts and clays). The marsh deposits are thought to act as an aquitard that inhibits downward migration of shallow groundwater.

Groundwater quality has been affected by past development in the region and surrounding communities. Recharge of groundwater at JFK is primarily accomplished through migration from Brooklyn and Nassau Counties and from precipitation. The increase in impervious surfaces from past development and the installation of a separate storm sewer system has resulted in significant reductions in groundwater recharge.

4.2.7 WETLANDS

Jamaica Bay, the Rockaway Peninsula, and the Atlantic Ocean border the airport to the south. The location of these bodies of water adjacent to JFK provides for an area of tidal wetlands that surrounds the airport. On the north end of Runway 4L/22R in the proposed project area there are approximately 2.72 acres of wetlands located between Rockaway Boulevard and North Boundary Road. The wetlands are shown in **Exhibit 4-5, *Wetlands***.

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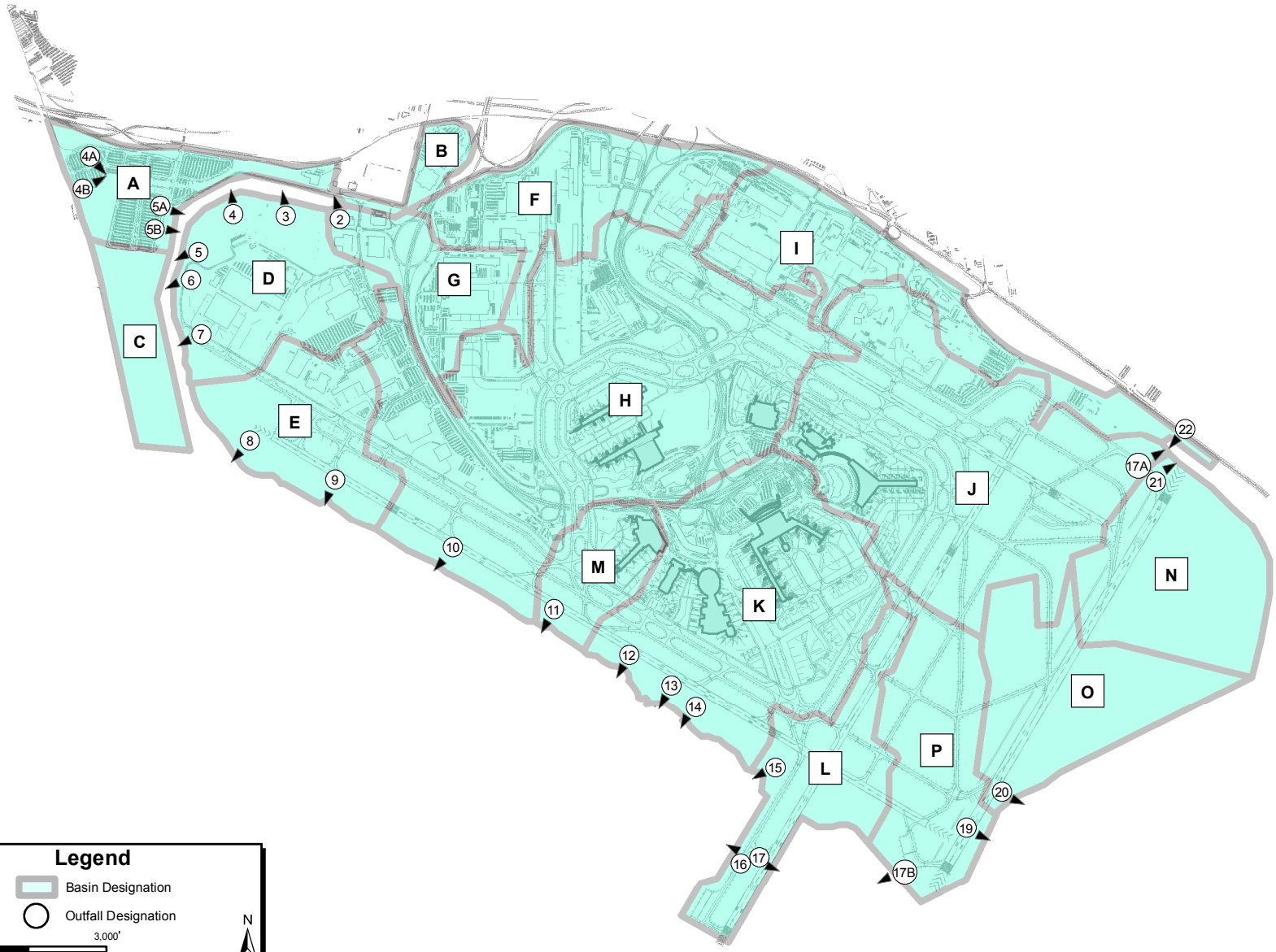

Legend

Basin Designation

Outfall Designation

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4L/22R Improvements
John F. Kennedy International Airport

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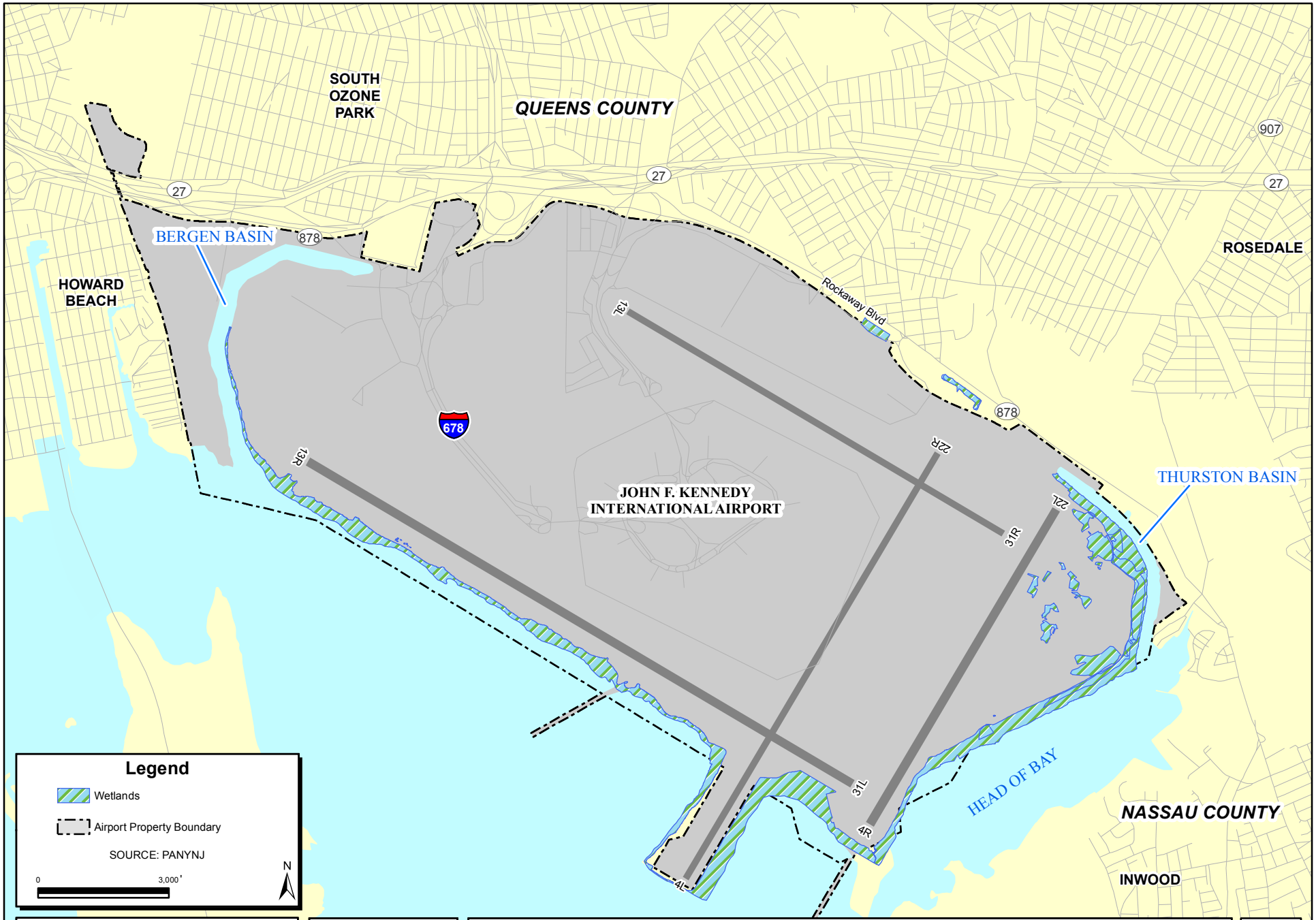
Outfalls

Exhibit:
4-4

BACK OF EXHIBIT 4–4, OUTFALLS



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Wetlands

Exhibit:
4-5

BACK OF EXHIBIT 4–5, WETLANDS

Chapter 5

CHAPTER 5
ENVIRONMENTAL CONSEQUENCES

This chapter presents the assessment of environmental impacts addressed in considering reasonably foreseeable environmental consequences of the Proposed Action and the No-Build/No-Action Alternative.

ENVIRONMENTAL CATEGORIES

As required by the Federal Aviation Administration (FAA) Order 5050.4B, *National Environmental Policy Act (NEPA) Implementing Instructions for Airport Projects,* and FAA Order 1050.1E Change 1, *Environmental Impacts: Policies and Procedures*, the environmental categories listed below are addressed in this Environmental Assessment (EA). Construction activities could result in potential impacts to multiple categories. The assessment of potential construction related impacts to each of the applicable categories listed below have been included in Section 5.18, *Construction Impacts.*

- Noise
- Compatible Land Use
- Socioeconomic Impacts, Environmental Justice, and Children's Health and Safety Risks
- Secondary (Induced) Impacts
- Air Quality
- Water Quality
- Department of Transportation Act: Section 4(f) Resources
- Historic, Architectural, Archaeological, and Cultural Resources
- Fish, Wildlife, and Plants
- Wetlands
- Floodplains
- Coastal Resources
- Wild and Scenic Rivers
- Farmland
- Energy Supply and Natural Resources
- Light Emissions and Visual Impacts
- Hazardous Materials, Pollution Prevention, and Solid Waste
- Construction Impacts
- Cumulative Impacts

5.1 NOISE

The noise analysis was performed using the FAA's Integrated Noise Model (INM), Version 7.0d. In this analysis, the INM was used to produce day-night average sound level (DNL) 65, 70, and 75 contours. DNL contours were prepared for 2015

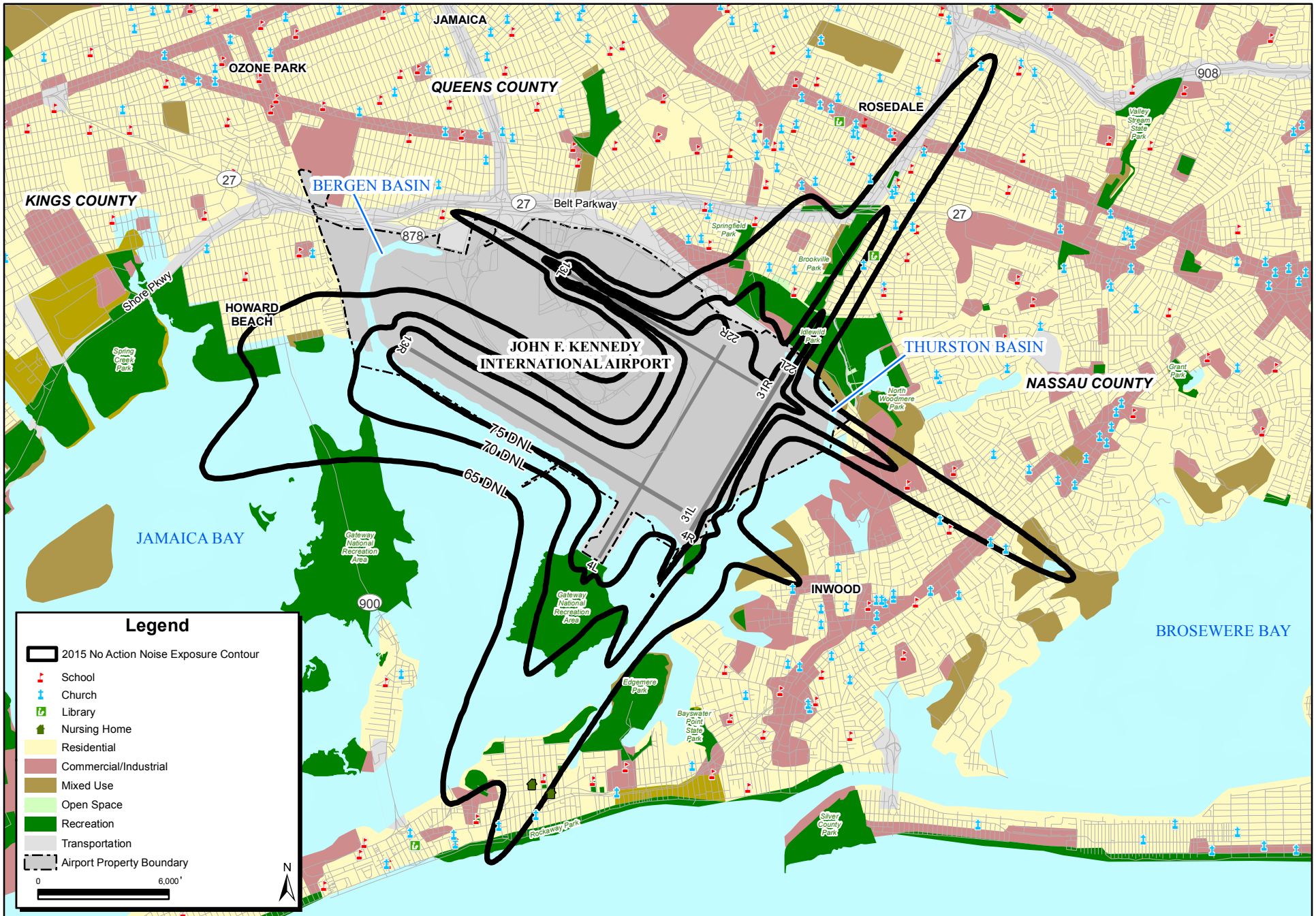
and 2020, the first year of operations and five years after implementation of the proposed projects, respectively. **Exhibit 5-1, *2015 No-Build/No-Action Noise Exposure Contour***, and **Exhibit 5-2, *2015 Proposed Action Noise Exposure Contour***, show the resulting noise contours for the 2015 operation levels or the first year after the opening of the runway. **Exhibit 5-3, *2015 No-Build/No-Action vs. 2015 Proposed Action Noise Exposure Contour***, shows a comparison of the two contours. The noise analysis provided in Appendix B, *Noise,* describes the methodology, assumptions, and results of aircraft noise analysis conducted to assess the effects that the Proposed Action would have on noise exposure in the communities surrounding JFK.

A significant noise impact would be considered if there were an increase of 1.5 decibel (dB) or more over noise-sensitive facilities within the 65 DNL noise contour.[1] **Exhibit 5-4, *2015 Areas of DNL 1.5 dB Increase within 65 DNL*** shows the 1.5 dB increase areas due to the Proposed Action. The areas of 1.5 dB increase would occur over compatible land uses. There are no noise-sensitive facilities within the 1.5 dB increase within the 65 DNL of the 2015 Proposed Action noise contour. The same analysis was conducted for 2020 conditions and the areas of 1.5 dB increase would occur over compatible land uses. There are no noise-sensitive facilities within the 1.5 dB increase within the 65 DNL of the 2020 Proposed Action noise contour. Therefore, there would not be a significant noise impact as a result of implementing the Proposed Action.

The following elements of the Proposed Action would result in a change in the noise exposure at JFK. However as stated previously these changes would not result in a significant noise impact over noise sensitive areas.

- *Displace the Runway 4L arrival threshold 460 feet to the north to provide 600 feet of required undershoot Runway Safety Area (RSA) for Runway 4L to comply with FAA design standards* – This would result in arriving aircraft being higher over areas to the south of the runway.
- *Construct 728 feet of new runway pavement on the north side of Runway 4L/22R to maintain adequate departure length on Runway 22R while providing the required 1,000 feet of overrun RSA for Runway 22R to comply with FAA design standards* – The additional runway pavement would result in aircraft, departing to the south on Runway 22R, starting their takeoff roll 728 feet further north due to the change in the departure starting point. The existing Runway 22R departure starting point is currently located approximately 1,675 feet south of Rockaway Boulevard. With implementation of the Proposed Action, the Runway 22R departure starting point would be approximately 950 feet south of Rockaway Boulevard. The new departure starting point may result in aircraft turning in the air at slightly different points and at a slightly higher altitude than existing conditions. However, as previously discussed and further discussed in Appendix B, increased noise associated with these changes would not be considered significant.

[1] FAA Order 1050.1E Change 1, *Environmental Impacts: Policies and Procedures,* Section 14, Noise, Paragraph 14.3, Significant Impact Thresholds



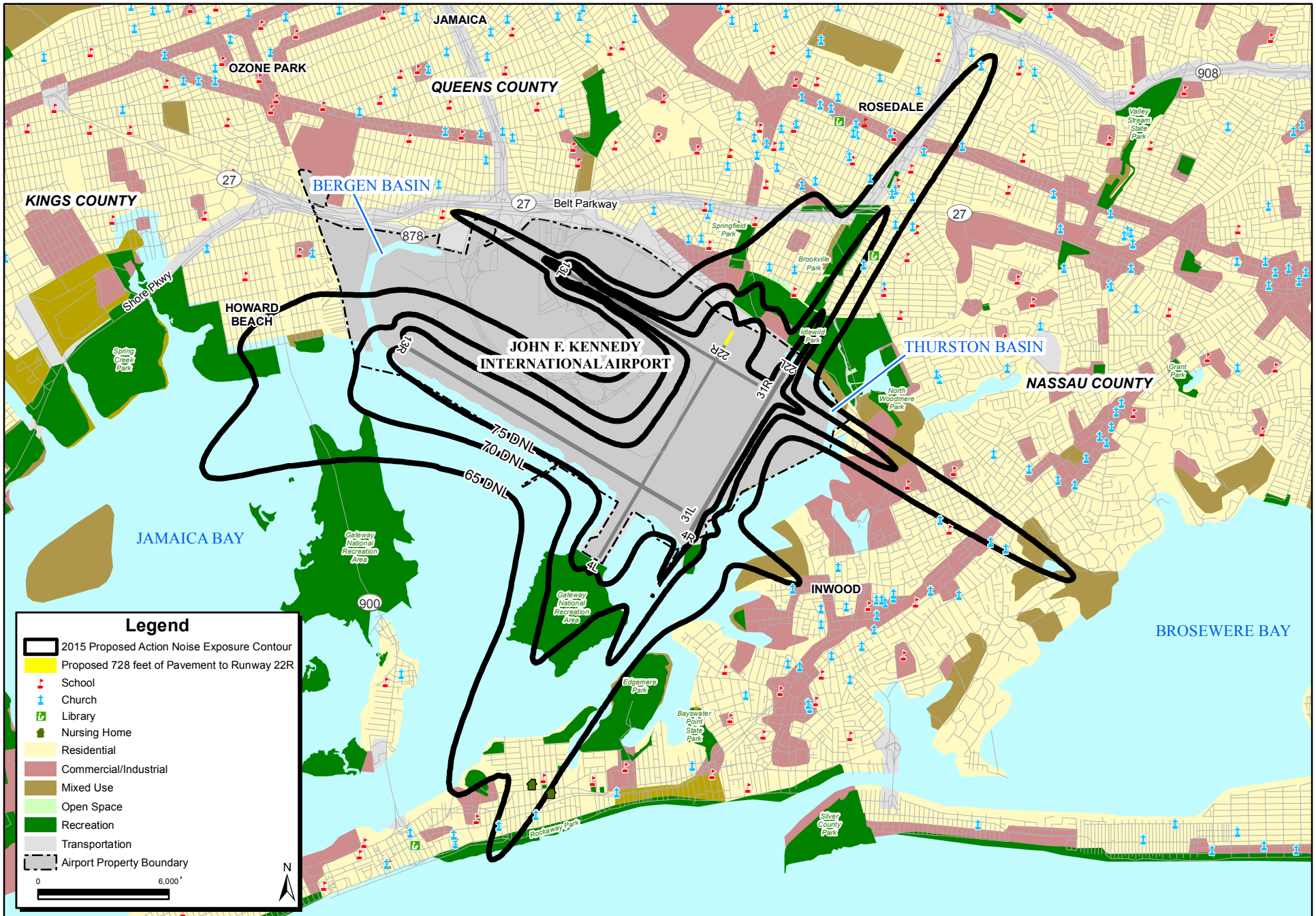
Environmental Assessment
4L/22R Rehab
John F. Kennedy International Airport

REVISED DRAFT
8/20/2013 Prepared by Landrum & Brown
Filename: Y:\JFK\4L_22R Rehab EA\
E-L&B Work Product\2-GIS\MXD\
5-1_2015 No Action Contour.mxd
contour: JFK15NPdNoise-Contours

2015 No-Build/No-Action Noise Exposure Contour

Exhibit:
5-1

BACK OF EXHIBIT 5-1, 2015 NO-BUILD/NO-ACTION NOISE EXPOSURE CONTOUR



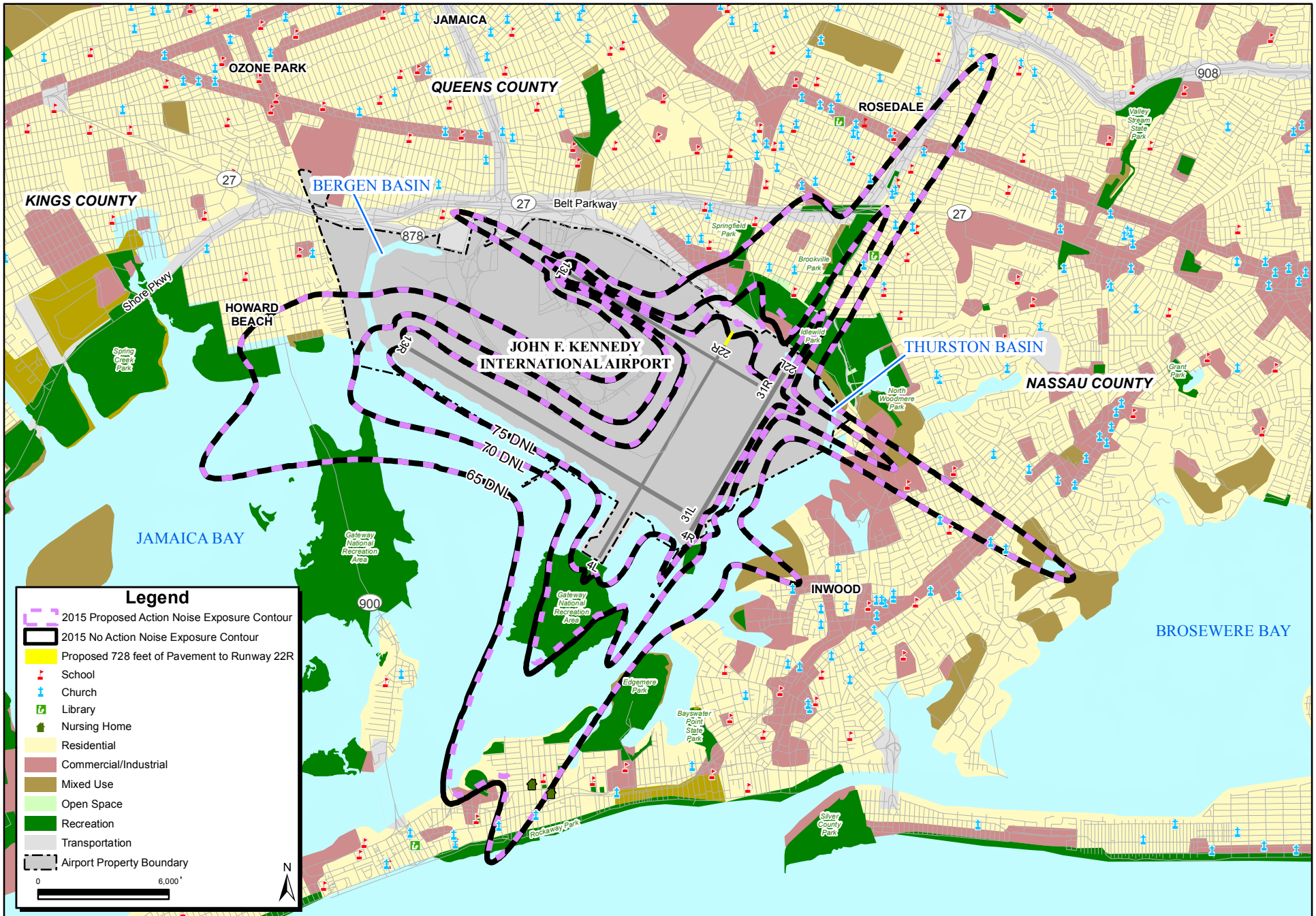
Environmental Assessment
4L/22R Rehab
John F. Kennedy International Airport

REVISED DRAFT
8/20/2013 Prepared by Landrum & Brown
Filename: Y:\JFK\4L_22R Rehab EA\
E-L&B Work Product\2-GIS\MXD\
5-2_2015 Proposed Action Contour.mxd
contour: JFK15WPdNoise-Contours

2015 Proposed Action Noise Exposure Contour

Exhibit:
5-2

BACK OF EXHIBIT 5-2, 2015 PROPOSED ACTION NOISE EXPOSURE CONTOUR



Environmental Assessment
4L/22R Rehab
John F. Kennedy International Airport

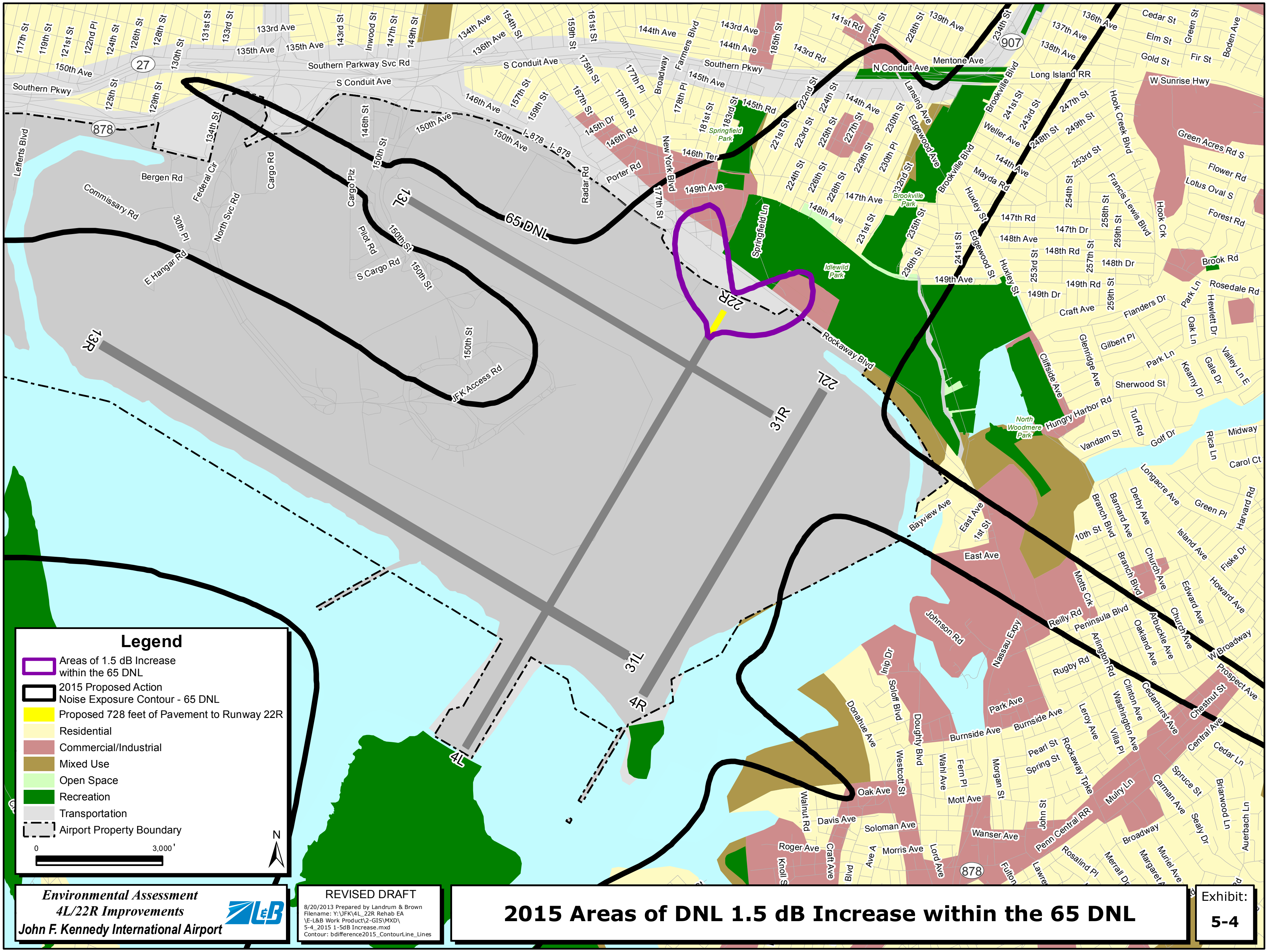
REVISED DRAFT

8/20/2013 Prepared by Landrum & Brown
Filename: Y:\JFK\4L_22R Rehab EA\E-L&B Work Product\2-GIS\MXD\5-3_2015 NA vs 2015 PA.mxd
contour: JFK15NPdNoise-Contours/
JFK15WPdNoise-Contours

2015 No-Build/No-Action vs.
2015 Proposed Action Noise Exposure Contour

Exhibit:
5-3

BACK OF EXHIBIT 5-3, 2015 NO-BUILD/NO-ACTION VS. 2015 PROPOSED ACTION NOISE EXPOSURE CONTOUR



Environmental Assessment
4L/22R Improvements
John F. Kennedy International Airport

REVISED DRAFT
8/20/2013 Prepared by Landrum & Brown
Filename: Y:\JFK\4L_22R Rehab EA \E-L&B Work Product\2-GIS\MXD\ 5-4_2015 1-5dB Increase.mxd
Contour: bdifference2015_ContourLine_Lines

2015 Areas of DNL 1.5 dB Increase within the 65 DNL

Exhibit:
5-4

BACK OF EXHIBIT 5-4, *2015 Areas of DNL 1.5 dB Increase within 65 DNL*

5.2 COMPATIBLE LAND USE

The compatibility of existing and planned land uses in the vicinity of an airport is usually associated with the extent of noise impacts related to that airport, but may also include impacts related to changes in land use and effects of development. **Table 5-1, *Noise Exposure Area, Housing Units, and Population,*** presents the noise contour area, housing units and population exposed to 65, 70, and 75 DNL noise levels for the No-Build/No-Action and Proposed Action alternatives in 2015 and 2020 conditions.

The Proposed Action would result in the RSA for Runway 4L/22R extending beyond JFK's existing property and beyond the boundaries set forth in the existing lease with the City of New York (City) for JFK. This would require the relocation of Patrol Road and the Airport security fence. The Port Authority Police Department (PAPD) Impound Lot would be reconfigured and an additional lot would be paved. In addition, the PAPD K9 facilities would be demolished and relocated to make way for the additional PAPD impound lot. The existing PAPD impound lot has 260 parking spaces and covers approximately 99,700 square feet. With the Proposed Action, the impound lot would be reconfigured to approximately 98 parking spaces and approximately 41,500 square feet. The additional impound lot would be located east of the new driveway from Rockaway Boulevard to North Boundary Road (see Exhibit 1-6) and would be approximately 23,720 square feet and accommodate approximately 60 parking spaces. The total parking spaces available in the two lots would be approximately 158 with the Proposed Action. Based on demand, the reconfigured impound lot and additional impound lot would provide sufficient capacity for the PAPD. The area where the additional PAPD impound lot would be located is currently used by the PAPD K9 unit to train dogs and consists of a fenced area/dog run and a "bunker" used to train dogs. The fenced area/dog run would be relocated to a grassy area next to the reconfigured impound lot. The "bunker" would be relocated southeast of the burn area (See Exhibit 1-6).

The Air Terminals Agreement provides that land acquired by the Port Authority for Municipal Air Terminal Purposes shall be deemed part of the Demised Premises and subject to the provisions of such agreement. To implement this provision, the Port Authority would convey property to the City, and the City would lease the Property to the Port Authority via a single supplemental agreement to the Port Authority's Amended and Restated Agreement of Lease of the Municipal Air Terminals with the City.[2] Section 197-c, subsection of the New York City (NYC) Charter states that actions resulting in the sale, lease, or exchange of real City property are subject to the Uniform Land Use Review Procedure (ULURP) process. However, the City of New York has advised the Port Authority that the previous ULURP application resulting in New York Resolution #C 040191 PPQ adopted March 4, 2004 covers the City of New York's transfer of the parcel and does not require further ULURP review.[3]

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[2] See Appendix A, *Agency Coordination* for the signed First Amendment to the Lease between the Port Authority and the NYEDC.

[3] See Appendix A, *Agency Coordination* for the signed First Amendment to the Lease between the Port Authority and the NYEDC.

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Table 5-1
NOISE EXPOSURE AREA, HOUSING UNITS, AND POPULATION
John F. Kennedy International Airport

2012/2013 Activity Level												
DNL	No-Build/No-Action				Proposed Action				Difference Between No-Build/No-Action and Proposed Action			
	Square Miles	Housing Units	Population	NSF*	Square Miles	Housing Units	Population	NSF*	Square Miles	Housing Units	Population	NSF*
65-70	7.59	9,399	29,482	18	The Proposed Action was not evaluated for the 2012/2013 activity level.							
70-75	2.90	801	2,603	0								
75+	2.41	0	0	0								
Total	**12.90**	**10,200**	**32,085**	**18**								

2015 Activity Level												
DNL	No-Build/No-Action				Proposed Action				Difference Between No-Build/No-Action and Proposed Action			
	Square Miles	Housing Units	Population	NSF*	Square Miles	Housing Units	Population	NSF*	Square Miles	Housing Units	Population	NSF*
65-70	8.35	11,952	36,668	20	8.27	11,909	36,574	20	-0.08	-43	-94	**0**
70-75	2.96	876	2,851	0	2.92	876	2,851	0	-0.04	0	0	**0**
75+	2.88	0	0	0	2.92	0	0	0	0.04	0	0	**0**
Total	**14.19**	**12,828**	**39,519**	**20**	**14.11**	**12,785**	**39,425**	**20**	**-0.08**	**-43**	**-94**	**0**

2020 Activity Level												
DNL	No-Build/No-Action				Proposed Action				Difference Between No-Build/No-Action and Proposed Action			
	Square Miles	Housing Units	Population	NSF*	Square Miles	Housing Units	Population	NSF*	Square Miles	Housing Units	Population	NSF*
65-70	8.97	13,747	41,545	21	8.89	13,655	41,292	21	-0.08	-92	-253	**0**
70-75	3.22	1,009	3,286	0	3.17	1,008	3,286	0	-0.05	0	0	**0**
75+	3.05	0	0	0	3.10	0	0	0	0.05	0	0	**0**
Total	**15.24**	**14,756**	**44,831**	**21**	**15.16**	**14,663**	**44,578**	**21**	**-0.08**	**-92**	**-253**	**0**

*NSF = Noise-Sensitive Facilities
Source: New York City Department of City Planning, 2013; U.S. Census Bureau, 2010; Landrum & Brown, 2013.

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The Proposed Action would be compatible with existing zoning, surrounding area land use plans, and the land uses on the Airport. The Proposed Action would not create a wildlife hazard as defined in FAA Advisory Circular (AC) 150/5200-33B, *Hazardous Wildlife Attractants On or Near Airport,* nor would it affect any existing wildlife hazard area because the Proposed Action would not change the urban characteristics of the existing land uses. The No-Build/No-Action would not change any of the physical characteristics of the Airport and would have no impact on land uses on or off of the Airport. Therefore, neither the Proposed Action nor the No-Build/No-Action would result in an adverse land use impact.

5.3 SOCIOECONOMIC IMPACTS, ENVIRONMENTAL JUSTICE, AND CHILDREN'S ENVIRONMENTAL HEALTH AND SAFETY RISKS

Social impacts have been assessed to determine the effect, if any, that implementation of the Proposed Action would have on the social fabric of the surrounding communities. The types of social impacts that typically arise from airport development are:

- Relocation of residences, but sufficient replacement housing is unavailable
- Relocation of community businesses, that would create extensive hardship for the affected communities
- Disruption of planned development
- Disruptions of local traffic patterns that substantially reduce the levels of service of the roads serving the airport and its surrounding communities
- Substantial loss in the community tax base
- Environmental Justice issues
- Children's Environmental Health and Safety Risks

5.3.1 RELOCATION OF RESIDENCES

No residences would need to be relocated as part of the Proposed Action.

5.3.2 RELOCATION OF BUSINESSES

The Proposed Action would require the PAPD Impound Lot and PAPD K9 facilities to be relocated as described under Section 5.2, *Compatible Land Use*. However, these facilities would be relocated to an area nearby on Airport property, thereby creating no extensive hardship to the surrounding communities.

5.3.3 DISRUPTION OF LOCAL TRAFFIC PATTERNS

The Proposed Action would require relocation of Airport Patrol Road and North Boundary Road. Airport Patrol Road and North Boundary Road run in an east/west direction approximately 320 to 350 feet north of Taxiway E. As part of the Proposed Action the roads would require relocation to comply with RSA

requirements. North Boundary Road would be decommissioned from the corner with Eastern Road to the relocated Patrol Road on the east side of Runway 4L/22R (see Exhibit 1-4, *Proposed Action - Runway 22R End*), restricting access to facilities on the east side of Runway 4L/22R from the west side of the runway. North Boundary Road mainly provides access to the PAPD satellite rescue station and training center, PAPD academy site, and PAPD K9 unit. As part of the Proposed Action, a new access road would be constructed off of Rockaway Boulevard to provide access to these facilities. Based on traffic analysis conducted by the Port Authority, this would not reduce the level of service on the road due to the small number of vehicles that would be using the access road. Furthermore, while this road is accessible to the public, it is not an integral part of the local traffic infrastructure. As a result, no disruptions of local traffic patterns that substantially reduce the levels of service of the roads serving the airport and its surrounding communities would occur. See correspondence in Appendix A, *Agency Coordination* between the New York State Department of Transportation, New York City Department of Transportation, and the New York City Department of Environmental Protection and the Port Authority.

5.3.4 LOSS IN COMMUNITY TAX BASE

There would be no change in the community tax base from the Proposed Action.

5.3.5 ENVIRONMENTAL JUSTICE

Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority and Low-Income Populations,* requires all Federal agencies to identify and address disproportionate and adverse human health or environmental effects of their programs, policies, and activities on minority and low-income populations. The Executive Order also directs Federal agencies to incorporate environmental justice into their overall missions by conducting their programs and activities in a manner that provides minority and low-income populations an opportunity to participate in agency programs and activities.

Executive Order 12898 relates to requirements in Title VI of the Civil Rights Act of 1964 (Title VI), the National Environmental Policy Act (NEPA), the Uniform Relocation Assistance and Real Property Acquisition Act (49 CFR Part 24), and other applicable statutes and regulations. Title VI of the *Civil Rights Act of 1964* provides that no person will, on the grounds of race, color, religion, sex, national origin, marital status, disability, or family composition, be excluded from participation in, be denied the benefits of, or be otherwise subject to discrimination under any program of the Federal, state, or local government. Title VIII of the *1968 Civil Rights Act* guarantees each person equal opportunity in housing.

U.S. Department of Transportation (DOT) Order 5610.2, *Environmental Justice in Minority Populations and Low-Income Populations,* was issued to implement Executive Order 12898.[4] DOT Order 5610.2 defines minorities as people who are Black, Hispanic, Asian American, American Indian, or Alaskan Native.

[4] 62 CFR 72, *Department of Transportation Order to Address Environmental Justice in Minority Populations and Low-Income Populations*.

Minority populations are defined as "any readily identifiable groups of minority persons who live in geographic proximity, and if circumstances warrant, geographically dispersed/transient persons (such as migrant workers or Native Americans) who will be similarly affected by a proposed DOT program, policy or activity." The DOT Order defines a low-income population as "any readily identifiable group" of persons whose median household income is at or below the poverty guidelines of the U.S. Department of Health and Human Services, "who live in geographic proximity, and if circumstances warrant, geographically dispersed/transient persons (such as migrant workers or Native Americans) who will be similarly affected by a proposed DOT program, policy or activity."

In determining whether a proposed project or activity is in compliance with Executive Order 12898, two factors must be considered. The first is whether the proposal is likely to have adverse effects on minority or low-income populations. The second is to determine whether the adverse impacts are disproportionately high on minority or low-income populations. The DOT Order defines "adverse effects" as "…the totality of significant individual or cumulative human health or environmental effects, including interrelated social and economic effects…" The DOT Order defines "disproportionately high and adverse effects" as those that are "predominately borne by a minority population and/or a low-income population, or will be suffered by the minority population and/or low-income population and is appreciably more severe or greater in magnitude than the adverse effect that will be suffered by the non-minority population and/or non-low-income population."

Analysis shows that within the 65 DNL noise contour of the 2015 No-Build/No-Action approximately 67.8 percent of the population is minority. In the Proposed Action, a small decrease in the minority population within the 65 DNL noise contour would occur. **Table 5-2, *Noise Impacts to Minority Population Households***, summarizes the percentage of minority population within the 65 DNL for the No-Build/No-Action and the Proposed Action in both 2015 and 2020. Therefore as demonstrated, the Proposed Action would not disproportionately impact any minority populations.

Table 5-2
NOISE IMPACTS TO MINORITY POPULATION HOUSEHOLDS
John F. Kennedy International Airport

2015			
ALTERNATIVE	**TOTAL POPULATION**	**MINORITY POPULATION**	**PERCENT MINORITY**
No-Build/No-Action[1] 65 DNL	39,518	26,790	67.8%
Proposed Action 65 DNL	39,425	26,749	67.8%
2020			
ALTERNATIVE	**TOTAL POPULATION**	**MINORITY POPULATION**	**PERCENT MINORITY**
No-Build/No-Action[1] 65 DNL	44,831	30,085	67.1%
Proposed Action 65 DNL	44,578	29,924	67.1%

[1] For the purposes of assessing potential environmental justice issues related to significant noise impacts, the census blocks that generally represent the 65 DNL noise contour for the No-Build/No-Action are used as the base geographical unit for comparison with the 65 DNL noise contours and the area of significant increased noise for each of the alternatives.

Source: Landrum & Brown, 2013. 2010 U.S. Census, Summary File 3.

According to 2010 U.S. Census data the median household income for the area located in the 2015 No-Build/No-Action 65 DNL noise contour is approximately $79,363 per year. The low-income poverty threshold, as established by the U.S. Census Bureau for a one-person household in 2010, is $11,139. A household containing four persons would be considered below the poverty level, by the U.S. Census Bureau in 2010, if their household income were less than $22,314. Therefore, no further income analysis will be conducted because the area within the 65 DNL noise contour of the 2015 No-Build/No-Action is not identified as a low-income community.

5.3.6 CHILDREN'S ENVIRONMENTAL HEALTH AND SAFETY RISKS

Pursuant to Executive Order 13045, *Protection of Children from Environmental Health Risks and Safety Risks*, Federal agencies are directed, as appropriate and consistent with the agency's mission, to make it a high priority to identify and assess environmental health risks and safety risks that may disproportionately affect children.

Implementation of the Proposed Action would not create environmental health risks or safety risks for any persons, regardless of age. Therefore, there would be no potential significant impact to children's environmental health and safety under either the Proposed Action or the No-Build/No-Action Alternative.

5.3.7 CONCLUSION

The No-Build/No-Action would not change any of the physical characteristics of the Airport and would have no impact on or off of the Airport. Therefore, based on the analysis previously provided, neither the Proposed Action nor the No-Build/No-Action would result in adverse socioeconomic, environmental justice,

or children's environmental health and safety risks impacts. The No-Build/No-Action would maintain the roadways in the existing location. Therefore, neither the Proposed Action nor the No-Build/No-Action would result in significant impacts to surface transportation.

5.4 SECONDARY (INDUCED) IMPACTS

Secondary (induced) economic impacts are the multiplier effects of the direct and indirect economic impacts. Major development proposals often involve the potential for induced or secondary impacts on surrounding communities. Examples of these impacts include: shifts in patterns of population movement and growth, public service demands, and changes in business and economic activity to the extent influenced by Airport development.

The Proposed Action would induce temporary positive secondary impacts within the region as a result of construction activity. These impacts would benefit surrounding communities during construction by increasing employment opportunities and expenditures on local services and materials. Therefore, the net secondary impacts of the Proposed Action would be positive. Neither the Proposed Action nor the No-Build/No-Action would result in shifts in patterns of population movement or growth. Additionally, public service demands in the communities surrounding the Airport and the demands of the PAPD (due to the proposed relocation of their facilities) would not be impacted by the Proposed Action or the No-Build/No-Action. Therefore, neither the Proposed Action nor the No-Build/No-Action would induce adverse secondary (induced) impacts.

The Proposed Action would not induce more operations at the airport because operations are limited on an hourly basis at JFK by the High Density Rule.[5] Therefore, it is concluded that no additional demand beyond what is already forecasted for JFK would occur as a result of the Proposed Action.

5.5 AIR QUALITY

The impacts to air quality due to the Proposed Action were determined in accordance with the guidelines provided in FAA, *Air Quality Procedures for Civilian Airports & Air Force Bases,*[6] and FAA Order 5050.4B[7], *National Environmental Policy Act (NEPA) Implementing Instructions for Airport Actions*, which together with the guidelines of FAA Order 1050.1E,[8] *Environmental Impacts: Policies and Procedures*, constitute compliance with all the relevant provisions of NEPA and the CAA.

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5 FAA Order "Operating Limitations at New York's John F. Kennedy International Airport" Docket FAA-2007-29320, 14 CFR Part 93.

6 FAA, *Air Quality Procedures for Civilian Airports & Air Force Bases*, April 1997. Addendum September 2004.

7 FAA Order 5050.4B, *National Environmental Policy Act (NEPA) Implementing Instructions for Airport Actions*, April 28, 2006.

8 FAA Order 1050.1E, *Environmental Impacts: Policies and Procedures*, March 20, 2006.

The purpose of a general conformity evaluation is to examine the results of the emissions inventories and to determine the applicability of the General Conformity Rule to the Proposed Action. **Table 5-3, *General Conformity Evaluation***, shows that the estimated net emissions from construction and implementation of the Proposed Action would be less than the applicable *de minimis* thresholds.

Because the Proposed Action (both construction and implementation) would not result in increased emissions above the applicable *de minimis* thresholds, no further analysis is required under the General Conformity Rule (40 CFR Part 93, §93.153) and the Proposed Action is presumed to conform to the state implementation plans. Appendix C, *Air Quality* provides more detail on the methodology, input data, and results. As shown in Table 5-3, there would be an overall improvement in air quality once the Proposed Action is implemented due to a reduction in aircraft taxi time.

Table 5-3
GENERAL CONFORMITY EVALUATION
John F. Kennedy International Airport

ALTERNATIVES	ANNUAL EMISSIONS (tons per year)					
	CO	**VOC**	**NO_x**	**SO_x**	**PM_{10}**	**$PM_{2.5}$**
2015 No-Build/No-Action	2,758.57	289.99	2,344.27	234.10	37.25	37.11
2015 Proposed Action	2,759.54	290.49	2,345.47	234.12	37.30	37.16
NET EMISSIONS	**0.97**	**0.50**	**1.20**	**0.02**	**0.05**	**0.05**
2020 No-Build/No-Action	2,735.86	314.73	2,573.81	259.18	39.54	39.43
2020 Proposed Action	2,663.11	305.60	2,557.63	254.86	39.01	38.90
NET EMISSIONS	**-72.75**	**-9.13**	**-16.18**	**-4.31**	**-0.53**	**-0.53**
***de minimis* THRESHOLD**	**100**	**50**	**100**	**100**	**100**	**100**

Total emissions may not sum exactly due to rounding.
Source: EDMS version 5.1.4, L&B Analysis, 2013.

5.5.1 HOT SPOT ANALYSIS

A dispersion analysis was conducted to determine whether carbon monoxide emissions due to Ground Access Vehicles (GAVs) at the proposed new roadway intersection on Rockaway Boulevard would result in unacceptably high concentration levels in public areas. The hot spot analysis found that the Proposed Action would not create a new violation of any NAAQS, delay the attainment of any NAAQS, nor increase the frequency or severity of any existing violations of the NAAQS. Appendix C provides more detail on the methodology, input data, and results for the hot spot analysis.

5.5.2 CLIMATE

Although there are no Federal standards for aviation-related GHG emissions, it is well-established that GHG emissions can affect climate.[9] The Council on Environmental Quality (CEQ) has indicated that climate should be considered in NEPA analyses. As noted by CEQ, however, "it is not currently useful for the NEPA analysis to attempt to link specific climatological changes, or the environmental impacts thereof, to the particular project or emissions; as such direct linkage is difficult to isolate and to understand".[10]

The greenhouse gas assessment found in Appendix C demonstrates that the Proposed Action would not cause an increase in greenhouse gas emissions compared to the No-Build/No-Action alternative. The Proposed Action would decrease emissions as compared to the No-Build/No-Action. Pursuant to FAA Order 1050.1E, Change 1, Guidance Memo #3 no further consideration of GHGs is necessary.[11]

5.5.3 SUMMARY OF IMPACTS

The air quality assessment demonstrates that construction and implementation of the Proposed Action would not cause an increase in air emissions above the applicable *de minimis* thresholds. The Proposed Action would actually decrease emissions as compared to the No-Build/No-Action. Therefore, the Proposed Action conforms to the New York SIP and the CAA because the Proposed Action would not exceed the *de minimis* thresholds established by the USEPA for the criteria pollutants. In addition, the hot spot analysis shows that the operation of the Proposed Action would not create any new violation of the NAAQS, delay the attainment of any NAAQS, nor increase the frequency or severity of any existing violations of the NAAQS.

The Port Authority would be required to ensure fugitive dust controls are implemented during construction and any applicable local, state, or Federal air quality permits would be obtained prior to construction. As a result, no adverse impact on local or regional air quality is expected by implementation of the Proposed Action. No further analysis or reporting is required under the CAA or NEPA.

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9 See *Massachusetts* v. *E.P.A.,* 549 U.S. 497, 508-10, 521-23 (2007).

10 *Draft NEPA Guidance on Consideration* of *the Effects* of *Climate Change and Greenhouse Gas Emissions,* CEQ (2010). http://ceq.hss.doe.gov/nepa/regs/Consideration_ of Effects_ of GHG_Draft_NEP A_Guidance_FINAL _02182010.pdf

11 FAA Order 1050.1E, Change 1, Guidance Memo#3. To: FAA Lines of Business and Managers with NEPA Responsibilities. From: Julie Marks, FAA AEE-400, Prepared by Thomas Cuddy, FAA AEE-400. Subject: Considering Greenhouse Gases and Climate Under the National Environmental Policy Act (NEPA): Interim Guidance. January 12, 2012.

5.6 WATER QUALITY

The following discussion provides an analysis of the potential impacts to water resources resulting from the implementation of the Proposed Action and the No-Build/No-Action. A description of the existing conditions is provided in Chapter 4, *Affected Environment*.

5.6.1 SURFACE WATER RESOURCES

Both the Proposed Action and No-Build/No-Action would have no adverse impacts on the surface water quality at JFK. All redevelopment activities would occur away from water bodies and would not require any alteration to Jamaica Bay or its tributaries. Potential temporary impacts to surface water resulting from construction activities are discussed in Section 5.18, *Construction Impacts*.

5.6.2 STORMWATER RUNOFF

The Proposed Action would not adversely impact the quantity or quality of stormwater runoff. The additional runway and taxiway pavement, , relocation of North Boundary Road, relocation of the PAPD impound lot and K9 units, and the relocation of Airport Patrol Road would create approximately 14 acres of additional impervious surfaces. However, this represents less than a 0.5 percent increase in impervious surface at the airport. The small addition of impervious surfaces would require minor adjustments to the location of catchbasins and the storm sewer lines, but in general the storm sewer system on the Airport has the capacity to accommodate the increase in stormwater runoff.

Under the Proposed Action a variety of Best Management Practices (BMPs), such as catch basins with inserts, and other water quality management devices, would be adopted to manage the stormwater collected. Stormwater runoff from an airport can include a number of pollutants including sediments, oils, greases, heavy metals, nutrients, and trash. Hydrodynamic water quality devices (the generic term for a Stormceptor or Downstream Defender) would be installed to help protect the water quality in the Jamaica Bay where stormwater is discharged. These devices would allow sediments to settle to the bottom and oils, greases, and trash to float to the top. These pollutants are then removed by cleaning crews using a vacuum truck. Removing sediments would also remove metals and nutrients which are attached to the sediment.

To ensure safety, the FAA requires airlines and airports that operate during icy conditions to perform deicing and anti-icing of aircraft and airfield pavement. Airports are required to obtain stormwater discharge permits under the NPDES program and ensure that wastes from deicing operations are properly collected and treated. Discharges from JFK are permitted under the State Pollution Discharge Elimination System (SPDES) Permit issued by the New York State Department of Environmental Conservation (NYSDEC) to the Port Authority (Permit# NY-0008109). All discharges occurring via the stormwater conveyance system are in accordance with the requirements set forth in the Port Authority permit.

The Port Authority and the airline community at JFK would comply with the new EPA guidelines on discharges of deicing fluids. As a result of installing the water treatment devices discussed above, the quality of stormwater collected from these areas (and ultimately discharged to Jamaica Bay) would show a modest improvement from what is currently discharged.

In addition, in order for the Port Authority to comply with the SPDES permit, all airlines at JFK are expected to develop, maintain, and implement BMPs to prevent releases of significant amounts of pollutants, including deicing/anti-icing chemicals. The Port Authority samples representative outfalls on a monthly basis and the results of that sampling are submitted to the NYSDEC, as required by the SPDES permit. The Proposed Action would not change the amount of aircraft deicing fluids/anti-icing chemicals applied at the Airport because there would be no change in the number of operations associated with the project. There would be a slight increase in pavement deicers due to the widening of the runway and the additional taxiways. However, this would also be covered under the permit. Therefore, the overall impact of the Proposed Action on stormwater quality would be a positive one due to the installation of new water quality devices. As previously discussed, because the Airport has the capacity to accommodate the increase (less than 0.5 percent) of impervious surface on the airfield, the Proposed Action would not cause adverse impacts from stormwater runoff.

5.6.3 SANITARY WASTEWATER

There would be no change to the quality or quantity of sanitary wastewater generated by the Proposed Action at the Airport. As such, the Proposed Action is not expected to significantly affect the quality of sanitary sewage because the level of passengers is expected to be the same with or without the Proposed Action, the amount of wastewater would be the same as under the No-Build/No-Action.

5.6.4 GROUNDWATER

The soils around the Airport are known to contain petroleum hydrocarbons as a result of Airport activities over the past 60 years. Additionally, glycols associated with deicing activities have been detected in the soils underlying the Airport.

Implementation of the Proposed Action is expected to improve the quality of groundwater resources on an Airport-wide basis over the No-Build/No-Action. During implementation of the Proposed Action, contaminated soil and groundwater would be identified through soil testing and, if necessary, contaminated soil and groundwater would be removed and disposed of in accordance with Federal and state requirements.

During implementation of the Proposed Action, dewatering of excavations would be performed in compliance with JFK's Long Island Well Permit. If necessary, contaminated groundwater would be collected and disposed off-site or treated to levels required by the Port Authority's SPDES permit and discharged. Dewatering and treatment of affected groundwater would remove petroleum hydrocarbons that would have otherwise continued to affect groundwater quality

and potentially surface water quality in Jamaica Bay. These management techniques have been applied to other redevelopment sites within the Airport and would be applicable to the Proposed Action as well. As a result, no adverse impact on groundwater or surface water resources is expected by implementation of the Proposed Action. In fact, implementation of the Proposed Action is expected to have a positive impact on groundwater and surface water quality as compared to the No-Build/No-Action because existing contamination in groundwater would remain at the current levels under the No-Build/No-Action.

5.7 DEPARTMENT OF TRANSPORTATION ACT: SECTION 4(f) RESOURCES

Section 4(f) of the *Department of Transportation Act of 1966* (DOT Act), which was recodified and renumbered as section 303(c) of 49 U.S.C., provides that "…the Secretary of Transportation will not approve any program or project that requires the use of any publicly owned land from a public park, recreation area, or wildlife and waterfowl refuge of national, state, or local significance or land from an historic site of national, state, or local significance as determined by the officials having jurisdiction thereof, unless there is no feasible and prudent alternative to the use of such land and such program, and the project includes all possible planning to minimize harm resulting from the use." FAA Order 1050.1E, Change 1; FAA Order 5050.4B; and this EA continue to refer to Section 4(f) because it would create needless confusion to do otherwise since the policies under 4(f) are widely referred to as "section 4(f)" matters.

The Proposed Action being considered in this EA would not cause a physical taking of Section 4(f) resources or direct use of Section 4(f) resources. However, in accordance with FAA Order 1050.1E and FAA Order 5050.4B, constructive use is evaluated by determining if the impacts would substantially impair a Section 4(f) resource. If there would be no substantial impairment to the 4(f) resource, the action would not constitute a constructive use and would not invoke Section 4(f) of the DOT Act. Substantial impairment occurs only when the features of the resource that contribute to its significance or enjoyment are substantially diminished.

As mentioned in Chapter 1, *Introduction and Background,* a Draft EA for this project, *Runway 4L/22R Improvements, John F. Kennedy International Airport,* was prepared and published for public review and comment in May 2012. The Proposed Action from the May 2012 Draft EA included two elements, the relocation of the Runway 22R arrival threshold 3,316 feet to the north and the relocation of the Runway 4L end (departure starting point) 460 feet to the north, that would have resulted in aircraft being at lower altitudes than existing conditions over areas to the north of the runway, including Idlewild Park. The lower altitude of aircraft would have resulted in up to 800 trees in Idlewild Park becoming obstructions, as defined in FAA Order 8260.3B, United States Standard for Terminal Instrument Procedures (TERPS). FAA Order 8260.3B specifies the minimum measure of obstacle clearance that is considered by the FAA (the Federal authority) to supply a satisfactory level of vertical protection for aircraft operating at an airport. If the project described in the May 2012 Draft EA were to be implemented, up to 800 trees in Idlewild Park would have required removal to comply with FAA standards.

In order to minimize the number of trees to be removed from Idlewild Park, the Port Authority made the decision to redefine the proposed project. The Port Authority no longer proposes the relocation of the Runway 22R arrival threshold 3,316 feet to the north. In addition, the revised project no longer proposes the relocation of the Runway 4L departure starting point.

The FAA's Land Use Compatibility Guidelines[12] indicate that most recreational uses are compatible with noise levels up to 75 DNL. For this analysis, a resource would be considered substantially impaired if the Proposed Action would result in the resource receiving noise levels that are considered incompatible according to FAA's Part 150 guidelines.

An analysis of noise levels at potential Section 4(f) resources was conducted to determine the noise level band that various potential Section 4(f) resources were within for each Alternative. A comparison of the change in noise levels between the No-Build/No-Action and the Proposed Action for 2015 and 2020 conditions is shown in **Table 5-4, *Summary of Noise Exposure at Potential Section 4(f) Resources***. As shown in Table 5-4, there are 21 potential Section 4(f) resources located within the 65+ DNL of the 2015 No-Build/No-Action noise exposure contour. Each of these 21 resources continues to be within the same contour band under both the 2015 Proposed Action and the 2020 Proposed Action noise exposure contours.

[12] FAA Land Use Compatibility Guidelines, 14 CFR Part 150.

Table 5-4
SUMMARY OF NOISE EXPOSURE AT POTENTIAL SECTION 4(F) RESOURCES
John F. Kennedy International Airport

RESOURCE NAME	EXISTING (2012/2013) BASELINE	2015 NO BUILD/NO ACTION	2015 WITH PROJECT	2020 NO BUILD/NO ACTION	2020 WITH PROJECT
Gateway National Rec Area	75+ DNL	75+ DNL	75+ DNL	75+ DNL	75+ DNL
Idlewild Park	75+ DNL	75+ DNL	75+ DNL	75+ DNL	75+ DNL
Brookville Park (South)	70-75 DNL	75+ DNL	75+ DNL	75+ DNL	75+ DNL
Jamaica Bay Park	75+ DNL	75+ DNL	75+ DNL	75+ DNL	75+ DNL
Brookville Park (North)	70-75 DNL	70-75 DNL	70-75 DNL	70-75 DNL	70-75 DNL
Edgemere Park	65-70 DNL	65-70 DNL	65-70 DNL	65-70 DNL	65-70 DNL
Frank M Charles Memorial Park	65-70 DNL	65-70 DNL	65-70 DNL	65-70 DNL	65-70 DNL
Spring Creek Park	65-70 DNL	65-70 DNL	65-70 DNL	65-70 DNL	65-70 DNL
Springfield Park (North)	65-70 DNL	65-70 DNL	65-70 DNL	65-70 DNL	65-70 DNL
Belt Parkway	65-70 DNL	65-70 DNL	65-70 DNL	65-70 DNL	65-70 DNL
Hook Creek Wildlife Sanctuary	65-70 DNL	65-70 DNL	65-70 DNL	65-70 DNL	65-70 DNL
Springfield Park (South)	65-70 DNL	65-70 DNL	65-70 DNL	65-70 DNL	65-70 DNL
Almeda Playground	65-70 DNL	65-70 DNL	65-70 DNL	65-70 DNL	65-70 DNL
Dubos Point Wildlife Sanctuary	65-70 DNL	65-70 DNL	65-70 DNL	65-70 DNL	65-70 DNL
Brant Point Wildlife Sanctuary	65-70 DNL	65-70 DNL	65-70 DNL	65-70 DNL	65-70 DNL
Vernam Barbadoes Peninsula	65-70 DNL	65-70 DNL	65-70 DNL	65-70 DNL	65-70 DNL
Thursby Basin Park	65-70 DNL	65-70 DNL	65-70 DNL	65-70 DNL	65-70 DNL
Rockaway Beach and Boardwalk		65-70 DNL	65-70 DNL	65-70 DNL	65-70 DNL
Mentone Playground	65-70 DNL	65-70 DNL	65-70 DNL	65-70 DNL	65-70 DNL
Laurelton Playground	65-70 DNL	65-70 DNL	65-70 DNL	65-70 DNL	65-70 DNL
JFK Terminal 5	65-70 DNL	65-70 DNL	65-70 DNL	65-70 DNL	65-70 DNL

Source: Landrum & Brown, 2012.

Of the resources in the area, three public parks, Brookville Park, Idlewild Park, and Springfield Park, are located in an area where change in noise levels could occur from the Proposed Action.

Brookville Park is less than 90 acres[13] in size and is located approximately 2,075 feet north of the Airport property boundary. Portions of the park would be located within the 65-70 DNL and 70-75 DNL noise contours of the No-Build/No-Action for 2015 conditions. The portions of the park located within the 65-70 DNL and 70-75 DNL noise contours include open space, basketball courts, handball courts, and hiking/biking trails, all of which are considered to be compatible land uses within the 65-70 DNL and 70-75 DNL noise levels. If the

[13] http://www.nycgovparks.org/parks/

Proposed Action is implemented, this park would receive less than a 1 dB increase in the noise levels, would remain within the 65-70 DNL and 70-75 DNL noise contours, and would affect the same resources as the No-Build/No-Action. Therefore no adverse impacts with respect to noise would result from the Proposed Action.

Idlewild Park is less than 160 acres[14] in size and is located approximately 124 feet north of the Airport property boundary. Portions of the park would be located within the 65-70 DNL and 70-75 DNL noise contours of the No-Build/No-Action for 2015 conditions. The portions of the park located within the 65-70 DNL and 70-75 DNL noise contours include open space, a cricket field, and baseball fields, all of which are considered to be compatible land uses within the 65-70 DNL and 70-75 DNL noise levels. If the Proposed Action is implemented, this park would receive less than a 1 dB increase in noise levels, would remain within the 65-70 DNL and 70-75 DNL noise contours, and would affect the same resources as the No-Build/No-Action. Therefore no adverse impacts with respect to noise would result from the Proposed Action.

Springfield Park is less than 24 acres[15] in size and is located approximately 1,588 feet north of the Airport property boundary. A portion of the park would be located within the 65-70 DNL noise contour of the No-Build/No-Action noise contour in 2015. The portion of the park located within the 65-70 DNL includes baseball fields, dog runs, playgrounds, and tennis courts, all of which are considered to be compatible land uses within the 65-70 DNL noise levels. In the 2015 Proposed Action the park would receive less than a 1 dB increase in noise levels, would continue to be located within the 65-70 DNL noise contour, and would affect the same resources as the No-Build/No-Action. Therefore there would be no adverse impacts with respect to noise from the Proposed Action.

Because there would be no substantial impairment to the Section 4(f) resources, the Proposed Action would not constitute a constructive use under Section 4(f) of the DOT Act. Therefore, it can be concluded that neither the Proposed Action nor the No-Build/No-Action would significantly impact any Section 4(f) resources.

5.8 HISTORICAL, ARCHITECTURAL, ARCHAEOLOGICAL, AND CULTURAL RESOURCES

The National Historic Preservation Act (NHPA) is the primary Federal law governing the preservation of historic and prehistoric resources, encompassing art, architecture, archaeological, and other cultural resources. Section 106 of the NHPA requires that, prior to approval of a Federal or Federally-assisted project, or before the issuance of a license, permit, or other similar approval, Federal agencies take into account the effect of the project on properties that are on or eligible for listing on the National Register.

[14] http://www.nycgovparks.org/parks.
[15] http://www.nycgovparks.org/parks.

The TWA terminal building at Terminal Five was listed in the National Register of Historic Places (NRHP) on September 7, 2005. The Proposed Action does not include any modifications at, on, or near the TWA terminal building. There are two sites considered to be archaeologically sensitive in the vicinity of the Airport but not within Airport property. They are the Ridgewood Aqueduct and the "Aqueduct Site." The Ridgewood Aqueduct, which is eligible for inclusion in the NRHP, is an abandoned brick conduit built in the mid-1800s, which runs in an east-west direction outside the northern boundary of the Airport. The "Aqueduct Site" is located near the northwest corner of the Airport. It is a village site assigned to the period 1100 A.D. to 1700 A.D. Neither Aqueduct sites are within the Airport's boundary nor would they be adversely affected by the Proposed Action. Trenching activities, associated with providing electrical power to new/relocated NAVAIDS, paving activities, and installation/relocation of the NAVAIDS would occur in areas where previous disturbance has already occurred. As a result, the Proposed Action would not have an impact on any prehistoric, historic, archaeological, or paleontological resources because the project would be limited to only previously disturbed portions of the airfield.

Therefore, applying the guidelines for determining adverse effect under Section 106 of the NHPA (36 CFR 800.5), the Proposed Action would have no effect on historical, architectural, archaeological, or cultural resources. Under the No-Build/No-Action, all runways and taxiways would remain the same and because no construction would occur, the No-Build/No-Action would have no effect on any known historical, architectural, archaeological, or cultural resources.

5.9 FISH, WILDLIFE, AND PLANTS

The Endangered Species Act of 1973 (ESA), as amended, provides for the protection of certain plants and animals as well as the habitats in which they are found. In compliance with the ESA, agencies overseeing Federally-funded projects are required to obtain from the U.S. Fish and Wildlife Service (USFWS) information concerning any species listed, or proposed to be listed, which may be present in the area of the Proposed Action.

The New York State Natural Heritage Program (NYSNHP) reports several occurrences of the state-endangered peregrine falcon (*falco peregrinus*) within the general vicinity of the Airport. Within its range, this falcon prefers open country from tundra, savannah and sea coasts, to high mountains, as well as open forests and tall buildings. Nests are built on high ledges, usually 50 to 200 feet off the ground. Nesting season occurs from March through July.

Peregrines occasionally nest on Joco Marsh (1/2 mile from the end of Runway 4R/22L which is outside of the project area) on an artificial nest platform installed for osprey. There are no known peregrine falcons nests or sightings within the area to be disturbed for the Proposed Action. The closest sighting occurred at Hangar 12 (now demolished) which was located over 13,000 feet from the project area. However, the 4L and 22R glide slope antennas proposed to be relocated, are potential habitats. Glide Slope antennas are typically 30 to 50 feet in height, therefore a potential habitat site. Prior to the relocation of these facilities, site

surveys/inspections would occur to determine the presence of nests. If nests are found, construction/relocation of the facilities would be postponed until the nesting season is over and the hatchlings left the nests. Habitats near the Airport, which may be used by peregrine falcons for hunting, include waterfowl concentration areas such as Jamaica Bay. These habitats are not located within the project area.

Based on information from USFWS[16], there are no Federal species of special concern in the area of JFK, with the exception of transient individuals. Additionally, the USFWS and the NYSNHP do not report any recent records for occurrences of endangered, threatened, or special concern plant species at JFK.

Based on information from the National Marine Fisheries Service (NMFS)[17] no threatened or endangered marine species under its jurisdiction are known to occur at the Airport. Jamaica Bay and its environs support diamondback terrapin turtles that are neither Federal nor state special-status species. However, New York is considering adding them as a special concern species. Terrapins can be found in brackish waters of coastal salt marshes, tidal creeks, estuaries, bays, and coves. Females are typically found on beaches and in sand dunes when nesting. From late May through July, nesting females retreat from the water to lay their eggs above the high tide line. Several incidences of turtles crossing Runway 4L/22R have occurred in the past. The Port Authority is currently studying the best methods to deter the turtles from crossing the runways. Several methods have been proposed, including special fencing that would prevent the turtles from crawling onto the runway. During construction, best practices would be used to deter the turtles from the construction site and prevent any disturbance to the turtles while laying eggs. Trenching activities, associated with providing electrical power to new/relocated NAVAIDS, and installation of NAVAIDS would be conducted in a manner that would reduce or eliminate potential conflicts with the turtles. The Port Authority's on-site wildlife staff would be on hand to monitor the situation during the nesting period. Any turtles found in the construction area would be relocated to another area and released near Jamaica Bay.

Therefore, neither the Proposed Action nor the No-Build/No-Action would adversely impact any Federal-listed or state-listed endangered, threatened, or special concern species.

5.10 WETLANDS

No wetlands would be directly impacted by the construction of the Proposed Action. In fact, the Proposed Action was specifically designed to avoid the wetlands in the proposed project area. The Proposed Action would occur within the 150-foot area adjacent to NYSDEC regulated tidal wetlands, also known as a wetland buffer zone. It is anticipated this action would be authorized pursuant to an existing permit issued to the Port Authority by NYSDEC. The permit authorizes maintenance of Port Authority waterfront structures and elements thereof, of the Port Authority within New York City. "Repair, replacement, or relocation of paved service roads within tidal wetland adjacent areas" is one of the activities authorized by this permit.

[16] http://www.fws.gov/northeast/nyfo/es/ColistCurrent.pdf
[17] http://www.nmfs.noaa.gov/pr/species/criticalhabitat.htm

Notification to NYSDEC at least 15 days prior to the start of work is required by Natural Resource Condition No. 5 of the permit. Information regarding the project, including work schedule, current work area photographs, construction equipment to be used, and project plans must be submitted with the notification. The project plan has to include information about 1) sediment and erosion control methods and locations, 2) sediment or vegetation disturbance or fill placement, 3) tidal wetland boundaries, 4) staging locations for construction equipment, 5) information regarding the type(s), volume(s), and source(s) fill, if it would be used, 6) property lines, 7) dimensions of the work areas, limits of disturbance including trenching for electrical power, existing grades and 8) the size/amount of rock rip rap. After the work has been completed, post-construction photographs must be submitted to NYSDEC. As of the writing of this document the information required by the permit has not been submitted to the NYSDEC. When the submittal of the information required by the permit is made, a copy will be provided to the FAA.

Neither the Proposed Action nor the No-Build/No-Action would adversely impact wetlands or other regulated water features at JFK.

5.11 FLOODPLAINS

Floodplains are defined by Executive Order 11988, Floodplain Management, as "the lowland and relatively flat areas adjoining inland and coastal waters including flood-prone areas of offshore islands, including at a minimum, that area subject to a one percent or greater chance of flooding in any given year" (i.e., area inundated by a 100-year flood). United States Department of Transportation (USDOT) Order 5650.2 defines the values served by floodplains to include "natural moderation of floods, water quality maintenance, groundwater recharge, fish, wildlife, plants, open space, natural beauty, scientific study, outdoor recreation, agriculture, aquaculture, and forestry."

The Federal Emergency Management Agency (FEMA) has mapped the 100-year floodplains for JFK and the surrounding areas, as shown in Exhibit 4-3. A section of the Proposed Action would encroach in the special flood hazard area subject to inundation by the 100-year floodplain.[18] However, the Proposed Action is not considered a "critical action", as defined in the Water Resources Council Floodplain Management Guidelines. A critical action includes any activity for which even a slight chance of flooding would be too great. The critical action floodplain is defined as the 500-year floodplain (0.2 percent chance floodplain). The Proposed Action would not be located in a 500-year floodplain as designated by FEMA.

In following the guidelines of Executive Order 11988, Floodplain Management, the Proposed Action would not have a significant impact or adversely affect the base floodplain. As discussed in Section 5.6, *Water Quality*, the quantity of stormwater runoff would not increase substantially due to the relatively small increase (less than 0.5 percent) in impervious surface. The Airport's current stormwater system has the capacity to accommodate the additional stormwater with only minor

[18] In 2013, after Hurricane Sandy, FEMA published Advisory Base Flood Elevation maps for New York City and the conclusion that the Proposed Action would not adversely impact floodplains remains valid.

improvements as needed. As a result, there would be no impacts on human life and substantial encroachment-related costs or damage. The Proposed Action would not affect aviation safety or cause flood-induced spills of hazardous materials. The Proposed Action would not cause an adverse effect on the affected floodplain's natural and beneficial values due to the small increase in impervious surfaces within the floodplain. Therefore, neither the Proposed Action nor the No-Build/No-Action would adversely impact floodplains.

5.12 COASTAL RESOURCES

5.12.1 COASTAL ZONE MANAGEMENT CONSISTENCY

The Proposed Action is consistent with the State's Coastal Zone Management Program (CZMP); however, since the Airport is within the coastal zone for the State of New York as defined under the New York Coastal Area Facility Review Act, the Port Authority sent letters of request for concurrence to the New York State Department of State (Division of Coastal Resources) and to the New York City Department of City Planning (Waterfront Division). The NYSDOS concurred that the Runway 4L/22R projects are consistent with the State's CZMP. A copy of the correspondence is included in Appendix A.

The area affected by the Proposed Action is within the coastal zone, but would not adversely impact coastal zone resources and would be consistent with the Waterfront Revitalization and Coastal Resources Act (WRCRA). Additionally, preventive measures, such as spill prevention plans and other BMPs, would be implemented or updated to minimize the potential for pollutant releases to the coastal zone.

Neither the Proposed Action nor the No-Build/No-Action would adversely impact coastal zone resources and both would be consistent with the Federal CZMP and the WRCRA.

5.12.2 COASTAL BARRIERS

The closest protected area in the Coastal Resource Barrier System, as identified in the Coastal Barrier Resources Act of 1982 as amended by the Coastal Barrier Improvement Act of 1990, is the Jo Co Marsh located south of Runway 4L/22R. However this area would not be directly or indirectly impacted by the Proposed Action or No-Build/No-Action Alternatives.

5.13 WILD AND SCENIC RIVERS

The Wild and Scenic Rivers Act (P.L. 90-542) provides protection for certain free-flowing rivers which have "outstanding or remarkable scenic, recreational, geologic, fish and wildlife, historic, cultural, or other similar values." No wild and scenic rivers, as designated by the U.S. Department of the Interior, National Park Service, are located in the vicinity of JFK. Therefore, neither the Proposed Action nor the No-Build/No-Action would adversely impact any wild and scenic rivers.

5.14 FARMLAND

The Farmland Protection Policy Act (FPPA) of 1981 was enacted to minimize the extent to which Federal actions and programs contribute to unnecessary and irreversible conversion of farmland to non-agricultural uses.

The area affected by the Proposed Action is in an urbanized area on property previously developed and paved. The Proposed Action would not involve property acquisition or the use of any FPPA properties. Therefore, neither the Proposed Action nor the No-Build/No-Action would adversely impact farmlands.

5.15 ENERGY SUPPLY AND NATURAL RESOURCES

The operation of an airport requires energy in the form of electricity, natural gas, aviation fuel, diesel fuel, and gasoline to power, cool, heat, and provide lighting. Energy requirements associated with airport development generally fall into two categories, those for stationary facilities (terminal buildings) and those for aircraft operations. Natural resources, such as sand, gravel, water, wood, and steel are typically consumed during airport construction projects.

The Proposed Action is expected to have a negligible impact on public utilities, energy suppliers, and natural resources and demand would not exceed supply. The projects proposed would not deplete natural resources in the area and would, to the extent possible, reuse raw construction materials (soil, gravel, etc.) throughout the construction of the taxiways and taxiway fillets. Neither the No-Build/No-Action nor the Proposed Action would adversely affect energy supply or natural resources.

5.15.1 SUSTAINABILITY

With regard to sustainable design, Executive Order 13123, *Greening the Government Through Efficient Energy Management*,[19] encourages each Federal agency to expand the use of renewable energy in its facilities and for its actions. Further, FAA policy directs a review of a Federal action to discern the conservation of resources, use of pollution prevention strategies, minimization of aesthetic effects, and address public (both local and traveling) sensitivity to these concerns.

As per Port Authority policy and guidelines, construction would be done in compliance with the Port Authority's Sustainable Infrastructure Guidelines. Thus, the Proposed Action would meet the Port Authority's and FAA's goals for promoting sustainable design.

[19] Executive Order 13123, *Greening the Government Through Efficient Energy Management*, 64 FR 30851, June 8, 1999.

5.16 LIGHT EMISSIONS AND VISUAL IMPACTS

FAA Order 1050.1E Change 1*, Environmental Impacts: Policies and Procedures*, requires that the extent of any lighting associated with an airport action that could cause a nuisance or annoyance to people surrounding the airport be evaluated.

5.16.1 LIGHT EMISSIONS

The Proposed Action would be limited to the addition and re-installation of typical airfield lighting and NAVAIDS. Taxiway lighting that would be removed or disturbed during the improvement projects would be relocated or replaced-in-kind. In addition, taxiway light emissions are distant from residential communities.

Neither the Proposed Action nor the No-Build/No-Action would perceptibly alter exterior light levels in the Runway 4L/22R environment. As such, no adverse impact would result from light emissions under either alternative.

5.16.2 VISUAL IMPACTS

The project area environment currently consists of runways, taxiways, roads, and other runway support elements. The Proposed Action would not change the visual environment. The Proposed Action includes the installation of a visual screen on the existing perimeter fence along Rockaway Boulevard (see Exhibit 1-6). The screen would be approximately 1,600 feet long and would not exceed 14 feet in height (the height of the fence). The screen would aid in shielding the community from the aircraft operating on Runway 4L/22R. As a result, the Proposed Action would not result in impacts to the visual environment.

Under the No-Build/No-Action, there would be no change to the runway. Since there would be no new structures added or removed from the landscape, there would be no change in the visual and aesthetic environment.

5.17 HAZARDOUS MATERIALS, POLLUTION PREVENTION, AND SOLID WASTE

FAA Order 1050.1E Change 1*, Environmental Impacts: Policies and Procedures*, states the impacts to solid waste collection, control, and disposal due to airport construction projects must be assessed in an EA. Airport construction projects do not normally generate significant amounts of perishable or non-perishable waste, other than wastes associated with construction debris. The following sections discuss the potential hazardous materials and solid waste impacts.

5.17.1 HAZARDOUS MATERIALS

During the construction phase of the Proposed Action, soils would be excavated for foundation work, parking lots, concrete pads for NAVAIDS, NAVAID relocation or placement, and improvements to the taxiways and taxiway safety areas. If any stained soils are observed or if soils are found contaminated with petroleum products, all pertinent local, state and Federal regulations regarding proper disposal

would be complied with. There are no known hazardous materials in the PAPD "bunker." However in the unlikely event that any soils or other materials removed during construction and demolition are determined to be hazardous wastes, the material would be disposed of at a USEPA-approved hazardous waste disposal facility under the Port Authority's Resource Conservation and Recovery Act (RCRA) hazardous waste identification number.

Before beginning construction and demolition activities, the Port Authority would work with contractors to develop a site-specific health and safety plan as a preventative measure. Contents of the plan would provide information concerning any contaminants found and how to protect worker health and safety. In addition to the health and safety plan, a soil erosion and sedimentation control plan would be developed to ensure surface waters are protected from construction and demolition activities. All development activities associated with the Proposed Action would comply with all Federal, state, and local regulations regarding the identification, transportation, and disposal of hazardous and non-hazardous material.

Based on the discussion above, the Proposed Action would result in a potential net positive impact related to contaminated/hazardous materials. The No-Build/ No-Action would result in materials remaining in place at existing levels.

5.17.2 SOLID WASTE

There would be solid waste generated from the Proposed Action in the form of soil, asphalt millings, and construction debris from demolition activities. The Port Authority would reduce the volume of solid waste by recycling, to the extent possible, the milled asphalt. There is sufficient disposal capacity (out-of-state landfills, recycling centers, and incinerators) in the greater metropolitan area to handle the waste load. All excavated material would be disposed of in accordance with all Federal, state, and local regulations. Consequently, there would be no adverse impacts related to solid waste management from the Proposed Action. Demolition materials would be recycled to the greatest extent practicable. The No-Build/No-Action would result in no physical changes to the Airport, therefore this alternative would not include adverse impacts related to solid waste management.

5.18 CONSTRUCTION IMPACTS

In accordance with FAA Order 5050.4B, *NEPA Implementing Instructions for Airport Actions*, and FAA Order 1050.1E Change 1*, Environmental Impacts: Policies and Procedures*, the impacts to the environment due to construction activities must be assessed when preparing an EA. Construction impacts are commonly short-term and temporary in nature. Typical impacts resulting from airport construction include air, water, and noise pollution. In addition, surface transportation traffic patterns may be altered during construction. Impacts resulting from the construction of the Proposed Action are not anticipated to be permanent and would occur primarily during the construction season. FAA Order 1050.1E references FAA AC 150/5370-10A, *Standards for Specifying Construction of Airports* (now replaced

by FAA AC 150/5370-10F). These Federal designated control measures would be incorporated into all temporary erosion and sedimentation controls, as well as air and water pollution control measures during all construction projects at JFK.

The construction phasing plan for the Proposed Action has been designed to minimize the impacts to landside and airside operations. Construction of the Proposed Action is planned to occur between March 2014 and December 2015. The construction is planned to occur in three stages which would allow at least three runways to remain operational at all times during construction. In addition, a temporary concrete plant would be installed to produce concrete on site during the construction period. Having a temporary concrete plant located on-site would minimize the need for concrete trucks to use major highways, which would help reduce traffic and emissions.

5.18.1 WATER QUALITY

Stormwater runoff during construction is regulated by the NYSDEC under the SPDES program, which mandates the implementation of a Storm Water Pollution Prevention Plan (SWPPP) to prevent stormwater contamination during construction. BMPs are recommended to deal with sedimentation and erosion control, containment of construction materials (hydraulic fluids, fuel, etc.), washing of construction vehicles, cleaning of concrete mixers, etc. These BMPs are to be incorporated into the project's construction contract and become an obligation of the contractor. The Port Authority would monitor compliance with these practices and assure that the storm sewer and receiving water systems are protected. Proper implementation of the SWPPP would ensure that the quality of stormwater currently discharged into Jamaica Bay would not be significantly deteriorated due to construction activities.

Contractors would be required to comply with all applicable Federal, state, and local laws and regulations, including FAA guidance contained in AC 150/5370-10F, including Item P-156, *Temporary Air and Water Pollution, Soil Erosion and Siltation Control*, AC 150/5320-15A *Management of Airport Industrial Waste*, and AC 150/5320-5C (including Change 1) *Subsurface Drainage Design*.

5.18.2 AIR QUALITY

Construction activities would have a short-term impact on local air quality. While the emissions inventory demonstrated that construction activities would not exceed any applicable standards, the Port Authority would ensure that all possible measures would be taken to reduce fugitive emissions during construction by requiring the construction contractor to submit a proposed method of erosion and dust control, and disposal of waste materials pursuant to guidelines included in FAA, *Standards for Specifying Construction of Airports*.[20]

[20] FAA, *Standards for Specifying Construction of Airports*, Item P-156, *Temporary Air and Water Pollution, Soil Erosion, and Siltation Control*, AC 150/5370-10A (February 17, 1989).

5.18.3 NOISE

Noise impacts may occur in the vicinity of the construction sites. Earthwork and site preparation activities would result in elevated levels of noise generated by the types of equipment used on most construction sites. Noise from this equipment would vary from equipment model to equipment model, and would change according to the operation involved.

Table 5-5, *Construction Equipment Noise*, depicts an estimate of the typical sound level energy from each item of construction equipment. The total sound energy is essentially a product of a machine's sound level, the number of such machines in service, and the average time they operate. Although pile drivers and rock drills produce the highest sound levels, it is dump trucks, air compressors, and concrete mixers that, due to their greater number or longer operating times, produce the most total sound energy.[21] Noise levels resulting from operation of construction equipment are generally higher than those generated by normal traffic flows. The distance of the closest residential areas to the construction site would be approximately 1,930 feet away. Because of the distance from construction and the fact that there are other sources of noise in the area (roads and Airport) the construction equipment would not cause a significant impact.

[21] May, D. N., Editor, 1978. *Handbook of Noise Assessments*, Page 215. Van Nostrand Reinhold Company, New York.

Table 5-5
CONSTRUCTION EQUIPMENT NOISE
John F. Kennedy International Airport

CONSTRUCTION EQUIPMENT	MAXIMUM SOUND LEVEL (dBA) AT 50 FEET	SOUND LEVEL (dBA) AT RECEIVER BY DISTANCE (FEET)					
		1,000	2,500	5,000	7,500	10,000	15,000
Dump Truck	88	62	54	48	44	42	38
Portable Air Compressor	81	55	47	41	37	35	31
Concrete Mixer (truck)	85	59	51	45	41	39	35
Jackhammer	88	62	54	48	44	42	38
Scraper	88	62	54	48	44	42	38
Dozer	87	61	53	47	43	41	37
Paver	89	63	55	49	45	43	39
Generator	76	50	42	36	32	30	26
Pile Driver	101	75	67	61	57	55	51
Rock Drill	98	72	64	58	54	52	48
Pump	76	50	42	36	32	30	26
Pneumatic Tools	85	59	51	45	41	39	35
Backhoe	85	59	51	45	41	39	35

Source: May, DS.N., Editor, 1978. *Handbook of Noise Assessments*, Page 215. Van Nostrand Reinhold Company, New York. Computations of typical noise at 8,000 feet by Landrum & Brown, 2005 using the following equation, which is based on a standard fall-off rate of noise (approximately six dBA per doubling of distance): $N_r = N_{r1} + 20*\log(r/r_1)$; where N_{r1} is the known noise level at a given distance (r_1), and N_r is the unknown noise level at the known distance r.

5.18.4 SURFACE TRANSPORTATION

Standard traffic engineering techniques would be utilized to maintain traffic during construction. However, temporary construction impacts could include increased commercial traffic on neighborhood roads, increased traffic congestion, increased travel distances, and increased travel times for drivers. Normal neighborhood vehicular traffic patterns could also be disrupted if drivers chose to cut-through neighborhoods to avoid congestion induced by construction activities.

The construction of the Proposed Action would also result in increased construction-related traffic in the vicinity of the Airport. Temporary construction impacts could include increased noise, dust, vibration, congestion, and truck traffic along roadways. A construction management plan would be prepared which would specify hours of operation, haul routes, and similar controls.

It is expected that such a plan would be consistent with normal contracting practices, because it is not likely that a contractor would schedule haul activities during extreme congestion periods or weather conditions because it could increase costs to the contractor and affect the schedule.

5.18.5 SOLID WASTE AND HAZARDOUS MATERIALS

During construction, there would not likely be any significant long-term solid waste and hazardous materials impacts. There would be the potential for short-term temporary environmental impacts due to the handling of construction and demolition waste; however, these would be mitigated through construction BMPs. The three levels of government (Federal, state, and local) have established procedures for permitting, notification, and tracking of hazardous wastes to ensure that materials are handled properly from removal to ultimate disposal. Although these procedures can add significantly to the cost of the Proposed Action, the adherence to established procedures reduces the potential for permitting delays and conflicts, and allows these activities to be conducted without significant environmental impact.

Demolition waste would be generated from the rehabilitation of the runway and the demolition of the PAPD "bunker." However, excavated asphalt and other materials would be recycled and reused to the greatest extent practicable. All construction waste would be disposed of in accordance with all applicable state and Federal regulations. Clean construction debris (concrete, asphalt, etc.) would be used as fill on the Airport and off-site, as needed, in accordance with present practices. The disposal of debris would be coordinated between the Port Authority, the construction manager, and a licensed waste hauler.

In addition, construction activities may expose contaminated soil and groundwater. Construction protocols are in place to identify and manage the environmental issues that arise due to the discovery of soil and/or groundwater contamination on the construction sites. Construction protocols would be put in place to identify and manage the environmental issues that arise due to the discovery of soil and/or groundwater contamination on construction sites. In addition, modification of storm drainage and navigational aid pads would include provisions to limit the migration of suspended solids or other pollutants along these pathways.

5.18.6 WETLANDS

For this project, wetland and Waters of the U.S. areas in or near construction staging areas would be avoided. It is assumed that materials and equipment would be stored away from wetland areas and construction workers would avoid wetland areas at these construction staging locations through the use of sedimentation and erosion techniques. Where possible, wetland areas also would be fenced with signs reminding workers not to enter the areas. This would result in complete avoidance to wetlands and waters of the U.S.

5.19 OTHER CONSIDERATIONS

5.19.1 POSSIBLE CONFLICTS

There are no known conflicts between the Proposed Action and the objectives of Federal, state, regional, or local land use plans, policies, or controls for the JFK area.

A number of environmental approvals, such as, consistency determination for Coastal Zone Management, and SPDES permit from NYSDEC, would be obtained prior to implementation of the project. The design and construction of the Proposed Action is similar to other runway redevelopment projects at JFK. Like the other runway redevelopment projects, the Proposed Action would follow the requirements of the relevant local regulations. Therefore, the Proposed Action is not likely to be inconsistent with any Federal, state, or local law or administrative determination relating to the environment.

5.19.2 INCONSISTENCY WITH APPROVED PLANS OR LAWS

The Proposed Action would not be inconsistent with plans, laws, or administrative determinations relating to the environment of Federal, state, regional, or local agencies.

JFK is the primary international gateway to the U.S. Maintenance and modernization of JFK airfield facilities is essential for the Airport to maintain its competitive edge and continue to be a regional economic engine, especially now since an increasing number of U.S. airports provide international service. Therefore, the project is reasonable and consistent with plans, goals, policies, and controls that have been adopted in the region of the Proposed Action.

5.19.3 MEANS TO MITIGATE ADVERSE IMPACTS

Means of preventing, minimizing or mitigating potential adverse environmental impacts are incorporated into the plans for constructing and operating the Proposed Action, where noted, in the above impact categories.

5.20 CUMULATIVE IMPACTS

The CEQ NEPA regulations (40 CFR 1508.7) define a cumulative impact as "...the impact on the environment, which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency, Federal or non-Federal, or person undertakes such other actions. Cumulative impacts can result from individually minor, but collectively significant, actions taking place over a period of time." This cumulative impact analysis was conducted to comply with the intent of FAA Order 1050.1E, DOT Order 5610.1C, and the January 1997 CEQ guidance.

The construction schedule of the Proposed Action would overlap with the construction of other projects at JFK, including the Restricted Service Road (RVSR) J8 Bridge Relocation, Taxiway B redevelopment, Phase II of the Terminal 5 and 6 Redevelopment Project, Phase II of the Terminals 3 and 4 Redevelopment Project, possibly the demolition of Hangars 3, 4, and 5, and the redevelopment of Building 144. With the exception of temporary construction-related impacts, the cumulative adverse environmental impact of the Proposed Action is expected to be minimal. Extensive preventive procedures would be put into place to avoid and minimize any potential adverse impacts during construction. As described in the following sections, the Proposed Action is consistent with the overall planning mission of the Port Authority and would not result in unmitigated adverse cumulative impacts. The cumulative impacts resulting from implementation of the Proposed Action have been assessed for projects on-Airport. The cumulative impacts analysis presented in this EA included a review of available environmental documents for other projects at JFK.

5.20.1 JFK REDEVELOPMENT PROGRAM

As is true for any large and complex airport facility, JFK serves a constantly changing industry and relies on adopting modern technology in a constantly evolving environment to serve its users efficiently and effectively. Therefore, this Airport along with many others throughout the country requires regular maintenance and modernization. The Port Authority has in the past and will continue to undertake an array of improvements at JFK, both airside and landside, to maintain and improve the efficient movement of aircraft and travelers. As is self-evident from a review of the projects listed below, each of them has demonstrated independent utility and can go forward without regard to whether any or all of the other listed actions are adopted. Each is proceeding separately and has or will go forward based on its own merits. The Proposed Action also has demonstrated its independent utility and need. The projects listed below represent the Port Authority's most recent steps to maintain and to improve the Airport's functionality and also to enhance customer service. The various improvement projects have been analyzed within four operational and physical development groups: airside, RSA improvements, landside-CTA, and landside-perimeter. Projects denoted as "landside-CTA" are within the CTA and provide landside support for aviation activity at JFK. These projects include passenger-processing functions, such as terminal development, as well as access roadway development. Projects denoted as "landside-perimeter" are located on the north side and perimeter of JFK. The following is a summary of the ongoing or recently completed projects and projects anticipated in the foreseeable future.

Airside

These projects comprise improvements to the airfield, including modifications to the runways and supporting taxiways and taxilanes at JFK.

- **Runway 4R Instrument Landing System (ILS) Pier Structure Rehabilitation** - Work included repairing the damaged structural members of the existing ILS pier and fixing any suspect members exhibiting minor damage that could worsen in the future. A Categorical Exclusion was approved for this project in April 2005 and was completed in December 2007.
- **Turf Stabilization in Runway Safety Area** – Work included the installation of aviation grade artificial turf to mitigate localized erosion problems from jet blast and weather effects. Other benefits of this action were abatement of turf management, decrease in maintenance, wildlife control, and visual enhancement. A Categorical Exclusion was approved for this project in July 2006 and was completed in June 2007.
- **Taxiway 'E' Rehabilitation** – Work included milling and repaving Taxiway 'E' full length and widening of taxiway fillets to accommodate Group V aircraft per FAA standards in AC 150/5300-13, Airport Design. A Categorical Exclusion was approved for this project in March 2007 and was completed in November 2008.
- **Taxiway 'Z' Rehabilitation** – Work included milling and repaving Taxiway 'Z' between Runway 31L and Taxiway 'J'. A Categorical Exclusion was approved for this project in June 2007 and was completed in November 2007.
- **Taxiway 'S', 'SB', 'SC' and 'SD' Rehabilitation** – Work included full depth rehabilitation of the taxiways for the taxiways providing access to the cargo area in the northwest side of the airport. A Categorical Exclusion was approved for this project in February 2008 and was completed in April 2009.
- **Partial Rehabilitation of Runway 4L/22R & Partial Rehabilitation of Taxiway 'K'** – This project entailed the partial rehabilitation of Runway 4L/22R from the southern end of Runway 4L extending approximately 1,350 feet north and the partial rehabilitation of Taxiway 'K' from Runway 4L extending approximately 500 feet west. Work included routine milling and repaving of the asphalt concrete pavement, the replacement of associated lighting systems and adjustments to the electrical manholes and other electrical devices. No new pavement was constructed. A Categorical Exclusion was approved for this project in March 2008 and was completed in September 2008.
- **Taxiway 'FB' extension** – Work included extending Taxiway 'FB' to the west of Taxiway 'E', parallel to Taxiway 'C', to a point across from Taxiway 'V'. Components of this project required the demolition of several buildings on the north side of the airfield. A Categorical Exclusion was approved for this project in March 2008 and was completed in December 2008.

- **Taxiway 'YA' and 'FB' extensions and construction of Taxiway 'KB'** – Work included extending Taxiway 'YA' west across Runway 4R/22L until it met Taxiway 'B' and extending Taxiway 'FB' from Taxiway 'ZA' to Taxiway 'E'. Taxiway 'KB' would be constructed between Taxiway 'K' and Runway 4L/22R. A Categorical Exclusion was approved for this project in March 2008. Work was completed in the third quarter of 2010.
- **Delay Reduction Program – New Taxiways, Improvements to Existing Taxiways and Runway 13R Threshold Relocation** – This project upgraded JFK's airside infrastructure, and widened and replaced approximately three miles of Runway 13R/31L. A central component of the program was widening Runway 13R/31L from 150 to 200 feet to make way for new delay-reduction taxiways. This project received a Finding of No Significant Impact (FONSI)/Record of Decision (ROD) in August 2008 and began construction in March 2010. Major elements of the project were completed in November 2010; however, a few punch list items remain outstanding and the project is not scheduled to be completely finished until the end of 2013.
- **Taxiway 'Y' Rehabilitation** – Work entailed the routine milling and overlaying of the asphalt concrete pavement, the replacement of associated lighting systems, and adjustments to the electrical manholes and other electrical devices. A Categorical Exclusion was approved for this project in November 2008. Work was completed in March 2010.
- **Construction Airside Pavement SWAP (Hangar 12 Demolition)** – Work entailed the hangar demolition and ramp expansion at the Hangar 12 site. A Categorical Exclusion was approved for this project in January 2009. Work was completed in the fourth quarter of 2011.
- **Wildlife Hazard Assessment** – JFK underwent a new Wildlife Hazard Assessment Study for one year beginning in 2010. The findings of this study were used to create an updated Wildlife Hazard Management Plan. The Plan was approved by the FAA and incorporated into the Airport Certification Manual. A Categorical Exclusion was approved for this project in August 2009.
- **Runway 13R PAPI Installation** – Work entailed the installation of Precision Approach Path Indicators (PAPI) for Runway 13R. This project received a Categorical Exclusion in October 2009 and work was completed in June 2010.
- **Taxiway 'F' Rehabilitation** – Work entailed the full-width milling and overlaying with asphalt concrete pavement of approximately 2,700 feet of Taxiway 'F', between Runway 4L/22R and Runway 4R/22L, shoulder and erosion pavement, grading, seeding, pavement marking and adjusting taxiway lighting and utility castings to meet the new finished surface. This project received a Categorical Exclusion in May 2010. Work was completed in December 2010.
- **Taxiway 'P' Rehabilitation** – This project entailed the full-width milling and overlaying with asphalt concrete pavement of approximately 5,500 feet of Taxiway 'P', between Taxiway 'PC' and 'B', shoulder and erosion pavement, taxiway fillet improvements, grading, drainage adjustments, soil erosion/sediment control, pavement markings, and adjusting taxiway lighting

and utility castings to meet the new finished surface. Electrical work included new electrical infrastructure and installation of LED lights. This project received a Categorical Exclusion in October 2011 and work was completed in October 2012.

- **New Taxiways 'HA', 'KF', and 'KG'** – The proposed project entailed the construction three new taxiways and decommissioning of two existing taxiways. The new taxiways include Taxiway 'HA', 'KF', and 'KG', each connecting Taxiways 'A' and 'B' at different locations. Taxiways 'KD', and 'KK' were decommissioned. The new proposed taxiways enhance efficiency and safety of airport operations associated with Terminal 3 and 4 envelope. This project received a Categorical Exclusion in September 2010 and work was completed in December 2012.
- **Taxiway 'P' Widening** - The proposed project entailed widening Taxiway 'P' from 75 feet to 82 feet. This project brought Taxiway 'P' into full compliance for Group VI aircraft and removed the "conditionally approved" Modification to Standards by the FAA. Work on this project began in November of 2011 and ended in October 2012.
- **Airport System Capacity Planning Study** – The Port Authority has recently undertaken a study that is aimed at reviewing the existing Port Authority airport system characteristics and constraints; identifying and evaluating potential alternatives to meet the Port Authority's goals and objectives in consideration of existing constraints and current facility characteristics; and assessing alternatives in terms of practicality, as well as operational and economic feasibility. Because this study is still in progress recommendations are not known at this time. Any recommendations from this study would require a separate NEPA assessment before implementation would occur.
- **Runway Safety Area Improvements to Runway 13L/31R** – This project would involve declaring distances to comply with FAA's Runway Safety Area regulations. This project would take place in second half of 2015.
- **Taxiway 'B' Rehabilitation** – This project entails the milling and overlaying with asphalt concrete pavement of approximately 7,000 feet of Taxiway 'B', between Taxiway 'N' and 'U', shoulder and erosion pavement, shoulder widening, improvements to storm water drainage, and installation of taxiway centerline lights, clearance bar lights, guidance signs, and pavement markings. This project received a Categorical Exclusion in April 2013. Work began in the second quarter of 2013 and is scheduled to be completed in the fourth quarter of 2014.

Landside- Central Terminal Area (CTA)

These projects are within the CTA that provides landside support for aviation activity at JFK. Landside projects include passenger processing functions such as terminal development as well as curbside and access roadway development.

- **Terminal 5 and 6 Redevelopment Project** – This project included replacement of portions of Terminals 5 and 6. Additionally, the project included the construction of a parking structure adjacent to

Terminals 5 and 6. The Port Authority completed an EA for this project in February 2005 and the project subsequently received a FONSI determination from the FAA in February 2005. Work was completed on the Terminal 5 portion of the project in 2009. Phase II of the project is scheduled for completion in the first quarter of 2014.

- **Terminals 3 and 4 Redevelopment Project** – Delta Air Lines is currently redeveloping Terminal 3 and 4 envelope. The Phase I of the project included expansion of Concourse B at Terminal 4, the demolition of Terminal 3, redeveloping the Terminal 3 area to accommodate aircraft parking, developing additional passenger processing facilities at Terminal 4, and reconfiguring taxilanes and connections to existing taxiways between Terminals 2, 3, and 4. The Port Authority completed an EA for Phase I of the project in June 2010 and subsequently received a FONSI determination from the FAA in July 2010. Work was completed in May 2013. Phase II includes an extension of Concourse B of Terminal 4 and loading bridges on Terminal 2. A Categorical Exclusion was received on Phase II in April 2013 and work began in May 2013 and is scheduled for completion in the fall of 2014.
- **JFK Expressway Outbound Widening** – Work included widening of approximately one-quarter mile (1,320 linear feet) of the JFK Expressway Outbound Roadway to accommodate the projected increase in vehicular traffic along with an acceptable level of service to airport patrons utilizing the CTA roadways. This project provided an additional lane in the merge area to facilitate traffic movement and maintain an acceptable level of service and roadway safety. Associated work included the installation of new sign structures; a new concrete median barrier between the outbound and inbound JFK Expressway roadways; and new drainage, lighting, and landscaping. The project received a Categorical Exclusion in August 2006 and work was completed in 2007.
- **Bollard Protection Terminal Frontages** - The proposed project entailed the installation of a frontage bollard system at Terminals 1, 2, 3, 4, 5, 7, and 8. This project enhances security of passengers by reducing the threat of a vehicle attempting to penetrate the terminal building frontages. A Categorical Exclusion was received on the project in October 2009. Work began in the second quarter of 2010 was completed in approximately one year.
- **Rehabilitation of Central Terminal Area (CTA) Roadways** – This project entailed the rehabilitation of the CTA Roadways. Work associated with the rehabilitation included milling and overlaying the existing asphalt concrete roadway; localized full-depth pavement replacement; localized grading; replacement of several utility castings; striping of the roadways; minor signage work, repairs to damaged curbs and sidewalks; and localized resetting/replacement of paved salt splash areas. A Categorical Exclusion was received on the project in January 2010. Work began in June 2010 and ended in February 2012.
- **Cargo Area C & D Communication Vaults** – The proposed project entailed the installation of Communication Vaults in cargo area C & D and associated cabling. All communications and electrical access to the vaults is

underground. Both vault sites and the expanded electrical substation site utilized permeable surfaces where possible, and completely re-graded and re-planted. Concrete curbing was placed adjacent to each communication vault. The concrete curbing retained the gravel mulch areas adjacent to Communications Vaults C and D, where maintenance and security vehicles may park when they are servicing the vaults so that they would not have to park in an active lane of traffic. The gravel mulch provides a permeable surface that does not erode or cause runoff and erosion. A Categorical Exclusion was received on the project in December 2010. This project commenced in March 2011 and ended in December 2011.

- **Airport Plaza - Multi Fuel Station/Carwash/Food Court** - The proposed project entails the renovation of an existing 17,500-square foot building (Building 125) on Airport property into a public multi fuel carwash facility with a convenience store, restaurant, and food court on a 3.4-acre plot. In addition, a cargo truck parking area will be installed on an adjacent 2.4 acre plot. The proposed facility includes a small repair bay for cars and SUVs right next to the car wash bays with capability of fixing minor problems such as flat tires, oil change, battery recharge, etc. A Categorical Exclusion was received on the project in October 2010. Work began in April 2012 and is scheduled to end in October 2013.
- **National Car Rental Site Modification** – The proposed project entails a modification to an existing rental car facility (Building 308) for National Rent-A-Car at JFK International Airport. The purpose of planned modification is to improve traffic flow and customer service at the rental facility site. The key improvements planned for this project are to construct new canopies over parking spaces and pedestrian walkways. Existing Building 308, approximately 6,400 square feet, is also proposed to be modified under this project. A portion of existing building, measuring approximately 2,700 square feet will be demolished for additional parking space. Two small additions will be made to Building 304 totaling 900 square feet for vehicle servicing. A Categorical Exclusion was received on the project in December 2011. Work began in June of 2012 and is expected to be completed by the end of October 2013.
- **Terminal One Checked Baggage Inspection System (CBIS) Project** – The proposed project involves the construction of an exterior canopy structures on the east and south end of the existing Terminal One building. In order to make room for a required Transportation Security Administration (TSA) checked baggage inspection system (CBIS) in the terminal's (Terminal One) east bag room, the existing in-bound, recheck, interline and oversize baggage function within the east bag room will need to be relocated to the east and south end of the terminal in a newly constructed exterior canopy structures. The Larger Canopy (East) will cover an area of approximately 9,100 square feet (SF), a majority of it will be open with the exception of a screen wall on the east side. The South Canopy (West) will cover an area of approximately 1,032 SF, out of which approximately 300 SF is fully enclosed. The canopies will be constructed on existing impervious areas. A Categorical Exclusion was received on the project in June 2011. Work began in November 2011 and is expected to be completed in December 2013.

- **Building 94 Demolition** – The proposed project entailed the demolition of Building 94. This project was necessary to accommodate the Aircraft Ramp (Apron) Expansion. Building 94, consisting of an 1,100-square foot area with utilities and guard post, was demolished in accordance with all Federal and state regulations. A Categorical Exclusion was received on the project in November 2010. This project commenced in April 2011 and ended in the third quarter of 2011.
- **Hangar 7 Demolition -** The proposed project entailed the demolition of Hangar 7. Hangar 7 was located north of Runway 13L/13R and Taxiway C in the northern section of the airport. The hangar was demolished since it was in a state of disrepair and the cleared site will be used for future development which is unknown at this time. A Categorical Exclusion was received on the project in July 2011. This project commenced in November 2011 and was completed in July 2013.
- **Hangars 3, 4, and 5 Demolition** – A Categorical Exclusion was completed for the demolition of Hangars 3, 4, and 5 at JFK in August 2003. However, the demolition has not occurred but is included in this analysis because it is a reasonable foreseeable action that could occur in the near future.
- **Restricted Service Road (RVSR) J2 Bridge Relocation** – Work entails the replacement of the RVSR J2 Bridge that spans over the Van Wyck Expressway, which will enhance safety and aeronautical operations. The existing bridge is near the end of its useful life and does not comply with current Group VI Aircraft standard clearance requirements. Work commenced in May 2012 and is expected to be completed in December 2013.
- **Restricted Service Road (RVSR) J8 Bridge Relocation** – Work entails the replacement of the RVSR J8 Bridge that spans over the JFK Expressway, which will enhance safety and aeronautical operations. The existing bridge is near the end of its useful life and does not comply with current Group VI Aircraft standard clearance requirements. Work is expected to commence in the third quarter of 2013 and expected to be completed in November 2014.
- **Building 144 Redevelopment -** Building 144 is the old Ramada Hotel that is not currently in use. Negotiations are currently ongoing with a developer. It is anticipated the footprint of the building could be expanded or decreased (demolishing part of building); however the height would not increase.

Landside - Perimeter

The landside - perimeter projects are located to the north and along the critical Air Operations Area (AOA) perimeter of JFK.

- **150th Avenue Rehabilitation** – This project entailed the rehabilitation of 150th Avenue between Cargo Plaza Road and North Boundary Road. Work associated with the rehabilitation included milling and overlaying the roadway with asphalt concrete; removal of approximately 20 percent of the roadway and replacing with full-depth asphalt concrete; repairing of curbs and sidewalks and adjusting of castings; and striping the roadway to its current configuration at the completion of paving. The project received a

Categorical Exclusion in February 2008. Work began in August of 2008 and was completed in 2009.

- **Perimeter Strengthening** – This project entailed the installation of perimeter vehicle crash protection barriers. It provided a hardened perimeter, for the critical AOA perimeter, which will minimize potential intrusion of vehicles. The project replaced the fence structure in place. The project received a Categorical Exclusion in June 2008 and work was completed in 2009.
- **Existing Obstruction Maintenance** - There are approximately 312 existing Terminal Instrument Procedures (TERPS) tree obstructions in Idlewild Park that require removal to comply with FAA Order 8260.3B. In addition, there are trees in Idlewild Park that currently do not comply with Title 14 Code of Federal Regulation (CFR) Part 77. The Part 77 tree obstructions do not require removal but do typically require the installation of lights/light poles to identify the obstructions to pilots. In order to comply with Part 77 requirements the Port Authority plans to install up to seven light poles in Idlewild Park to identify the tree obstructions. The Port Authority is currently working with the New York City Department of Parks and Recreation on both of these Federal requirements.

5.20.2 CUMULATIVE IMPACTS BY ENVIRONMENTAL CATEGORY

Even when impacts are determined to be individually insignificant, the impacts can be collectively significant when taking place over a period of time. Therefore, the cumulative effects of environmental impacts were considered only for those categories determined to have impacts due to the Proposed Action. The construction schedule of the Proposed Action would overlap with the construction of other projects at JFK, including the Restricted Service Road (RVSR) J8 Bridge Relocation, Taxiway B redevelopment, Phase II of the Terminal 5 and 6 Redevelopment Project, Phase II of the Terminals 3 and 4 Redevelopment Project, possibly the demolition of Hangars 3, 4, and 5, and the redevelopment of Building 144.

Noise

The projects that would overlap with the Runway 4L/22R projects occur completely on Airport property. These projects would not increase the noise levels at the Airport. Therefore, no other past projects or future projects planned within the five-year time period that would combine with the noise impacts of the Proposed Action that would result in significant cumulative impacts.

Compatible Land Use

The projects that would overlap with the Runway 4L/22R projects occur completely on Airport property and are compatible with existing zoning, surrounding area land use plans, and the land uses on the Airport. In addition they would not create a wildlife hazard as defined in FAA AC 150/5200-33 nor affect any existing wildlife hazard area. Therefore, no cumulative adverse impacts on compatible land use would occur.

Socioeconomic Impacts, Environmental Justice, and Children's Health and Safety Risks

The Proposed Action would not be expected to contribute to any significant adverse cumulative socioeconomic impacts when considered in conjunction with the other projects at JFK. This is because the other projects occur on Airport property and are considered replacements of existing structures. The Proposed Action and other projects in the planning or construction stages do not appear to include any activities that would result in impacts to surface transportation. Therefore, no cumulative adverse impacts are expected.

Secondary (Induced) Impacts

No adverse cumulative secondary (induced) impacts would occur from the Proposed Action.

Air Quality

The Proposed Action would cause a temporary change in the net emissions due to the operation of construction equipment (refer to Appendix C, *Air Quality*). However, the emissions were shown to be *de minimis* under the Clean Air Act (as amended in 1990) General Conformity Rule. Further, the *de minimis* emissions are assumed to comply with the New York SIP and are not expected to cause an exceedance of any of the NAAQS, delay the attainment of any NAAQS, or worsen an existing violation any NAAQS.

Overall, the Proposed Action at JFK is expected to improve air quality as a result of improved aircraft efficiency and the resulting reduction in aircraft taxi time. Therefore, no cumulative adverse air quality impacts are anticipated from the Proposed Action in combination with the other projects whose construction overlaps with the Proposed Action.

Climate

The cumulative impact of this Proposed Action on the global climate when added to other past, present, and reasonably foreseeable future actions is not currently scientifically predictable. Aviation has been calculated to contribute approximately three percent of global carbon dioxide (CO2) emissions; this contribution may grow to five percent by 2050. Actions are underway within the U.S. and by other nations to reduce aviation's contribution through such measures as new aircraft technologies to reduce emissions and improve fuel efficiency, renewable alternative fuels with lower carbon footprints, more efficient air traffic management, market-based measures and environmental regulations including an aircraft CO2 standard. The U.S. has ambitious goals to achieve carbon-neutral growth for aviation by 2020 compared to a 2005 baseline, and to gain absolute reductions in GHG emissions by 2050. At present there are no calculations of the extent to which measures individually or cumulatively may affect aviation's CO2 emissions. Moreover, there are large uncertainties regarding aviation's impact on climate. The FAA, with support from the U.S. Global Change Research Program and its

participating federal agencies (e. g., NASA, NOAA, EPA, and DOE), has developed the Aviation Climate Change Research Initiative (ACCRI) in an effort to advance scientific understanding of regional and global climate impacts of aircraft emissions, with quantified uncertainties for current and projected aviation scenarios under changing atmospheric conditions.[22]

Water Quality

There would be an increase in the impervious area resulting from the widening of taxiways, taxiway fillets, and other taxiway extension and expansion projects. The total additional impervious areas resulting from the Proposed Action would be approximately 14 acres, which represents less than a 0.5 percent increase in impervious surface at the Airport. The additional paved area would not support any activity that would generate additional waste water. However, the Proposed Action would improve the drainage system through the installation of drains on either side of the taxiways that would correct the catch basin swale conditions in the areas of the taxiway shoulders. The drains would lead to existing catch basins that are connected to the stormwater discharge system. All construction activities would be conducted following Best Management Practices (BMP's) and applicable local, state, and Federal regulations. A plan for soil erosion and sediment control would be required of all contractors by the Port Authority. Such procedures are routinely implemented for all airport projects; therefore no significant cumulative water quality impacts would be expected.

Department of Transportation: Section 4(f) Resources

There are no Department of Transportation, Section 4(f) resources within the area of the other projects and there would be no impacts to Section 4(f) resources from the Proposed Action. Therefore, there would be no cumulative adverse impacts to Section 4(f) resources.

Historic, Architectural, Archaeological, and Cultural Resources

There would be no impacts to historic, architectural, archaeological, or cultural resources associated with the Proposed Action. The Proposed Action would not have an impact on any prehistoric, historic, archeological, or paleontological resources because the project would be limited to only previously disturbed portions of the airfield. As a result, there would be no cumulative adverse impacts to historic, architectural, archaeological, and cultural resource.

Wetlands

There are no identified wetlands or regulated water features in the Proposed Action project areas. Based on current National Wetland Inventory maps, the nearest wetlands are north of Runway 4L/22R. The Proposed Action was designed to avoid these wetlands. The project would occur within the 150-foot area adjacent to the tidal wetlands, also known as a wetland buffer zone. This is not considered a

[22] Nathan Brown, et. al. *The U.S. Strategy for Tackling Aviation Climate Impacts,* (2010). 27th International Congress of the Aeronautical Sciences.

significant impact to the wetlands and would be authorized pursuant to an existing permit issued to the Port Authority by NYSDEC. This permit authorizes maintenance of Port Authority waterfront structures and elements thereof within New York City. Based on the list of recent, ongoing, and future projects, no cumulative adverse impacts on wetlands are expected.

Floodplains

A section of the Proposed Action would encroach in the special flood hazard area subject to inundation by the 100-year floodplain. However, the Proposed Action is not considered a "critical action," as defined in the Water Resources Council Floodplain Management Guidelines. The Proposed Action would not be located in a 500-year floodplain as designated by Federal Emergency Management Agency (FEMA). Therefore, there would be no floodplain impacts associated with the Proposed Action.

Coastal Resources

Coastal Zone Management Program

The area affected by the Proposed Action is within the coastal zone, but would not adversely impact coastal zone resources and is consistent with the Waterfront Revitalization and Coastal Resources Act (WRCRA) and New York City on the Waterfront Revitalization Program (see concurrence letter in Appendix A). Because the Proposed Action would not affect the coastal zone for the State of New York, there are not expected to be cumulative adverse impacts to the coastal zone.

Coastal Barriers

There would be no coastal barrier impacts associated with the Proposed Action. As a result, there would be no cumulative impacts to Coastal Barriers.

Natural Resources and Energy Supply

The Proposed Action would not increase the use of natural resources or energy consumption. The Proposed Action and other projects in the planning or construction stages do not appear to include any activities that would require new sources of energy that could not be accommodated by existing facilities. The combination of these projects with the Proposed Action also does not appear to require major changes in energy facilities or use. Based on the list of recent, ongoing, and future projects, no cumulative adverse impacts on energy supply or natural resources are expected.

Hazardous Materials, Pollution Prevention, and Solid Waste

The Proposed Action would not increase the quantity of hazardous materials present in the environment or exacerbate existing contamination. Based on the list of recent, ongoing, and future projects, there does not appear to be other projects that, when combined with the Proposed Action, would result in significant adverse cumulative impacts from hazardous materials. Therefore the Proposed Action would not contribute to any cumulative impacts from future actions with respect to hazardous materials.

Solid waste would be generated from the Proposed Action in the form of soil and asphalt resulting from the rehabilitation of the runway. Materials and debris would be recycled to the greatest extent feasible. Materials that cannot be recycled would be disposed of in accordance with all Federal, state, and local regulations. There is sufficient disposal capacity (out-of-state landfills, recycling centers, and incinerators) in the greater metropolitan area to handle the waste load. None of the other projects would result in significant amounts of solid waste. Therefore, the Proposed Action would not contribute to any cumulative impacts from future actions with respect to solid waste.

Construction Impacts

The Proposed Action is not anticipated to cause any significant adverse construction-related impacts. This is due to the temporary nature of construction and mitigation procedures set forth in FAA AC 150/5370-10E, *Standards for Specifying Construction of Airports,* as well as Port Authority's *John F. Kennedy International Airport Best Management Practices*. However, the cumulative impact of related construction projects, in addition to the Proposed Action, might have potential temporary impacts related to air quality, surface traffic congestion, and noise.

Air Quality Impacts

As discussed in Section 5.18.2, the incorporation of the previously referenced procedures into the Proposed Action's construction specifications would reduce the fugitive emissions of dust (particulate matter) and prevent particulate matter from becoming airborne. Such measures are anticipated to reduce any potential construction impacts to air quality in the immediate project area. All related projects at JFK are subject to similar construction mitigation measures and are isolated from any neighboring community by the surrounding roadways, therefore no significant cumulative impacts are expected to occur due to the Proposed Action with regard to construction related activities.

Noise Impacts

As discussed in Section 5.18.3, the only potential impacts of the Proposed Action due to construction noise are to operators of construction equipment and nearby construction workers; construction noise is not expected to impact nearby communities. Potential construction noise impacts are a localized and temporary occurrence. Related projects may have similar localized and temporary impacts,

and may add to ambient noise levels. Because the project area is isolated from neighboring communities by the surrounding roadways, no significant cumulative impacts are expected to occur due to the Proposed Action with respect to construction noise.

Surface Traffic Congestion

Due to the coordination of off-peak scheduled material transfer and specific route management measures discussed in Section 5.18.4, no significant impacts related to construction surface traffic are anticipated due to the Proposed Action. Related projects at JFK are subject to similar coordination measures, therefore no significant cumulative impacts are expected to occur due to the Proposed Action with respect to construction related surface traffic.

5.20.3 SUMMARY OF CUMULATIVE IMPACTS

The cumulative impact of the Proposed Action, when added to the other past, present, and reasonable foreseeable future actions described above, is collectively insignificant given the history of intense urbanization that has occurred in the New York City metropolitan area. JFK will continue to have effects on the region similar to those that already exist with or without the Proposed Action. The beneficial effects are primarily economic and employment-related.

When considered together with other projects recently completed, underway, and proposed at JFK, the Proposed Action is consistent with the long-range goals of the Port Authority. Runway 4L/22R is in need of rehabilitation, widening, and needs to be brought into compliance with the FAA's RSA standards.

Other projects described in this section will provide long-term benefits similar to the Proposed Action: enhanced operating efficiency and safety, reduced energy consumption, and improved functionality and customer service. The cumulative impact of these actions is generally anticipated to be positive, with the exception of temporary impacts related to construction. Extensive construction mitigation procedures will be put into place to alleviate potential adverse impacts. As a whole, these projects will allow JFK to better serve its customers, continue to prosper as a major economic engine, and provide positive environmental and social benefits to its neighbors.

5.21 ADVERSE IMPACTS THAT CANNOT BE AVOIDED IF THE PROPOSED ACTION IS IMPLEMENTED

Because implementation of the Proposed Action would not result in any significant adverse environmental impacts, there would not be any adverse impacts of the Proposed Action that cannot be avoided.

Chapter 6

CHAPTER 6
MITIGATION

Mitigation measures were not identified for this project because there were no significant impacts identified for any environmental category. However, permits will be applied for the Proposed Action occurring within the 150-foot area adjacent to the tidal wetlands, also known as a wetland buffer zone. Proposed projects in the Coastal Zone require concurrence. The NYSDOS concurred that the Proposed Action is consistent with the State's Coastal Zone Management Program. A copy of the correspondence is included in Appendix A, *Agency Coordination*. The construction documents would include standard language and details on dust and sedimentation control as well as preventive measures for construction activities:

- Removal protocols, established by Port Authority, the City, and state (NYSDEC and New York State Department of Labor) regulators would be followed, thereby mitigating potential hazards. These procedures would address issues of noise and dust control, and thereby protect the public and workers from exposure to hazardous materials.
- Construction protocols would ensure that dust is minimized and contained. No lead dust is anticipated.
- Construction protocols would be put in place to identify and manage the environmental issues that arise due to the discovery of soil and/or groundwater contamination on construction sites. In addition, design of storm drainage and navigational aid pads would include provisions to limit the migration of suspended solids or other pollutants along these pathways.
- During construction, best practices would be used to deter diamondback terrapin turtles from the construction site and prevent any disturbance to the turtles while laying eggs. The Port Authority's on-site wildlife staff would be on hand to monitor the situation during the nesting period. Any turtles found in the construction area would be relocated to another area and released near Jamaica Bay.

Under the Proposed Action Best Management Practices (BMPs), such as catch basins with inserts, and other water quality management devices, would be adopted to manage the stormwater collected. Hydrodynamic water quality devices (the generic term for a Stormceptor or Downstream Defender) would be installed to help protect the water quality in the Jamaica Bay where stormwater is discharged. Discharges from JFK are permitted under the State Pollution Discharge Elimination System (SPDES) Permit issued by the New York State Department of Environmental Conservation (NYSDEC) to the Port Authority (Permit# NY-0008109). All discharges occurring via the stormwater conveyance system would be in accordance with the requirements set forth in the Port Authority permit.

In addition, the Port Authority currently has a Spill Prevention, Control, and Countermeasure (SPCC) Plan for JFK that contains appropriate spill prevention and clean up measures in the event that a spill occurs.

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Chapter 7

CHAPTER 7
PUBLIC INVOLVEMENT

To satisfy requirements for public involvement, a Local Notice of Availability and Request for Comment was published in the *Daily News (Queens edition), Queens Courier (Sun Courier), Queens Chronicle, South East Queens Press, Queens Times Ledger, Queens Ledger, Newsday (Long Island), LI Herald, Long Island Press, El Diaro*, and the *Sing Tao Daily* newspapers. A copy of the notice is provided in Appendix E, *Public Involvement*. The Revised Draft EA is available at the Port Authority's Administration Building at JFK, Port Authority's central staff office in Manhattan (225 Park Avenue South) and on the website, http://www.panynj.gov/about/pdf/JFK-Runway-4L-22R-EA.pdf. The comment period is from October 17, 2013 to November 18, 2013. Comments on this EA should be sent to:

The Port Authority of NY & NJ
225 Park Avenue South, 9th Floor
New York, NY 10003
Attn: Edward Knoesel.

In addition, comments may be emailed to JFKRWYEA@panynj.gov with the subject heading "JFK RWY 4L-22R EA COMMENT."

As discussed in Chapter 1, a Draft EA, *Runway 4L/22R Improvements, John F. Kennedy International Airport,* was prepared and published for public comment in May 2012. Since the publication of the May 2012 Draft EA, the Port Authority has redefined the proposed project to minimize impacts to Idlewild Park (see Chapter 3, Section 3.2 for a description of the revised Proposed Action). All public comments received on the May 2012 Draft EA are included in this Revised Draft EA in Appendix D, *Comments Received on the May 2012 Draft Environmental Assessment* and were considered in the preparation of this Revised Draft EA.

There was a 30 day comment period from May 17, 2012 to June 15, 2012 on the May 2012 Draft EA. One public comment was received during this time. The comment letter is included in Appendix D. Following the close of the comment period, the Eastern Queens Alliance, Inc. requested a meeting with the Port Authority and FAA to discuss the EA. In response, the Port Authority attended a meeting on October 4, 2012 at St. Peter's Lutheran Church in Rosedale-Queens to discuss the Runway 4L/22R projects. At the meeting the Port Authority staff announced that additional comments would be accepted through October 19, 2012. As previously stated, comment letters received during this time are included in Appendix D of this Revised Draft EA.

A Port Authority staff member attended a Town-Village Aircraft Safety and Noise Committee (TVASNC) meeting on May 21, 2012 in Malvern, Nassau County, NY. The availability of the May 2012 Draft EA was announced at the meeting which was televised and shown on local public access television.

A public information meeting will be held to highlight modifications in the revised EA on October 24, 2013 at 7:30 p.m. at St. Peter's Church located at 224-04 147th Avenue, Queens, New York 11413.

To ensure that interested parties are informed, another advertisement will be placed in the *Daily News (Queens edition), Queens Courier (Sun Courier), Queens Chronicle, South East Queens Press, Queens Times Ledger, Queens Ledger, Newsday (Long Island), LI Herald, Long Island Press, El Diaro*, and the *Sing Tao Daily* newspapers announcing the FAA's decision. Copies of the Final Environmental Assessment and the FAA's decision will be available at the Port Authority's Administration Building at JFK, Port Authority's central staff office in Manhattan, and on the website, http://www.panynj.gov/about/pdf/JFK-Runway-4L-22R-EA.pdf.

Chapter 8

CHAPTER 8
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Chapter 9

CHAPTER 9
REFERENCES

P.L. 91-190, 42 U.S.C. 4321, et. seq., *National Environmental Policy Act*, 1969.

Environmental Assessment, Terminal 5 and 6 Redevelopment Project, John F. Kennedy International Airport, The Port Authority of New York & New Jersey, October 2004

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Environmental Evaluation Form "C" for Airport Development Projects, American Airlines Terminal Redevelopment, John F. Kennedy International Airport, The Port Authority of New York & New Jersey, August 1999 (Final Report)

Federal Aviation Administration (FAA), Air Quality Procedures for Civilian Airports and Air Force Bases.

Federal Aviation Administration (FAA), Advisory Circular 150/5200-33 May 1, 1997.

Federal Aviation Administration (FAA), Change 1 to FAA Order 1050.1E, *Environmental Impacts: Policies and Procedures,* March 20, 2006.

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John F. Kennedy International Airport Best Management Practices Plan. Prepared by Malcolm Pirnie, Inc. July 2009 (Revised August 2010).

Appendix A

APPENDIX A
AGENCY COORDINATION

This appendix contains the agency coordination completed for this Environmental Assessment on the Runway 4L/22R projects.

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Agency

New York City Economic Development Corporation

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FIRST AMENDMENT
TO
AMENDED AND RESTATED AGREEMENT OF LEASE
OF THE MUNICIPAL AIR TERMINALS

THIS FIRST AMENDMENT TO AMENDED AND RESTATED AGREEMENT OF LEASE OF THE MUNICIPAL AIR TERMINALS (this "**Amendment**"), is entered into the 7th day of August, 2013, by and between THE CITY OF NEW YORK, a municipal corporation of the State of New York with its principal offices at City Hall, New York, New York 10007 (the "**City**"), and THE PORT AUTHORITY OF NEW YORK AND NEW JERSEY, a body corporate and politic created by compact between the States of New York and New Jersey with the consent of the Congress of the United States of America, with its principal offices at 225 Park Avenue South, New York, New York 10003 ("**Port Authority**").

WHEREAS, the City and the Port Authority entered into that certain Amended and Restated Agreement of Lease of the Municipal Air Terminals, dated as of November 24, 2004 (the "**Lease**");

WHEREAS, the City wishes to lease to the Port Authority and the Port Authority wishes to let from the City certain additional real property adjacent to John F. Kennedy International Airport for the purposes set forth herein;

WHEREAS, the transfers in the Lease and this Amendment were subject to the Uniform Land Use Review Procedure resulting in New York City Planning Commission Resolution #C 040191 PPQ adopted March 10, 2004;

WHEREAS, the Port Authority wishes to surrender unto the City and the City wishes to accept such surrender of a portion of the Demised Premises as more particularly set forth herein; and

WHEREAS, the City and the Port Authority have agreed to amend certain other terms of the Lease on the terms and conditions set forth herein.

NOW THEREFORE, in consideration of the mutual covenants and agreements herein contained, the City and the Port Authority hereby agree that the Lease shall be, and hereby is, amended as follows:

1. Definitions. All capitalized terms not otherwise defined herein shall have the respective meanings set forth in the Lease.

2. Addition of Parcels to the Demised Premises.

a. Fan Parcel.

i. The City hereby demises and leases to the Port Authority and the Port Authority does hereby take from the City an area consisting of approximately 14.58 acres located north of runway four left, as more particularly labeled on the surveys prepared by

Stantec Consulting Services dated January, 2013 attached hereto as Exhibit A (the "**Surveys**") as the "Fan Parcel" and as further described in Exhibit B attached hereto (the "**Fan Parcel**"), in order to accommodate the construction of a runway safety area for Runway 4L-22R and the resulting adjustment of North Boundary Road, construction of a patrol road and relocation of Equipment, and the Port Authority shall not develop or use the Fan Parcel for any other purposes. The Lease is hereby amended so that commencing on the date hereof, the Demised Premises shall be increased by, and for all purposes under the Lease, shall be deemed to include the Fan Parcel, on the same terms and conditions as set forth in the Lease and subject to any title matters to which the Fan Parcel is subject at the time of inclusion of the same under the Lease.

ii. Development Rights. Notwithstanding the foregoing, the City shall retain any and all development rights from the Fan Parcel and the Port Authority's use of the Fan Parcel shall not make use of any floor area (as defined in the Zoning Resolution of the City of New York (the "**Development Rights**"). The Port Authority shall cooperate with the City and execute documents necessary for the City to retain and use the Development Rights so long as use is not contrary to applicable FAA regulations, including without limitation, "Objects Affecting Navigational Air Space Obstruction Standards" which have the functions and standards specified in Runway Protection Zone guidelines in FAA Advisory Circular "Airport Design AC 150/15300-13", Paragraph 2121, and any amendments or modifications thereto.

iii. Wetland Bank Credits. The City shall retain any potential rights to wetland bank credits from the Fan Parcel and/or the Turning Lane (as hereinafter defined), if any.

b. Turning Lane. In the event the New York State Department of Transportation ("**NYSDOT**") approves the construction of (i) an area consisting of approximately 0.15 acres for a turning lane, as more particularly labeled on the Surveys as the "Turning Lane" and as further described in Exhibit C attached hereto (the "**Turning Lane**") and (ii) a curb cut at the existing traffic light off Rockaway Boulevard at International Airport Center Boulevard (the "**Curb Cut**"), the Lease shall be deemed amended so that commencing on the date of notice from the Port Authority to the City of such NYSDOT approval (such notice to be given promptly upon NYSDOT approval), the Demised Premises shall be increased by, and for all purposes under the Lease, shall be deemed to include the Turning Lane, on the same terms and conditions as set forth in the Lease and subject to any title matters to which the Turning Lane is subject at the time of inclusion of the same under the Lease. Upon construction of the Turning Lane, it shall be deemed an on-airport roadway. No further amendment shall be required to effectuate the foregoing; however, at the request of either party, the other party shall acknowledge in writing the addition of the Turning Lane to the Demised Premises as set forth in this Section 2(b).

3. Surrender of Parcels from the Demised Premises.

a. East of Fan Parcel. The Port Authority hereby gives, grants and surrenders unto the City an area consisting of approximately 0.82 acres located east of the Fan Parcel, as more particularly labeled on the Surveys as the "East of Fan Parcel" and as further described in Exhibit D attached hereto (the "**East of Fan Parcel**"), and all its right, title and interest therein to the City and the City hereby accepts the Port Authority's surrender of the East

of Fan Parcel. The Lease is hereby amended so that commencing on the date hereof the East of Fan Parcel shall be deemed deleted from the Demised Premises leased to the Port Authority under the Lease.

b. Impound Lot. The Port Authority hereby gives, grants and surrenders unto the City an area consisting of approximately 0.14 acres and an area consisting of approximately 1.38 acres in the impound lot area, as more particularly labeled on the Surveys as the "NYC Police Impound Lot Parcel 1" and "NYC Police Impound Lot Parcel 2", respectively, and as further described in Exhibit E attached hereto (collectively, the "**Impound Lot Piece**"), and all its right, title and interest therein to the City and the City hereby accepts the Port Authority's surrender of the Impound Lot Piece. The Lease is hereby amended so that commencing on the date hereof the Impound Lot Piece shall be deemed deleted from the Demised Premises leased to the Port Authority under the Lease.

4. Impound Lot. Section 21 of the Lease is hereby amended by adding to the end thereof a new Section 21.5 to read as follows:

"21.5. Off-Airport Parcel: Impound Lot.

21.5.1 The City's Police Department ("**NYPD**") is utilizing one of the JFK Northern Off-Airport Parcels as an impound lot which requires use of on-airport roadways. The City (NYPD) shall use good faith efforts to generally operate within the estimated daily vehicle volumes set forth in that certain environmental assessment statement dated August 2008, and hereby designates the NYPD Facilities Management Division (646-610-7650) as the point of contact with whom the Port Authority may address airport operation concerns resulting from excessive vehicular volume to the impound lot.

21.5.2 The NYPD impound lot is connected to the Port Authority Water System Property and a submeter has been installed to measure use at the impound lot. The City shall reimburse (or credit) the Port Authority for its outside costs (*i.e.* out-of-pocket costs to third parties) for water and administrative billing with respect to usage at the impound lot.

21.5.3 Any and all construction, maintenance or repair of the water and sanitary utility connections to the Port Authority Water System Property shall be subject to the Port Authority's approval pursuant to the Tenant Construction and Alteration Process Manual dated August 2011.

21.5.4 In the event the City no longer operates the impound lot and intends to transfer ownership or occupancy of such parcel to a third party, then any instrument pursuant to which the City conveys or leases such parcel to a subsequent owner or occupant shall expressly impose the obligation on any such subsequent owner or occupant to cooperate with the Port Authority regarding such owner's or occupant's use of such parcel so as not to interfere with airport operations and otherwise comply with the provisions of this Lease (including but not limited to Section 21.3.1 hereof related to the usage of on-airport roadways by off-airport parcels). In the event there is a change in use of the impound lot in connection with a subsequent owner or occupant, to the extent the impound lot remains connected to the Port Authority Water

System Property, the Port Authority reserves the right to require such water and sewer approvals as it deems necessary to address such change in use."

5. Development Parcel. Section 21 of the Lease is hereby amended by adding to the end thereof a new Section 21.6 to read as follows:

"21.6. Off-Airport Parcel: Development Parcel.

21.6.1 The City intends to combine the East of Fan Parcel with adjacent areas owned by the City such that the City shall have use of an area of approximately 4.18 acres of developable land area in a configuration agreeable to the City, as more fully labeled on the Surveys as the "Development Parcel" and as further described in Exhibit F attached hereto (the **Development Parcel**"). The Development Parcel shall not be bisected by North Boundary Road or any other road under the control of the Port Authority. The Port Authority shall cooperate with the City in any informational requests the City may have with respect to the Development Parcel and any surrounding roadways. In the event on-airport roadways to the Development Parcel are closed due to construction, repairs or otherwise, the Port Authority shall cooperate with the City and/or NYCEDC to provide access to the Development Parcel upon reasonable advance notice and with Port Authority accompanying personnel for purposes of inspection, showing the property to third parties, or otherwise. The City or any subsequent owners or occupants shall have the right to use and develop the Development Parcel for airport-compatible uses that the City determines to be in its best interest, subject to and in accordance with, the applicable sections of the Lease. The Port Authority shall not be precluded from submitting a proposal in response to a public procurement, if any, for the Development Parcel; provided however that if the Port Authority submits such a proposal, the Port Authority shall be treated no more or less fairly than any other respondent.

21.6.2 Any instrument pursuant to which the City conveys or leases the Development Parcel to a subsequent owner or occupant shall expressly impose the obligation on any such subsequent owner or occupant to cooperate with the Port Authority regarding such owner's or occupant's use of the Curb Cut and/or the on-airport roadway accessing the Development Parcel so as not to interfere with airport operations. Notwithstanding anything to the contrary contained in Section 21.3.1 hereof, neither the City, nor any subsequent owner or occupant of the Development Parcel shall be liable for any payments related to on-airport roadway use, security or maintenance; however, any instrument pursuant to which the City conveys or leases the Development Parcel shall include a requirement that, in the event the Curb Cut and/or on-airport roadway accessing the Development Parcel requires an upgrade in its construction as a result of a subsequent owner's or occupant's use above baseline assumptions (i.e. forty five (45) total vehicles per hour (including cargo trucks) to or from the Development Parcel during hours of business operations on the Development Parcel), such subsequent owner or occupant shall be responsible to the Port Authority on a prorated basis for contributions toward construction and maintenance upgrades to the Curb Cut and/or such on-airport roadway. If such usage to or from the Development Parcel exceeds the baseline assumptions detailed above, then the subsequent owner or occupant shall prepare a level of usage report and road capacity study for the Port Authority's review and reasonable determination as to upgrades, if any, to the Curb Cut and/or an on-airport roadway accessing the Development Parcel.

21.6.3 Should the owner or occupant of the Development Parcel seek to make a connection to any utilities (excluding electricity unless circumstances permit such connection) that are located on property controlled by the Port Authority ("**Utility Connection**"), the Port Authority shall cooperate with the owner or occupant of the Development Parcel to assess the feasibility of the Utility Connection and to potentially identify a design of the Utility Connection that will, at the Port Authority's sole and complete discretion, not interfere with current or future operations of the Port Authority and not be in violation of any applicable agreement (as such agreement exists as of the date hereof) concerning utilities to which the Port Authority is a party. Such cooperation shall include, but is not limited to, providing technical information regarding the utility systems on property controlled by the Port Authority. Any compensation that the Port Authority requires in exchange for providing the owner or occupant of the Development Parcel, or persons or entities employed by them, with access to the property controlled by the Port Authority for the purpose of constructing the Utility Connection thereon, or for providing the owner or occupant of the Development Parcel with utility service through a Utility Connection, shall not exceed the standard rates of compensation that the Port Authority charges to on-airport tenants for similar access or services. The Port Authority shall not provide any access, services, or other items for which it expects compensation before it has notified the owner or occupant of the Development Parcel of such an expectation and the owner or occupant has agreed that it shall pay such compensation.

21.6.4 Development Parcel Access. The Port Authority shall construct, by no later than June 30, 2014 (as such date may be adjusted as set forth below, the "**Completion Date**"), the Turning Lane and Curb Cut and any necessary on-airport roadway that will allow the Development Parcel (as hereinafter defined) Access (as hereinafter defined) from and to Rockaway Boulevard via the Curb Cut. For the purposes of this Section 21.6, "**Access**" means unimpeded use of a road (including the Turning Lane and Curb Cut, as applicable) that is constructed to a standard sufficient to make the Development Parcel operable for airport-related users and associated vehicles, including cargo trucks.

(a) On or before December 31, 2013, upon notice to the City, the Port Authority has the unilateral right to extend the Completion Date to December 31, 2014. If the Port Authority fails to exercise such unilateral right to extend the Completion Date, or if the Port Authority requires further extension of the Completion Date, then the Port Authority may make written request to the City to extend the Completion Date. Such request shall include a proposed Completion Date and the status of the construction. The City shall respond to such request within thirty (30) business days. Any extension of the Completion Date shall be in the City's sole discretion.

(b) In the event the Turning Lane is not added to the Demised Premises pursuant to Section 2(b) of the Amendment because NYSDOT did not approve the Turning Lane and Curb Cut, the Port Authority, at its discretion, may construct another on-airport roadway that allows the Development Parcel Access from and to Rockaway Boulevard via another entry/exit point, such construction to be completed by no later than the Completion Date.

21.6.5 Transfer of Development Parcel to Port Authority. In the event there is no Access to the Development Parcel by the Completion Date (whether due to the

inability to obtain NYSDOT approval for the Turning Lane and Curb Cut, failure of the Port Authority to construct or to provide for a comparable road to Access the Development Parcel, or otherwise), the Lease shall be amended so that commencing on the date of notice from the City to the Port Authority (which notice can be given any time between the Completion Date (as same maybe extended in accordance with the provisions of Section 21.6.4(a) above) and December 31, 2016) that the City is willing to add the Development Parcel and Turning Lane (if not already added) to the Lease, the Demised Premises shall be increased by, and for all purposes under the Lease, shall be deemed to include the Development Parcel and Turning Lane (if not already added), on the same terms and conditions as set forth in the Lease and subject to any title matters to which the Development Parcel and Turning Lane are subject at the time of inclusion of the same under the Lease, in which event the Port Authority shall make a one-time additional rent payment to the City at the time of such addition to the Lease in an amount equal to the appraised value of Thirteen Million Six Hundred Seventy Three Thousand Dollars ($13,673,000), escalated at an annualized rate of three percent (3%) from December 1, 2012, compounded on an annual basis each December 1 thereafter, and pro-rated monthly for any partial year on which the payment date falls."

6. Maintenance of Fences. Section 11 of the Lease is hereby amended by adding to the end thereof a new Section 11.4 to read as follows:

"11.4. Maintenance of Fences. The Port Authority, at its sole cost, shall be responsible for the maintenance or removal of all portions of the boundary fence located along Rockaway Boulevard fronting land leased to the Port Authority, including the Fan Parcel. The City or its designees shall continue to be responsible for maintenance of the boundary fence along City-owned property not leased to the Port Authority."

7. Except as amended by this Amendment, the Lease and all the covenants, agreements, terms and conditions contained therein shall remain in full force and effect and are incorporated herein by reference, and the Lease, as so amended, is hereby in all respects ratified and confirmed. Any future reference to the Lease shall be deemed to be a reference to the Lease as amended by this Amendment and as the same may, from time to time, be hereafter further modified.

8. This Amendment may not be changed orally, but only by a writing signed by the party against whom enforcement thereof is sought.

9. The covenants, agreements, terms and conditions contained in this Amendment shall bind and inure to the benefit of the parties hereto and their respective successors and assigns.

10. This Amendment may be executed in two or more counterparts, each of which shall be deemed to be an original, but all of which together shall constitute one and the same agreement.

11. Each party herein covenants, warrants and represents to the other party that it has had no dealings, conversations or negotiations with any broker concerning the execution and delivery of this Amendment.

12. The parties hereto represent and warrant to each other that each has full right and authority to enter into this Amendment and that the person signing this Amendment on behalf of the City and the Port Authority, respectively, has the requisite authority for such act.

13. No commissioner, director, elected official, officer, agent, representative or employee of the Port Authority or the City or EDC shall be charged personally by either party hereto with any liability or held personally liable under any of the terms or provisions of this Amendment or because of its execution or because of any breach or attempted or alleged breach hereof.

14. If any term or provision of this Amendment or the application thereof to any persons or circumstances shall, to any extent, be held to be invalid or unenforceable, the remainder of this Amendment or the application of such term or provision to persons or circumstances other than those as to which it is held to be invalid or unenforceable shall not be affected thereby, and each term and provision of this Amendment shall be valid and enforceable to the fullest extent permitted by law.

[Signature page to follow]

IN WITNESS WHEREOF, person or officers hereunto duly authorized for the Port Authority and the City have duly executed this Amendment as of the day and year first above written.

Approval as to Form:

Acting Corporation Counsel

THE CITY OF NEW YORK

By: _____
Name: Robert W. Walsh
Title: Commissioner, Department of Small Business Services

Approved as to Form:

DISRAELI BUCHBINDER
GENERAL COUNSEL

THE PORT AUTHORITY OF NEW YORK AND NEW JERSEY

By: _____
Name: Patrick J. Foye
Title: Executive Director

APPROVED:
FORM | TERMS

STATE OF NEW YORK)
) ss.:
COUNTY OF NEW YORK)

On the 22 day of May in the year 2013, before me, the undersigned, a Notary Public in and for said state, personally appeared Patrick J. Foye, personally known to me or proved to me on the basis or satisfactory evidence to be the person whose name is subscribed to the within instrument and acknowledged to me that he/she executed the same in his/her capacity, and that by his/her signature on the instrument, the person, or the entity upon behalf of which the person acted, executed the instrument.

RISA A. RESNICK
Notary Public, State of New York
No. 02RE5075256
Qualified in New York County
Commission Expires 9/5, 2015

Notary Public

STATE OF NEW YORK)
) ss.:
COUNTY OF NEW YORK)

On the 2 day of July in the year 2013, before me, the undersigned, a Notary Public in and for said state, personally appeared Robert Walsh, personally known to me or proved to me on the basis or satisfactory evidence to be the person whose name is subscribed to the within instrument and acknowledged to me that he/she executed the same in his/her capacity, and that by his/her signature on the instrument, the person, or the entity upon behalf of which the person acted, executed the instrument.

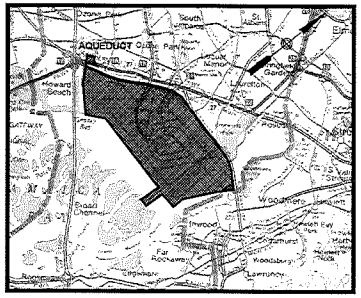
ANDREW SCHWARTZ
Notary Public, State of New York
No. 24-4943703
Qualified in Kings County
Commission Expires Oct. 31, 2014

Notary Public

EXHIBIT A

SURVEYS

(SEPARATE ATTACHMENT)



KEY MAP
NOT TO SCALE

All that certain plot, piece or parcel of land, situate in the Borough and County of Queens, City and State of New York, bounded and described as follows:

Beginning at a point on the southerly side of International Airport Center Boulevard formerly known as Rockaway Boulevard, distant easterly 2,182.00 feet along said southerly side of International Airport Center Boulevard from where it intersects with the easterly side of Boundary Road, said Point of Beginning having the coordinates of South 51133.14 East 76237.51;

Running thence the following fourteen (14) courses and distances;

1. South 10 degrees 01 minute 51 seconds West, a distance of 70.61 feet to a non-tangent point of curvature, thence;
2. Along an arc curving to the right having a radius of 135.00 feet, an arc length of 62.74 feet, a central angle of 26 degrees 37 minutes 42 seconds, a chord bearing of South 09 degrees 50 minutes 03 seconds East, and a chord distance of 62.18 feet to a point of non-tangent, thence;
3. South 03 degrees 31 minutes 07 seconds West, a distance of 110.19 feet to a non-tangent point of curvature, thence;
4. Along an arc curving to the left having a radius of 90.72 feet, an arc length of 59.70 feet, a central angle of 37 degrees 42 minutes 03 seconds, a chord bearing of South 15 degrees 45 minutes 11 seconds East, and a chord distance of 58.63 feet to a point of non-tangent, thence;
5. South 34 degrees 40 minutes 35 seconds East, a distance of 22.71 feet to a non-tangent point of curvature, thence;
6. Along an arc curving to the left having a radius of 80.35 feet an arc length of 39.44 feet and a central angle of 28 degrees 07 minutes 17 seconds, a chord bearing of South 48 degrees 48 minutes 09 seconds East, and a chord distance of 39.04 feet to a non-tangent point of curvature, thence;
7. Along an arc curving to the left having a radius of 4564.98 feet an arc length of 304.88 feet and a central angle of 03 degrees 49 minutes 36 seconds, a chord bearing of South 86 degrees 25 minutes 17 seconds West, and a chord distance of 304.82 feet to a point of non-tangent, thence;
8. South 84 degrees 22 minutes 06 seconds West, a distance of 773.64 feet to a non-tangent point of curvature, thence;
9. Along an arc curving to the right having a radius of 3369.00 feet an arc length of 96.69 feet and a central angle of 01 degree 38 minutes 40 seconds, a chord bearing of South 85 degrees 11 minutes 26 seconds West, and a chord distance of 96.69 feet to a point of non-tangent, thence;
10. North 01 degrees 39 minutes 00 seconds East, a distance of 346.72 feet to a point, thence,
11. North 52 degrees 35 minutes 18 seconds West, a distance of 50.83 feet to a point, thence,
12. North 89 degrees 50 minutes 24 seconds West, a distance of 433.00 feet to a point, thence;
13. North 00 degrees 03 minutes 57 seconds West, a distance of 277.36 feet to a point, thence;
14. South 82 degrees 24 minutes 03 seconds East, a distance of 1598.46 feet to the True Point and Place of Beginning.

Containing 635,155 square feet or 14.58 acres more or less.

The coordinates and bearings hereinabove mentioned in the description refer to the rectangular system of coordinates established by the Topographical Bureau of the Borough of Queens, City of New York, grid North being 28 degrees 59 minutes 13.5 seconds east of true north.

Parcel 2 Description

All that certain plot, piece or parcel of land, situate in the Borough and County of Queens, City and State of New York, bounded and described as follows:

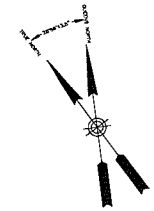
Beginning at a point on the southerly side of International Airport Center Boulevard formerly known as Rockaway Boulevard, distant easterly 5526.52 feet along said southerly side of International Airport Center Boulevard from where it intersects with the easterly side of Boundary Road, said Point of Beginning having the coordinates of South 51210.01 East 76813.66;

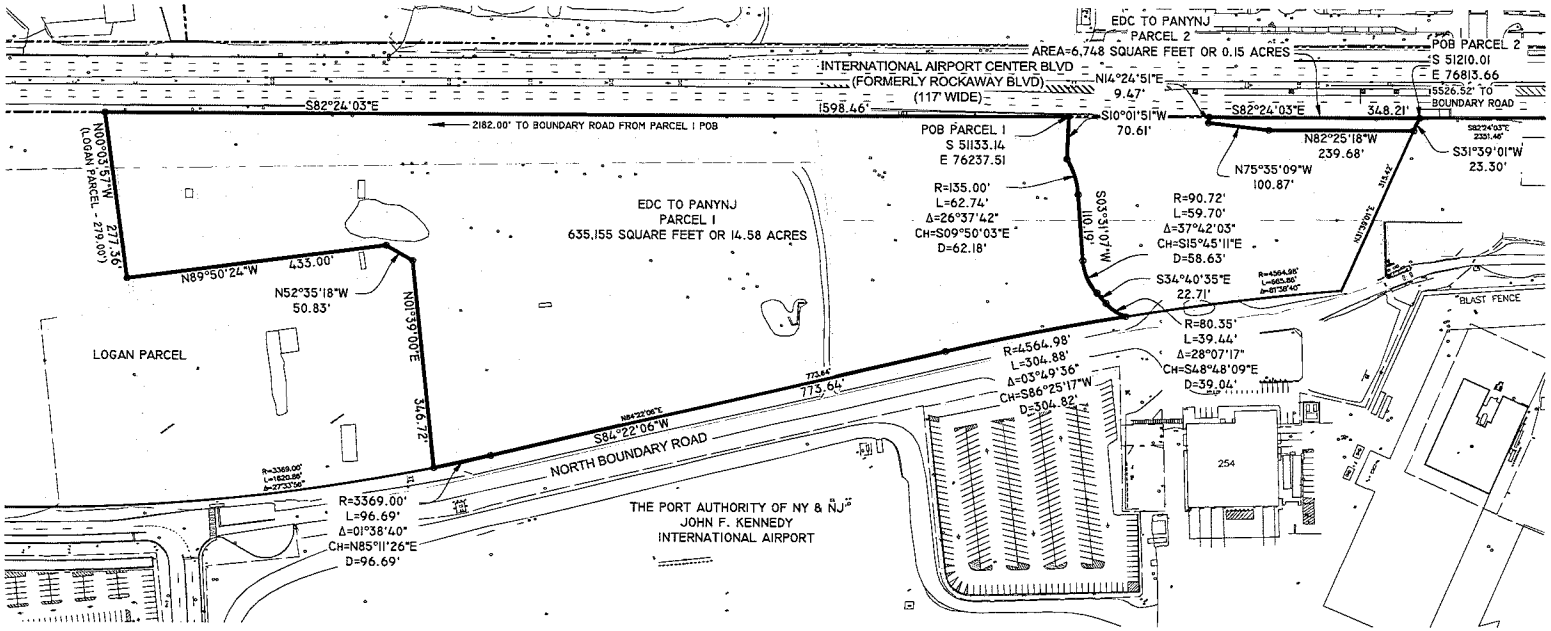
Running thence the following five (5) courses and distances;

1. South 31 degrees 39 minutes 01 second West a distance of 23.30 feet to a point, thence;
2. North 82 degrees 25 minutes 18 seconds West a distance of 239.68 feet to a point, thence;
3. North 75 degrees 35 minutes 09 seconds West a distance of 100.87 feet to a point, thence;
4. North 14 degrees 24 minutes 51 seconds East a distance of 9.47 feet to a point, thence;
5. South 82 degrees 24 minutes 03 seconds East a distance of 348.21 feet to the True Point and Place of Beginning.

Containing 6,748 square feet or 0.15 acres more or less.

The coordinates and bearings hereinabove mentioned in the description refer to the rectangular system of coordinates established by the Topographical Bureau of the Borough of Queens, City of New York, grid North being 28 degrees 59 minutes 13.5 seconds east of true north.





GRAPHIC SCALE

100 0 50 100 200 400

(IN FEET)
1 inch = 100 ft.

Sheet of ##

THE PORT AUTHORITY OF NY&NJ

IMPORTANT NOTE :
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No.	Date	Revision	Approved

ENGINEERING DEPARTMENT

JOHN F. KENNEDY INTERNATIONAL AIRPORT

CENTRAL SURVEY GROUP

Title

JFK/CITY
PARCEL TRANSFERS

CITY TO PANY&NJ

PARCEL 1 – FAN
PARCEL 2 – TURNING LANE

PROPERTY TRANSFERS

This drawing subject to conditions in contract. All inventions, ideas, designs and methods herein are reserved to Port Authority and may not be used without its written consent.

STANTEC CONSULTING SERVICES

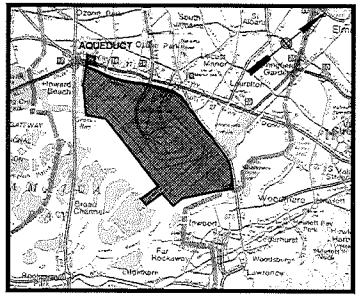
Surveyed by Drawn by Checked by

Date January, 2013 Scale 1"=100'

Contract Number

Survey Number # 2011-387

Drawing Number



KEY MAP
NOT TO SCALE

Parcel Description

All that certain plot, piece or parcel of land, situate in the Borough and County of Queens, City and State of New York, bounded and described as follows:

Commencing at a point on the southerly side of International Airport Center Boulevard formerly known as Rockaway Boulevard, distant easterly 5526.52 feet along said southerly side of International Airport Center Boulevard from where it intersects with the easterly side of Boundary Road, said Point of Commencement having the coordinates of South 51210.01 East 76813.66;

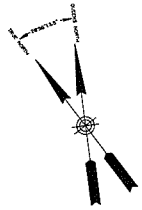
Running thence southwesterly South 31 degrees 39 minutes 01 seconds West a distance of 23.30 feet to the True Point and Place of Beginning, said Point of Beginning having the coordinates of South 51229.85 East 76801.43;

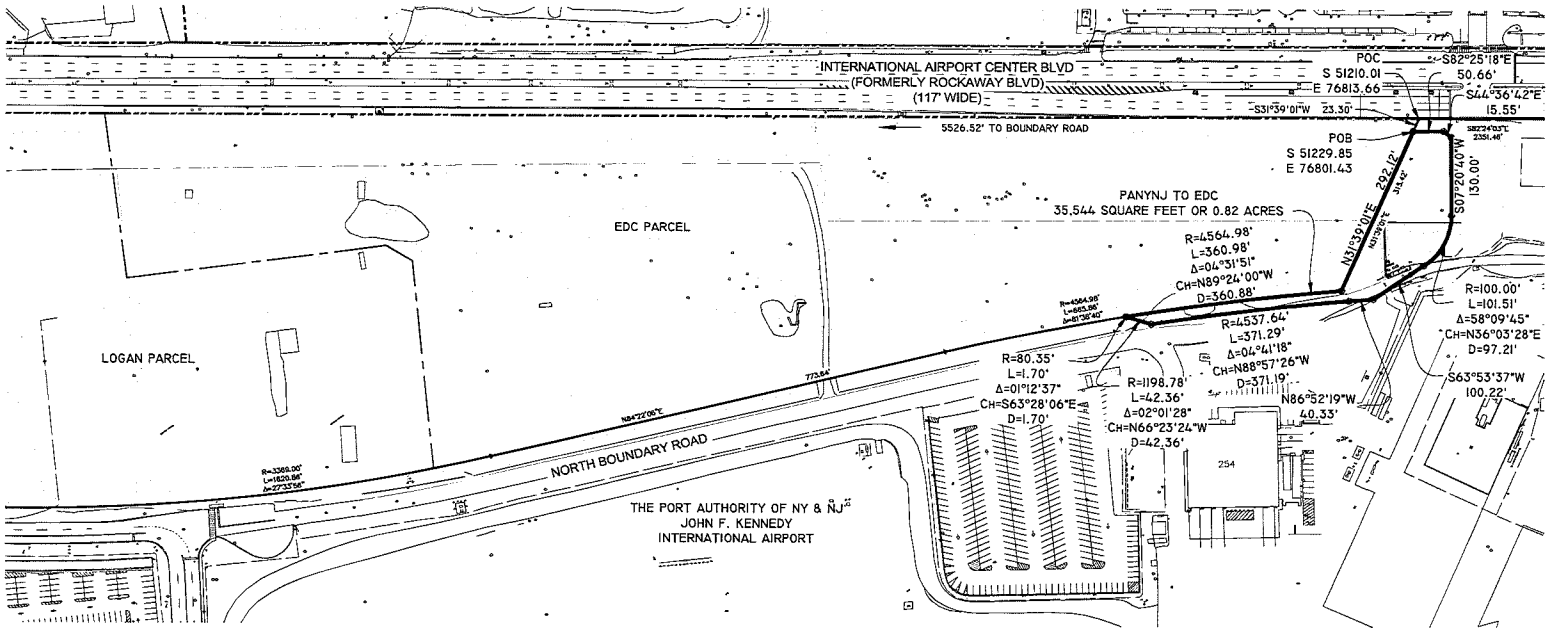
Running thence, the following 10 courses and distances through the lands Now or Formerly of the Port Authority of New York and New Jersey;

1. South 82 degrees 25 minutes 18 seconds East, a distance of 50.66 feet to a point, thence;
2. South 44 degrees 36 minutes 42 seconds East, a distance of 15.55 feet to a point, thence;
3. South 07 degrees 20 minutes 40 seconds West, a distance of 130.00 feet to a point of curvature, thence;
4. Along an arc curving to the right having a radius of 100.00 feet an arc length of 101.51 feet and a central angle of 58 degrees 09 minutes 45 seconds to a point of tangent, thence;
5. South 63 degrees 53 minutes 37 seconds West, a distance of 100.22 feet to a point, thence;
6. North 86 degrees 52 minutes 19 seconds West, a distance of 40.33 feet to a point of curvature, thence;
7. Along an arc curving to the left having a radius of 4537.64 feet an arc length of 371.29 feet and a central angle of 04 degrees 41 minutes 18 seconds to a non-tangent point of curvature, thence;
8. Along an arc curving to the left having a radius of 1198.78 feet an arc length of 42.36 feet and a central angle of 02 degrees 01 minute 28 seconds to a tangent point of curvature, thence;
9. Along an arc curving to the right having a radius of 80.35 feet an arc length of 1.70 feet and a central angle of 01 degree 12 minutes 37 seconds to a non-tangent point of curvature, thence;
10. Along an arc curving to the right having a radius of 4564.98 feet an arc length of 360.98 feet and a central angle of 04 degrees 31 minutes 51 seconds to a point of non-tangent, thence;
11. North 31 degrees 39 minutes 01 second East, a distance of 292.12 feet to the True Point and Place of Beginning.

Containing 35,544 square feet or 0.82 acres more or less.

The coordinates and bearings hereinabove mentioned in the description refer to the rectangular system of coordinates established by the Topographical Bureau of the Borough of Queens, City of New York, grid North being 28 degrees 59 minutes 13.5 seconds east of true north.





GRAPHIC SCALE

100 0 50 100 200 400

(IN FEET)
1 inch = 100 ft.

Sheet of ##

THE PORT AUTHORITY OF NY&NJ

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No.	Date	Revision	Approved

ENGINEERING DEPARTMENT

JOHN F. KENNEDY INTERNATIONAL AIRPORT

CENTRAL SURVEY GROUP

Title
JFK/CITY
PARCEL TRANSFERS

PANY&NJ TO CITY

EAST OF FAN

PROPERTY TRANSFERS

This drawing subject to conditions in contract. All inventions, ideas, designs and methods herein are reserved to Port Authority and may not be used without its written consent.

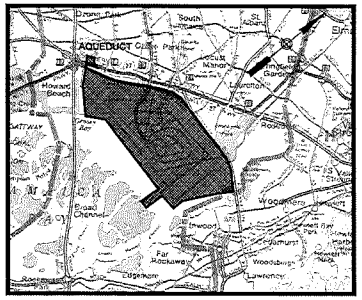
STANTEC CONSULTING SERVICES
Surveyed by Drawn by Checked by

Date January, 2013 Scale 1"=100'

Contract Number

Survey Number # 2011-387

Drawing Number



KEY MAP
NOT TO SCALE

Impound Lot Parcel 1

All that certain plot, piece or parcel of land, situate in the Borough and County of Queens, City and State of New York, bounded and described as follows:

Commencing at a point on the southerly side of Rockaway Boulevard, where it intersects with the easterly side of Farmers Boulevard (width varies), said Point of Commencement having the coordinates of South 50580.33 East 71588.09;

Running thence the following four (4) courses and distances;

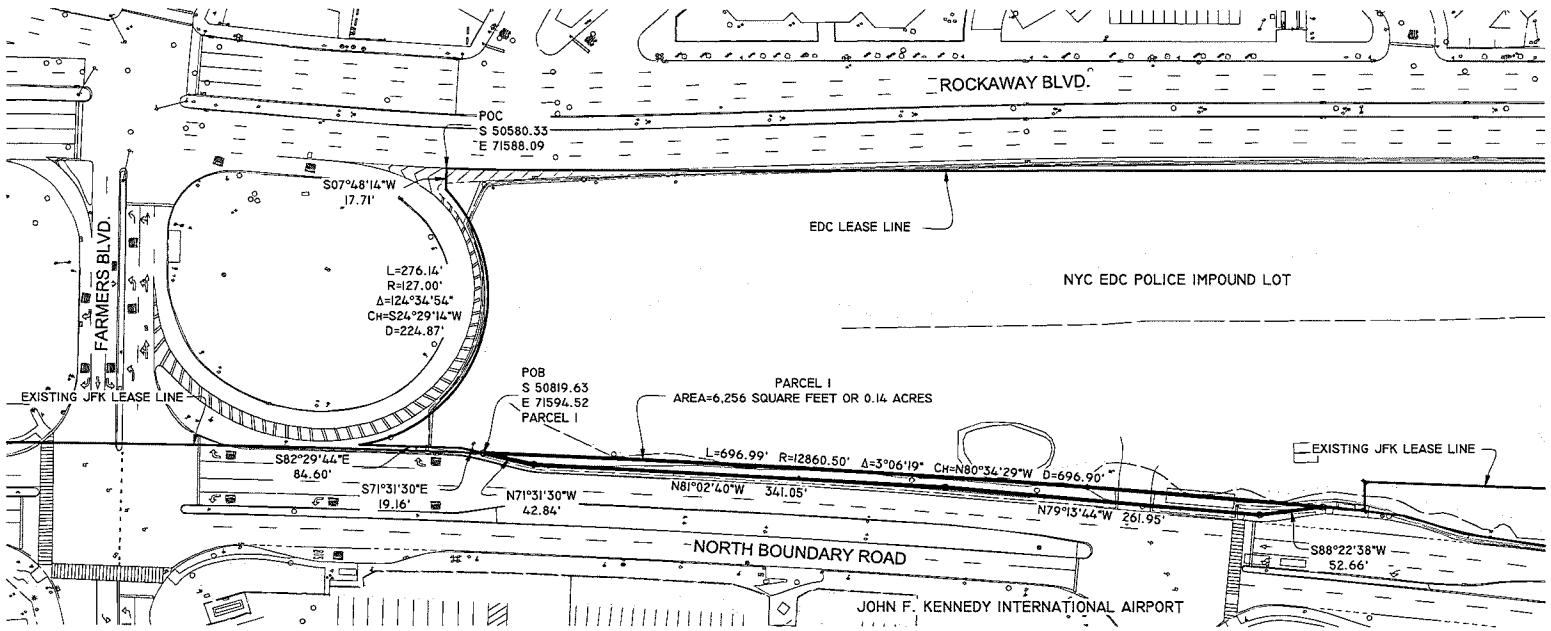
1. South 07 degrees 48 minutes 13 seconds West a distance of 17.71 feet to a non-tangent point of curvature;
2. Thence along an arc curving to the right having a radius of 127.00 feet an arc length of 276.14 feet and a central angle of 124 degrees 34 minutes 54 seconds to a point of non-tangent, thence;
3. Thence South 82 degrees 29 minutes 44 seconds East a distance of 84.60 feet to a point;
4. South 71 degrees 31 minutes 30 seconds East a distance of 19.16 feet to a non-tangent point of curvature and the True Point and Place of Beginning, said Point of Beginning having the coordinates of South 50819.63 East 71594.52;

Running thence the following five (5) courses and distances;

1. Along an arc curving to the right having a radius of 12860.50 feet an arc length of 696.99 feet and a central angle of 03 degrees 06 minutes 19 seconds to a point of non-tangent;
2. South 88 degrees 22 minutes 38 seconds West a distance of 52.66 feet to a point;
3. North 79 degrees 13 minutes 44 seconds West a distance of 261.95 feet to a point;
4. North 81 degrees 02 minutes 40 seconds West a distance of 341.05 feet to a point;
5. North 71 degrees 31 minutes 30 seconds West a distance of 42.84 feet to the True Point and Place of Beginning.

Containing 6,256 square feet or 0.14 acres more or less.

The coordinates and bearings hereinabove mentioned in the description refer to the rectangular system of coordinates established by the Topographical Bureau of the Borough of Queens, City of New York, grid North being 28 degrees 59 minutes 13.5 seconds east of true north.



GRAPHIC SCALE

50 0 25 50 100 200

(IN FEET)
1 inch = 50 ft.

Sheet of ##

THE PORT AUTHORITY OF NY & NJ

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No.	Date	Revision	Approved

ENGINEERING DEPARTMENT

JOHN F. KENNEDY INTERNATIONAL AIRPORT

CENTRAL SURVEY GROUP

Title
JFK/CITY
PARCEL TRANSFERS
NYC POLICE IMPOUND LOT
PARCEL 1

PROPERTY TRANSFERS

This drawing subject to conditions in contract. All inventions, ideas, designs and methods herein are reserved to Port Authority and may not be used without its written consent.

STANTEC CONSULTING SERVICES
Surveyed by Drawn by Checked by
Date January, 2013 Scale 1"=50'
Contract Number
Survey Number # 2011-387
Drawing Number

EXHIBIT B

FAN PARCEL

All that certain plot, piece or parcel of land, situate in the Borough and County of Queens, City and State of New York, bounded and described as follows:

Beginning at a point on the southerly side of International Airport Center Boulevard formerly known as Rockaway Boulevard, distant easterly 2,182.00 feet along said southerly side of International Airport Center Boulevard from where it intersects with the easterly side of Boundary Road, said Point of Beginning having the coordinates of South 51133.14 East 76237.51;

Running thence the following fourteen (14) courses and distances;

1. South 10 degrees 01 minute 51 seconds West, a distance of 70.61 feet to a non-tangent point of curvature, thence;
2. Along an arc curving to the right having a radius of 135.00 feet, an arc length of 62.74 feet, a central angle of 26 degrees 37 minutes 42 seconds, a chord bearing of South 09 degrees 50 minutes 03 seconds East, and a chord distance of 62.18 feet to a point of non-tangent, thence;
3. South 03 degrees 31 minutes 07 seconds West, a distance of 110.19 feet to a non-tangent point of curvature, thence;
4. Along an arc curving to the left having a radius of 90.72 feet, an arc length of 59.70 feet, a central angle of 37 degrees 42 minutes 03 seconds, a chord bearing of South 15 degrees 45 minutes 11 seconds East, and a chord distance of 58.63 feet to a point of non-tangent, thence;
5. South 34 degrees 40 minutes 35 seconds East, a distance of 22.71 feet to a non-tangent point of curvature, thence;
6. Along an arc curving to the left having a radius of 80.35 feet an arc length of 39.44 feet and a central angle of 28 degrees 07 minutes 17 seconds, a chord bearing of South 48 degrees 48 minutes 09 seconds East, and a chord distance of 39.04 feet to a non-tangent point of curvature, thence;
7. Along an arc curving to the left having a radius of 4564.98 feet an arc length of 304.88 feet and a central angle of 03 degrees 49 minutes 36 seconds, a chord bearing of South 86 degrees 25 minutes 17 seconds West, and a chord distance of 304.82 feet to a point of non-tangent, thence;
8. South 84 degrees 22 minutes 06 seconds West, a distance of 773.64 feet to a non-tangent point of curvature, thence;
9. Along an arc curving to the right having a radius of 3369.00 feet an arc length of 96.69 feet and a central angle of 01 degree 38 minutes 40 seconds, a chord bearing of South 85 degrees 11 minutes 26 seconds West, and a chord distance of 96.69 feet to a point of non-tangent, thence;
10. North 01 degrees 39 minutes 00 seconds East, a distance of 346.72 feet to a point, thence;
11. North 52 degrees 35 minutes 18 seconds West, a distance of 50.83 feet to a point, thence;
12. North 89 degrees 50 minutes 24 seconds West, a distance of 433.00 feet to a point, thence;
13. North 00 degrees 03 minutes 57 seconds West, a distance of 277.36 feet to a point, thence;
14. South 82 degrees 24 minutes 03 seconds East, a distance of 1598.46 feet to the True Point and Place of Beginning.

Containing 635,155 square feet or 14.58 acres more or less.

The coordinates and bearings hereinabove mentioned in the description refer to the rectangular system of coordinates established by the Topographical Bureau of the Borough of Queens, City of New York, grid North being 28 degrees 59 minutes 13.5 seconds east of true north.

EXHIBIT D

EAST OF FAN PARCEL

All that certain plot, piece or parcel of land, situate in the Borough and County of Queens, City and State of New York, bounded and described as follows:

Commencing at a point on the southerly side of International Airport Center Boulevard formerly known as Rockaway Boulevard, distant easterly 5526.52 feet along said southerly side of International Airport Center Boulevard from where it intersects with the easterly side of Boundary Road, said Point of Commencement having the coordinates of South 51210.01 East 76813.66;

Running thence southwesterly South 31 degrees 39 minutes 01 seconds West a distance of 23.30 feet to the True Point and Place of Beginning, said Point of Beginning having the coordinates of South 51229.85 East 76801.43;

Running thence, the following 10 courses and distances through the lands Now or Formerly of the Port Authority of New York and New Jersey;

1. South 82 degrees 25 minutes 18 seconds East, a distance of 50.66 feet to a point, thence;
2. South 44 degrees 36 minutes 42 seconds East, a distance of 15.55 feet to a point, thence;
3. South 07 degrees 20 minutes 40 seconds West, a distance of 130.00 feet to a point of curvature, thence;
4. Along an arc curving to the right having a radius of 100.00 feet an arc length of 101.51 feet and a central angle of 58 degrees 09 minutes 45 seconds to a point of tangent, thence;
5. South 63 degrees 53 minutes 37 seconds West, a distance of 100.22 feet to a point, thence;
6. North 86 degrees 52 minutes 19 seconds West, a distance of 40.33 feet to a point of curvature, thence;
7. Along an arc curving to the left having a radius of 4537.64 feet an arc length of 371.29 feet and a central angle of 04 degrees 41 minutes 18 seconds to a non-tangent point of curvature, thence;
8. Along an arc curving to the left having a radius of 1198.78 feet an arc length of 42.36 feet and a central angle of 02 degrees 01 minute 28 seconds to a tangent point of curvature, thence;
9. Along an arc curving to the right having a radius of 80.35 feet an arc length of 1.70 feet and a central angle of 01 degree 12 minutes 37 seconds to a non-tangent point of curvature, thence;
10. Along an arc curving to the right having a radius of 4564.98 feet an arc length of 360.98 feet and a central angle of 04 degrees 31 minutes 51 seconds to a point of non-tangent, thence;
11. North 31 degrees 39 minutes 01 second East, a distance of 292.12 feet to the True Point and Place of Beginning.

Containing 35,544 square feet or 0.82 acres more or less.

The coordinates and bearings hereinabove mentioned in the description refer to the rectangular system of coordinates established by the Topographical Bureau of the Borough of Queens, City of New York, grid North being 28 degrees 59 minutes 13.5 seconds east of true north.

EXHIBIT E

IMPOUND LOT PIECE

Impound Lot Parcel 1

All that certain plot, piece or parcel of land, situate in the Borough and County of Queens, City and State of New York, bounded and described as follows:

Commencing at a point on the southerly side of Rockaway Boulevard, where it intersects with the easterly side of Farmers Boulevard (width varies), said Point of Commencement having the coordinates of South 50580.33 East 71588.09;

Running thence the following four (4) courses and distances;

1. South 07 degrees 48 minutes 13 seconds West a distance of 17.71 feet to a non-tangent point of curvature;
2. Thence along an arc curving to the right having a radius of 127.00 feet an arc length of 276.14 feet and a central angle of 124 degrees 34 minutes 54 seconds to a point of non-tangent, thence;
3. Thence South 82 degrees 29 minutes 44 seconds East a distance of 84.60 feet to a point;
4. South 71 degrees 31 minutes 30 seconds East a distance of 19.16 feet to a non-tangent point of curvature and the True Point and Place of Beginning, said Point of Beginning having the coordinates of South 50819.63 East 71594.52;

Running thence the following five (5) courses and distances;

1. Along an arc curving to the right having a radius of 12860.50 feet an arc length of 696.99 feet and a central angle of 03 degrees 06 minutes 19 seconds to a point of non-tangent,
2. South 88 degrees 22 minutes 38 seconds West a distance of 52.66 feet to a point;
3. North 79 degrees 13 minutes 44 seconds West a distance of 261.95 feet to a point;
4. North 81 degrees 02 minutes 40 seconds West a distance of 341.05 feet to a point;
5. North 71 degrees 31 minutes 30 seconds West a distance of 42.84 feet to the True Point and Place of Beginning.

Containing 6,256 square feet or 0.14 acres more or less.

The coordinates and bearings hereinabove mentioned in the description refer to the rectangular system of coordinates established by the Topographical Bureau of the Borough of Queens, City of New York, grid North being 28 degrees 59 minutes 13.5 seconds east of true north.

Impound Lot Parcel 2

All that certain plot, piece or parcel of land, situate in the Borough and County of Queens, City and State of New York, bounded and described as follows:

Commencing at a point on the southerly side of Rockaway Boulevard, where it intersects with the easterly side of Farmers Boulevard (width varies), said Point of Commencement having the coordinates of South 50580.33 East 71588.09;

Running thence the following five (5) courses and distances;

1. South 07 degrees 48 minutes 13 seconds West a distance of 17.71 feet to a non-tangent point of curvature;
2. Thence along an arc curving to the right having a radius of 127.00 feet an arc length of 276.14 feet and a central angle of 124 degrees 34 minutes 54 seconds to a point of non-tangent, thence;
3. Thence South 82 degrees 29 minutes 44 seconds East a distance of 84.60 feet to a point;
4. South 71 degrees 31 minutes 30 seconds East a distance of 19.16 feet to a non-tangent point of curvature;
5. Thence along an arc curving to the right having a radius of 12860.50 feet an arc length of 723.52 feet and a central angle of 03 degrees 13 minutes 24 seconds to a point of non-tangent, And the True Point and Place of Beginning, said Point of Beginning having the coordinates of South 50938.84 East 72308.06;

Running thence the following nine (9) courses and distances;

1. South 78 degrees 53 minutes 09 seconds East a distance of 8.04 feet to a point;
2. North 05 degrees 47 minutes 21 seconds East a distance of 23.88 feet to a point;
3. South 82 degrees 12 minutes 20 seconds East a distance of 482.52 feet to a point of curvature;
4. Thence along an arc curving to the left having a radius of 2631.00 feet an arc length of 535.67 feet and a central angle of 11 degrees 39 minutes 55 seconds to a non-tangent point of curvature;
5. Thence along an arc curving to the right having a radius of 511.00 feet an arc length of 146.13 feet and a central angle of 16 degrees 23 minutes 03 seconds to a point of curvature;
6. Thence along an arc curving to the right having a radius of 1027.00 feet an arc length of 454.69 feet and a central angle of 25 degrees 22 minutes 01 seconds to a point of tangent;
7. Thence North 76 degrees 02 minutes 32 seconds West a distance of 359.81 feet to a point;
8. Thence North 67 degrees 11 minutes 48 seconds West a distance of 49.93 feet to a point;
9. Thence North 77 degrees 09 minutes 52 seconds West a distance of 41.71 feet to the True Point and Place of Beginning.

Containing 60,053 square feet or 1.38 acres more or less.

The coordinates and bearings hereinabove mentioned in the description refer to the rectangular system of coordinates established by the Topographical Bureau of the Borough of Queens, City of New York, grid North being 28 degrees 59 minutes 13.5 seconds east of true north.

EXHIBIT F

DEVELOPMENT PARCEL

All that certain plot, piece or parcel of land, situate in the Borough and County of Queens, City and State of New York, bounded and described as follows:

Commencing at a point on the southerly side of International Airport Center Boulevard formerly known as Rockaway Boulevard, distant easterly 5526.52 feet along said southerly side of International Airport Center Boulevard from where it intersects with the easterly side of Boundary Road, said Point of Commencement having the coordinates of South 51210.01 East 76813.66;

Running thence westerly North 82 degrees 24 minutes 03 seconds West a distance of 348.21 feet to the True Point and Place of Beginning, said Point of Beginning having the coordinates of South 51163.96 East 76468.51;

Running thence the following seventeen (17) courses and distances;

1. South 14 degrees 24 minutes 51 seconds West a distance of 9.47 feet to a point, thence;
2. South 75 degrees 35 minutes 09 seconds East a distance of 100.87 feet to a point, thence;
3. South 82 degrees 25 minutes 18 seconds East a distance of 290.34 feet to a point, thence;
4. South 44 degrees 36 minutes 42 seconds East a distance of 15.55 feet to a point, thence;
5. South 07 degrees 20 minutes 40 seconds West a distance of 130.00 feet to a point of curvature, thence;
6. Along an arc curving to the right having a radius of 100.00 feet a distance of 101.51 feet and a central angle of 58 degrees 09 minutes 45 seconds to a point of tangent, thence;
7. South 63 degrees 53 minutes 37 seconds West, a distance of 100.22 feet to a point, thence;
8. North 86 degrees 52 minutes 19 seconds West, a distance of 40.33 feet to a point of curvature, thence;
9. Along an arc curving to the left having a radius of 4535.44 feet an arc length of 330.97 feet and a central angle of 04 degrees 10 minutes 52 seconds to a non-tangent point of curvature, thence;
10. Along an arc curving to the left having a radius of 1198.78 feet an arc length of 42.36 feet and a central angle of 02 degrees 01 minute 28 seconds to a tangent point of curvature, thence;
11. Along an arc curving to the right having a radius of 80.35 feet an arc length of 41.13 feet and a central angle of 29 degrees 19 minutes 53 seconds to a point of tangent, thence;
12. North 34 degrees 40 minutes 35 seconds West a distance of 22.71 feet to a point of curvature, thence;
13. Along an arc curving to the right having a radius of 90.72 feet an arc length of 59.70 feet and a central angle of 37 degrees 42 minutes 03 seconds to a point of tangent, thence;
14. North 03 degrees 31 minutes 07 seconds East a distance of 110.19 feet to a point of curvature, thence;
15. Along an arc curving to the left having a radius of 135.00 feet an arc length 62.74 feet and a central angle of 26 degrees 37 minutes 42 seconds to a point of non-tangent, thence;
16. North 10 degrees 01 minute 51 seconds East a distance of 70.61 feet to a point, thence;
17. South 82 degrees 24 minutes 03 seconds East a distance of 233.05 feet to the True Point and Place of Beginning.

Containing 182,072 square feet or 4.18 acres more or less.

The coordinates and bearings hereinabove mentioned in the description refer to the rectangular system of coordinates established by the Topographical Bureau of the Borough of Queens, City of New York, grid North being 28 degrees 59 minutes 13.5 seconds east of true north.

Agency

New York State Department of Transportation

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From: Francis, Ian (DOT)
To: Al Meyer
Cc: Madu, Uchenna (DOT); Calderon, Luis (DOT); Libove, Fred (DOT); Demetropoulos, Steven; Lynn LaMunyon; AAllen@maserconsulting.com
Subject: RE: PANYNJ Rockaway Boulevard Access Project: 100% Design Submission
Date: Friday, December 28, 2012 10:16:05 AM
Attachments: image001.png
image002.png

Hi Al:

The following message was received from the region Traffic and Safety Unit:

TS&M has reviewed the Port Authority's responses to our comments and the revised plans.

All of our comments and concerns have been addressed.

Ian

From: Al Meyer [mailto:ameyer@samschwartz.com]
Sent: Wednesday, December 19, 2012 4:11 PM
To: Francis, Ian (DOT)
Cc: Madu, Uchenna (DOT); Calderon, Luis (DOT); Libove, Fred (DOT); Demetropoulos, Steven; Lynn LaMunyon; AAllen@maserconsulting.com
Subject: RE: PANYNJ Rockaway Boulevard Access Project: 100% Design Submission

Hello Ian,

As I mentioned to you Monday, I am following up on the December 3rd submission of the 100% design package for the Rockaway Boulevard Access project. Please let me know if you will be providing comments by December 21.

Thanks very much.

Al Meyer

From: Al Meyer
Sent: Thursday, November 29, 2012 12:05 PM
To: 'Francis, Ian (DOT)'
Cc: 'Madu, Uchenna (DOT)'; 'Calderon, Luis (DOT)'; 'Libove, Fred (DOT)'; 'Demetropoulos, Steven'; 'Lynn LaMunyon'; AAllen@maserconsulting.com
Subject: PANYNJ Rockaway Boulevard Access Project: 100% Design Submission

Ian,

Thank you for your assistance in the 90% review of the above project.

The Port Authority will submit the 100% design drawings to NYCDOT, NYSDOT and NYCDEP on Monday, December 3. We respectfully request comments on the 100% design by December 21. To assist in the review, all of the 90% design submission comments from NYSDOT will be addressed in a separate package that will contain a comment and response table accompanied by any design drawing(s) that was revised to reflect those comments. Custom packages will be prepared for each NYSDOT reviewer who commented on the 90% design. Each package will also contain a CD of the full 100% design set. We plan to provide these packages in hard copy as well as electronic versions.

Please let me know if you require a full or half-size set of drawings for your review or records and if you have any questions regarding this submission.

Thanks,

Al Meyer

Alfred G. Meyer, AICP
Senior Vice President
Sam Schwartz Engineering, PLLC
744 Broad Street, Suite 2090
Newark, NJ 07102
T 973.639.9629 (Ext 211)
F 973.639.9191
C 917.678.7117

www.samschwartz.com

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New York City Department of Transportation

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Department of Transportation

JANETTE SADIK-KHAN, Commissioner

MEMORANDUM

TO: Alfred Meyer, Senior VP, Sam Schwartz Engineering

FROM: Dalila Hall, Queens Deputy Borough Commissioner

DATE: January 25, 2013

RE: Rockaway Blvd. 100% Design Review

NYCDOT has completed its 100% design review and the project design is approved -- subject to those comments being incorporated in the construction documents. All relevant NYCDOT units have submitted approvals for both the 90% and 100% set of plans.

We look forward to working with PANYNJ and your company as this project moves into the next phase. Should there be any questions, please contact me at (212) 839-2510.

NYC Department of Transportation
Office of the Queens Borough Commissioner
120-55 Queens Boulevard – Rm 285, Kew Gardens, NY 11424
T: 212.839.2510 F: 212.839.2518
www.nyc.gov/dot

Agency

New York City Department of Environmental Protection

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Environmental Protection

Carter H. Strickland, Jr.
Commissioner

James J. Roberts, P.E.
Deputy Commissioner
Bureau of Water &
Sewer Operations
jroberts@dep.nyc.gov

59-17 Junction Boulevard
Flushing, NY 11373

June 11, 2013

11000634G

Adam Allen, P.E.,TSOS
Maser Consulting P.A
American Metro Center
100 American Metro Boulevard, Suite 152
Hamilton, NJ 08619

RE: PANYNJ Rockaway Boulevard Access: John F. Kennedy International Airport. Borough of Queens.

Dear Mr. Allen:

This is in response to your transmittal of plans (dated April 17, 2013) along with a letter dated May 23, 2013 for the above referenced project. The proposed catch basins work is acceptable as shown on the referenced plans. This office has no further comments.

Please contact Ms. Kori Smith, at (718)595-5213, at this office, to schedule a pre-construction meeting for catch basins work at least fifteen (15) days before commencing construction.

Very truly yours,

Paul Faublas.

Paul Faublas, P.E., Chief
Division of Review & Construction
Compliance

C: James Garin, P.E., Director of Engineering, BWSO
Paul Faublas, P.E., Chief, Division of Review & Construction
Irina Veytsman, P.E., Chief, Plan Review Section
John Weiburg, P.E., LEED Green Associate EIC, Plan Review Section
Leviyev/Noaman, Construction Inspection, Plan Review Section
Mohammad Rezaur Rahman, Plan Review Section
File; MRR/mrr

RECEIVED
JUN 24 2013
MASER CONSULTING

Agency

New York Department of State

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STATE OF NEW YORK
DEPARTMENT OF STATE
ONE COMMERCE PLAZA
99 WASHINGTON AVENUE
ALBANY, NY 12231-0001

ANDREW M. CUOMO
GOVERNOR

CESAR A. PERALES
SECRETARY OF STATE

July 6, 2012

Marc Helman, Supervisor
Permits & Governmental Approvals
The Port Authority of NY & NJ
Two Gateway Center
Newark, New Jersey 07102

Re: F-2012-0513(DA)
The Port Authority of NY & NJ/FAA
Rehabilitation of Runway 4L/R22 with concrete in place of asphalt, widening the runway from 150' to 200', adding 728' of runway on the north end. Construction of new high-speed taxiway exists to the central terminal area and new taxiway access points at runway ends
Negative Determination

Dear Mr. Helman:

On May 18, 2012, the Department of State received the FAA's negative determination and supporting information for the above referenced activity. Based on the information provided, the Department concurs with your determination that the rehabilitation of Runway 4L/R22 with concrete in place of asphalt, widening the runway from 150' to 200', adding 728' of runway on the north end. Construction of new high-speed taxiway exists to the central terminal area and new taxiway access points at runway ends will not result in any reasonably foreseeable effects to land and water uses or natural resources of the coastal area. Further review of this activity by the Department of State is not necessary.

Thank you for providing this information to the Department of State. If you have any questions regarding this matter, please contact us at (518) 474-6000 and refer to our file # F-2012-0513(DA).

Sincerely,

Jeffrey Zappieri
Supervisor, Consistency Review Unit
Division of Coastal Resources

JZ/dc

THE PORT AUTHORITY OF NY & NJ

Engineering Department

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

May 7, 2012

Jeffrey Zappieri
Supervisor, Consistency Review Unit
New York State Department of State
Division of Coastal Resources
1 Commerce Plaza, Suite 1010
Albany, NY 12231-0001

SUBJECT: JOHN F. KENNEDY INTERNATIONAL AIRPORT: RUNWAY 4L/22R REHABILITATION AND ASSOCIATED IMPROVEMENTS

Dear Mr. Zappieri:

The Port Authority of NY & NJ (Port Authority) is proposing to rehabilitate and make improvements to Runway 4L-22R and associated facilities at the John F. Kennedy International Airport (JFK), adjacent to Jamaica Bay, at Jamaica, Borough of Queens, Queens County, NY.

The purpose of the proposed work is to rehabilitate and widen Runway 4L/22R, to construct a Runway Safety Area (RSA) that will comply with Federal Aviation Administration (FAA) RSA design standards, and to implement delay reduction initiatives at JFK. The Proposed Action includes the following three major categories of improvements to Runway 4L/22R: (1) Runway Improvements, (2) Taxiway Improvement, and (3) Supporting Element Improvements.

Runway Improvements include the rehabilitation of Runway 4L/22R with concrete in place of asphalt, widening the runway from 150 feet to 200 feet, adding 728 feet of runway on the north end to accommodate Design Group VI aircraft without operational restrictions, and relocating landing thresholds. Taxiway Improvements include construction of new high-speed taxiway exits to the central terminal area and new taxiway access points at runway ends. Supporting Element Improvements include relocation of runway localizer antennas and glide slope antennas due to threshold relocations and widening of the runway. Localizer and glide slope signals establish and maintain an aircraft's horizontal position and descent rate, respectively, until visual contact confirms the runway alignment and location. In addition, the airport patrol road will be relocated to accommodate the RSA at the north end of the runway.

Enclosed are project drawings depicting the work locations, photos and information concerning localizer and glide slope antennas, a completed Federal Consistency Assessment Form (FCAF) and policy evaluation, and a completed New York City Waterfront Revitalization Program Consistency Assessment Form (NYCWRPCAF) and policy evaluation to assist in your review of the proposed project.

Two Gateway Center
Newark, NJ 07102

The proposed work involves federal funding and a modification of the Airport Layout Plan that must be approved by the Federal Aviation Administration (FAA). This triggers the need for a consistency concurrence from the New York State Department of State (NYSDOS) pursuant to the state's Coastal Zone Management (CZM) policies. In addition, a consistency concurrence from the New York City Department of City Planning (NYCDCP) pursuant to the New York City Waterfront Revitalization Program (NYCWRP) policies is also required.

The Port Authority has reviewed the subject project in light of the NYSDOS CZM and the NYCWRP coastal zone policies. The Port Authority has determined that there would be no foreseeable adverse effects on coastal resources from this project.

The project site is located in an area of the airport that is inland of the shoreline and is separated from the shoreline runways, roads, and taxiways. Therefore, the work will not require a permit from the U.S. Army Corps of Engineers. However, the work associated with the relocation of patrol road north of Runway 4L-22R and construction of the RSA will intrude into a tidal wetland adjacent area. Therefore, a Tidal Wetlands Permit from the New York State Department of Conservation (NYSDEC) will be required.

In addition, a Stormwater Pollution Prevention Plan (SWPPP) prepared and the Notice of Intent (NOI) will be submitted to NYSDEC in accordance with requirements set forth in State Pollutant Discharge Elimination System (SPDES) Permit No. NY 000 8109 issued to the Port Authority of New York and New Jersey.

Thank you for your assistance in this matter. If you have any questions or require additional information, please contact the undersigned by e-mail at mhelman@panynj.gov or by telephone at (973) 565 - 7564.

Very truly yours,

Marc Helman

Marc Helman
Supervisor, Permits and Governmental Approvals
Environmental Engineering Unit

Enclosures:

1) Project Drawings
2) Localizer & Glide Slope Photos/Information
3) FCAF w/ Policy Evaluation
4) NYCWRPCAF w/ Policy Evaluation

cc: Michael Marrella, NYCDCP

THE PORT AUTHORITY OF NY & NJ

Engineering Department

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

May 7, 2012

Michael Marrella
Director, Waterfront and Open Space Division
New York City Department of City Planning
22 Reade Street
New York, NY 10007-1216

SUBJECT: JOHN F. KENNEDY INTERNATIONAL AIRPORT FACILITY UPGRADE: RUNWAY 4L-22R REHABILITATION AND IMPROVEMENTS

Dear Mr. Marrella:

The Port Authority of NY & NJ (Port Authority) is proposing to rehabilitate and make improvements to Runway 4L-22R and associated facilities at the John F. Kennedy International Airport (JFK), adjacent to Jamaica Bay, at Jamaica, Borough of Queens, Queens County, NY.

The purpose of the proposed work is to rehabilitate and widen Runway 4L/22R, to construct a Runway Safety Area (RSA) that will comply with Federal Aviation Administration (FAA) RSA design standards, and to implement delay reduction initiatives at JFK. The Proposed Action includes the following three major categories of improvements to Runway 4L/22R: (1) Runway Improvements, (2) Taxiway Improvement, and (3) Supporting Element Improvements.

Runway Improvements include the rehabilitation of Runway 4L/22R with concrete in place of asphalt, widening the runway from 150 feet to 200 feet, adding 728 feet of runway on the north end to accommodate Design Group VI aircraft without operational restrictions, and relocating landing thresholds. Taxiway Improvements include construction of new high-speed taxiway exits to the central terminal area and new taxiway access points at runway ends. Supporting Element Improvements include relocation of runway localizer antennas and glide slope antennas due to threshold relocations and widening of the runway. Localizer and glide slope signals establish and maintain an aircraft's horizontal position and descent rate, respectively, until visual contact confirms the runway alignment and location. In addition, the airport patrol road will be relocated to accommodate the RSA at the north end of the runway.

Enclosed are project drawings depicting the work locations, photos and information concerning localizer and glide slope antennas, a completed New York City Waterfront Revitalization Program Consistency Assessment Form (NYCWRPCAF) and a completed Federal Consistency Assessment Form (FCAF) and policy evaluation to assist in your review of the proposed project.

Two Gateway Center
Newark, NJ 07102

The proposed work involves federal funding and a modification of the Airport Layout Plan that must be approved by the Federal Aviation Administration (FAA). This triggers the need for a consistency concurrence from the New York State Department of State (NYSDOS) pursuant to the state's Coastal Zone Management (CZM) policies. Of course, obtaining an NYSDOS concurrence is predicated upon obtaining a consistency concurrence from the New York City Department of City Planning (NYCDCP) pursuant to the New York City Waterfront Revitalization Program (NYCWRP) policies.

The Port Authority has reviewed the subject project in light of the NYCWRP coastal zone policies and the NYSDOS CZM policies. The Port Authority has determined that there would be no foreseeable adverse effects on coastal resources from this project.

The project site is located in an area of the airport that is inland of the shoreline and is separated from the shoreline by runways, roads, and taxiways. Therefore, the work will not require a permit from the U.S. Army Corps of Engineers. However, the work associated with the relocation of patrol road north of Runway 4L-22R and construction of the RSA will intrude into a tidal wetland adjacent area. Therefore, a Tidal Wetlands Permit from the New York State Department of Conservation (NYSDEC) will be required.

In addition, a Stormwater Pollution Prevention Plan (SWPPP) prepared and the Notice of Intent (NOI) will be submitted to NYSDEC in accordance with requirements set forth in State Pollutant Discharge Elimination System (SPDES) Permit No. NY 000 8109 issued to the Port Authority of New York and New Jersey.

Thank you for your assistance in this matter. If you have any questions or require any additional information, please contact the undersigned by e-mail at mhelman@panynj.gov or by telephone at (973) 565 - 7564.

Very truly yours,

Marc Helman

Marc Helman
Supervisor, Permits and Governmental Approvals
Environmental Engineering Unit

Enclosures:

1) Project Drawings
2) Localizer & Glide Slope Photos/Information
3) NYCWRPCAF w/ Policy Evaluation
4) FCAF w/ Policy Evaluation

cc: Jeffrey Zappieri, NYSDOS

Appendix B

APPENDIX B
NOISE

This appendix describes the methodology, assumptions, and results of the aircraft noise analysis that was conducted to assess the noise effects that proposed projects to Runway 4L/22R would have on noise exposure in the communities surrounding John F. Kennedy International Airport (the Airport). The runway projects have been proposed by the Airport's sponsor, the Port Authority of New York and New Jersey (the Port Authority). This EA was prepared in accordance with Federal Aviation Administration (FAA) FAA Orders 1050.1E Change 1, *Environmental Impacts: Policies and Procedures* and 5050.4B, *National Environmental Policy Act (NEPA) Implementing Instructions for Airport*.

ALTERNATIVES EVALUATED

The noise exposure levels associated with the No-Build/No-Action Alternative and the Proposed Action Alternative were evaluated at the 2015 and 2020 activity levels. The No-Build/No-Action and Proposed Action scenarios are described in the following paragraphs.

No-Build/No-Action

The No-Build/No-Action scenario would maintain the existing airfield configuration. Specifically, the Runway 4L arrival threshold and Runway 22R departure starting point would remain in their existing location, 728 feet of additional runway pavement would not be constructed, and the runway would not be widened to 200 feet or rehabilitated.

Proposed Action

The Proposed Action includes the following elements that would change the noise exposure at the Airport:

- *Displace the Runway 4L arrival threshold 460 feet to the north to provide 600 feet of required undershoot RSA for Runway 4L to comply with FAA design standards* – This would result in arriving aircraft being higher over areas to the south of the runway.
- *Construct 728 feet of new runway pavement on the north side of Runway 4L/22R to maintain adequate departure length on Runway 22R while providing 1,000 feet of required overrun RSA for Runway 22R to comply with FAA design standards* - The additional runway pavement would result in aircraft, departing to the south on Runway 22R, starting their takeoff roll 728 feet further to the north due to the change in the departure starting point. The existing Runway 22R departure starting point is currently located approximately 1,675 feet south of Rockaway Boulevard. With implementation of the Proposed Action, the Runway 22R departure starting point would be approximately 950 feet south of Rockaway Boulevard. The new departure starting point may result in aircraft turning in the air at slightly different points and at a slightly higher altitude than existing conditions.

NOISE ANALYSIS METHODOLOGY

The noise analysis was performed using the FAA's Integrated Noise Model (INM), Version 7.0d. The INM was developed under the guidance of the FAA and it is the preferred aircraft noise contour software approved by FAA to conduct aircraft noise studies, Part 150 studies and NEPA noise evaluations. The noise contours calculated by the INM for an airport are a function of several factors/elements including: the number of aircraft operations during the period evaluated, the types of aircraft flown, the time of day when they are flown, how frequently each runway is used for arrivals and departures, the routes of flight used to and from the runways, and the operating weight of the aircraft.

The INM produces day-night average sound level (DNL) noise contours. The DNL metric represents the cumulative noise level in an area over a 24-hour period, typically an average day during any given year. The INM computes DNL levels by summing the noise produced by all aircraft events during a 24-hour period and then adding an extra 10 decibel weight to nighttime operations (between 10:00 p.m. and 6:59 a.m.).

In this analysis, the INM was used to produce 65, 70 and 75 DNL contours for the No-Build/No-Action airfield configuration using 2012/2013[1], 2015, and 2020 levels of aviation activity. The year of implementation of the Proposed Action is 2015; therefore DNL contours for the Proposed Action airfield configuration at the 2015 and 2020 (five years after implementation) aviation activity levels were produced for comparison. Additionally, an analysis was conducted to identify potential areas of significant change in aircraft noise exposure. The number of housing units, residential population, and area within these contours was also estimated using 2010 U.S. Census Data.

NOISE COMPATIBILITY EVALUATION

In this analysis, criteria from FAA Order 1050.1E, Change 1, *Environmental Impacts: Policies and Procedures,* was used to assess whether the Proposed Action would result in significant noise impacts to noise sensitive land uses near the Airport. As stated on Page A-61 of Order 1050.1E, Change 1, *a significant noise impact would occur if analysis shows that the proposed action will cause noise sensitive areas to experience an increase in noise of DNL 1.5 dB or more at or above DNL 65 dB noise exposure when compared to the no action alternative for the same timeframe. For example, an increase from 63.5 dB to 65 dB is considered a significant impact.* Therefore, the primary goal in this analysis was to evaluate whether the Proposed Action would cause significant increases in noise exposure over noise sensitive areas northeast and southwest of the Airport relative to the No-Build/No-Action scenario.

[1] The Existing noise exposure contours were based on data from June 1, 2012 through May 31, 2013, as it was the latest data available at the time the noise contours were prepared.

INTEGRATED NOISE MODEL INPUT DATA

The following paragraphs describe the input data that were used to develop the INM models for this study.

Airport Characteristics

The INM uses airport elevation, average annual temperature, and average annual relative humidity in its computation of aircraft noise propagation. According to the FAA's *Airport/Facility Directory*, the Airport is situated at 13 feet above sea level. The average annual temperature recorded at the Airport—53.6° F—was used as input to the INM. This value was obtained from data maintained by the National Climatic Data Center and directly affects the propagation of sound through the air.

Airfield Description

The existing runway system at the Airport features two sets of intersecting parallel runways. Runways 4R/22L and 4L/22R are separated by 3,000 feet while Runways 13L/31R and Runway 13R/31L are separated by 7,000 feet. **Table B-1, *Runway Characteristics***, presents the physical characteristics of Runway 4L/22R for the No-Build/No-Action and Proposed Action scenarios.

As noted previously, the differences in the physical characteristics between the No-Build/No-Action and Proposed Action scenarios involves the relocation of the departure starting point on Runway 22R 728 feet to the north and the location of the Runway 4L arrival threshold.

Table B-1
RUNWAY CHARACTERISTICS
John F. Kennedy International Airport

	NO-BUILD/ NO-ACTION	PROPOSED ACTION	CHANGE
Runway 4L			
Pavement Length	11,351 feet	12,079 feet	+728 feet
Pavement Width	150 feet	200 feet	+50 feet
Takeoff available distance	11,351 feet	11,351 feet	0 feet
Landing available distance	11,351 feet	11,169 feet	-182 feet
Displaced arrival threshold	0 feet	460 feet	460 feet
Runway 22R			
Pavement Length	11,351 feet	12,079 feet	+728 feet
Pavement Width	150 feet	200 feet	+50 feet
Takeoff available distance	11,351 feet	11,219 feet	-132 feet
Landing available distance	8,655 feet	7,795 feet	-860 feet
Displaced arrival threshold	2,696 feet	3,424 feet	+728 feet

Source: PANYNJ, Landrum & Brown 2013.

Aircraft Operations

Annual aircraft operations (arrivals and departures) levels and fleet mix distributions for the 2012/2013 level of aviation activity at the Airport were obtained from the Port Authority's airport noise and operations management system (ANOMS) and the FAA's Air Traffic Activity System (ATADS). This data indicated that approximately 407,864 aircraft landed at or departed from the Airport from June 1, 2012 through May 31, 2013.

The aircraft operations levels and fleet mix distributions for 2015 and 2020 were calculated using operations estimates from the FAA approved *Port Authority's Long Range Forecast for the Port Authority Airports, Moderate Growth Scenario*, April 2012. This forecast reports annual operations levels for the various market segments of activity that use the Airport (e.g. air carrier, cargo, commuter, general aviation, and military) through 2032. The annual activity levels reported in these forecasts were 445,818 operations in 2015 and 487,072 operations in 2020. **Table B-2, *Forecast Activity Comparison – Airport Operations***, shows how these values compare with the *2012 Terminal Area Forecast* (2012 TAF), produced by the FAA. As shown, the Port Authority's operations forecasts are slightly lower than the 2012 TAF, but remain within the FAA required ten percent difference between the 2012 TAF and both future years.

Table B-2
FORECAST ACTIVITY COMPARISON – AIRPORT OPERATIONS
John F. Kennedy International Airport

YEAR	PORT AUTHORITY FORECAST	FAA 2012 TAF	% DIFFERENCE FROM TAF
2015	445,819	447,491	0.38%
2020	487,072	507,889	4.27%

Source: PANYNJ, FAA, Landrum & Brown, 2013

Because the INM uses average annual day (AAD) activity to produce noise contours, the number of annual operations for 2012/2013, 2015, and 2020 were divided by 365, producing AAD activity levels of approximately 1,117, 1,221, and 1,334 operations, respectively.

The Port Authority's forecast provides information regarding aircraft fleet mixes for future activity levels (i.e., 2015 and 2020), which were incorporated in this analysis. However, several assumptions were made for the noise analysis in the future years.

- The fleet mix distribution for the general aviation activity was kept constant with the distribution used in the Existing (2012/2013) conditions INM model.
- General markets served by air carrier aircraft would be similar in 2015 and 2020 to 2012/2013 conditions.
- General runway and flight track use would be similar in 2015 and 2020 to 2012/2013 conditions.

The resulting aircraft fleet mix forecasts by aircraft type for the 2012/2013, 2015, and 2020 activity levels are summarized in **Table B-3, *Average Annual Day Operations by INM Type – 2012/2013, 2015, & 2020***. The Airbus 350-800 and the Airbus 350-900 are not included in the INM and the FAA has not published a substitution aircraft. Therefore, the following substitutions were approved[2] by the FAA and used in the model:

Aircraft	**INM Substitution Aircraft**
Airbus 350-800	Boeing 777-200
Airbus 350-900	Boeing 777-200

[2] See approval letter provided at the end of this Appendix.

Table B-3
AVERAGE ANNUAL DAY OPERATIONS BY INM TYPE – 2012/2013, 2015, & 2020
John F. Kennedy International Airport

INM Type	Aircraft Type	2012/13	2015	2020
1900D	Beech 1900D	1.5	-	-
737500	Boeing 737-500	1.1	2.4	-
737700	Boeing 737-700	8.4	8.9	11.5
737800	Boeing 737-800	113.3	90.0	114.3
74710Q	Boeing 747-100	-	14.8	16.2
74720B	Boeing 747-200	1.8	2.3	1.5
747400	Boeing 747-400	44.1	29.4	29.7
7478	Boeing 747-800	2.6	2.2	3.0
757PW	Boeing 757-200 (PW engines)	105.2	83.6	54.4
767300	Boeing 767-300	101.9	152.7	162.0
767400	Boeing 767-400	0.2	13.3	17.7
777200	Boeing 777-200	32.6	12.8	11.3
7772LR	Boeing 777-200LR	2.5	5.2	12.2
777300	Boeing 777-300	0.3	0.2	0.3
7773ER	Boeing 777-300ER	33.1	23.8	31.2
7878R	Boeing 787-8 Dreamliner	-	2.4	7.4
A300B4-203	Airbus A300B4-200	1.6	4.2	5.5
A310-304	Airbus A310-304	0.4	1.0	1.3
A319-131	Airbus A319-131	24.6	25.2	33.5
A320-232	Airbus A320-232	245.3	233.1	260.9
A321-232	Airbus A321-232	8.8	55.5	79.4
A330-301	Airbus A330-301	21.0	24.7	32.0
A330-343	Airbus A330-343	28.0	-	-
A340-211	Airbus A340-211	15.5	21.2	16.9
A350	Airbus A350	-	0.9	4.1
A380-841	Airbus A380	-	10.3	14.4
A380-861	Airbus A380	9.3	-	-
BEC58P	Beechcraft Baron 58P	0.8	1.3	1.2
CIT3	Citation III	0.8	0.6	0.6
CLREGJ	Bombardier CRJ200 Regional Jet	67.8	50.4	49.5
CNA208	Cessna 208	0.7	-	-
CNA441	Cessna Conquest II	0.2	0.0	0.0
CNA500	Citation II	1.1	0.4	0.4
CNA750	Citation X	0.8	2.4	2.4
CRJ701	Bombardier CRJ700 Regional Jet	-	29.0	35.1
CRJ900	Bombardier CRJ900 Regional Jet	-	48.0	49.6
CRJ9-ER	Bombardier CRJ900 Regional Jet	66.1	-	-
DC1010	McDonnell Douglas DC-10-10	3.8	4.1	4.3
DC870	McDonnell Douglas DC-8-70	-	0.6	0.5
DHC6	Dash 6	0.8	-	-
DHC830	Dash 8-300	3.0	-	-
EMB135	Embraer Regional Jet E135	-	17.0	14.8
EMB145	Embraer Regional Jet E145	53.9	79.4	77.3
EMB170	Embraer ERJ-170-100	0.4	6.3	10.1
EMB175	Embraer ERJ-170-200	-	21.3	23.4
EMB190	Embraer ERJ-190	84.3	99.1	108.4
FAL20	Falcon Jet 20	0.2	1.3	1.3
GASEPV	Single-engine variable-pitch prop	2.6	2.4	2.4
GIIB	Gulfstream G-IIB	-	0.2	0.2
GIV	Gulfstream G-IV	1.0	0.9	0.9
GV	Gulfstream G-V	0.6	2.0	5.2
LEAR25	Learjet 25	0.4	2.8	2.8
LEAR35	Learjet 35	4.8	2.3	2.3
MD11GE	McDonnell Douglas MD-11	3.7	7.7	10.5
MD83	McDonnell Douglas MD-83	13.3	14.7	3.3
MU3001	Mitsubishi MU-300 Diamond	3.2	7.1	7.1
SD330	Shorts SD-330	0.3	-	-
Total		**1,117.4**	**1,221.4**	**1,334.4**

Source: PANYNJ, Landrum & Brown, 2013.

Day – Night Distribution

The time of day operations (arrivals and departures) occur is also a key component of the INM input. It is important to the computation of the cumulative average noise level because a penalty of ten decibels is assigned to each operation that occurs at night (between 10:00 p.m. and 6:59 a.m.). The day-night split for Existing (2012/2013) Condition was computed using the Port Authority's ANOMS data from June 1, 2012 through May 31, 2013. This split was retained in the 2015 and 2020 input files. On average, approximately 82 percent of operations at the Airport occur during daytime hours (7:00 a.m. to 9:59 p.m.). Day-night splits are presented in the summary of 2012/2013, 2015, and 2020 AAD operations, which are presented in **Table B-4, *Average Annual Day Operations by INM Type, Time of Day, and Stage Length – 2012/2013,*** **Table B-5**, ***Average Annual Day Operations by INM Type, Time of Day, and Stage Length – 2015,*** and **Table B-6**, ***Average Annual Day Operations by INM Type, Time of Day, and Stage Length – 2020,*** respectively.

Flight Profiles

Aircraft noise characteristics vary depending on the takeoff profiles and climb rates of individual aircraft, which are directly affected by the takeoff weight. Because obtaining data on aircraft takeoff weight is difficult, stage length is often used as a surrogate. Stage length refers to the average distance an aircraft travels nonstop. Departure operations in the INM are divided into nine stage lengths that correspond to approximate nonstop flight distances. Each stage length associates the aircraft operations with a takeoff weight that represents a typical passenger load factor and fuel requirement. The climb profile of the aircraft will become less steep as the stage length is increased to reflect the heavy fuel load carried for long-haul travel.

Stage length assumptions for the 2015 and 2020 scenarios were the same as was used in the Existing (2012/2013) Condition. Aircraft types in the 2015 and 2020 fleets that were not represented in the Existing (2012/2013) Condition were assumed to have similar stage length distributions to comparable aircraft from the 2012/2013 fleet mix. For example, Boeing 787 and Airbus A350 aircraft were assumed to have the same stage length distributions as Boeing 777-300 aircraft. Stage length assumptions, which remain constant throughout current and future activity levels, are presented by aircraft type in Tables B-4, B-5, and B-6.

Runway Use

The INM requires input regarding the number of operations (takeoffs and landings) that use each runway end at the Airport. Runway use for the Existing (2012/2013) condition was based on the Port Authority's ANOMS data from June 1, 2012 through May 31, 2013. The resulting distributions were then applied to the 2015 and 2020 aircraft fleet mixes to produce runway use distributions for the 2015 and 2020. The same runway use assumptions were applied to both the No-Build/No-Action and Proposed Action scenarios with one exception. During wet pavement conditions certain heavy jet aircraft (Boeing 747-400, McDonnell Douglas MD-11, and Airbus 340) would not be able to land on Runway 22R due to the available

landing distance being reduced from 8,655 feet to 7,795 feet in the Proposed Action. Therefore, in the Proposed Action those heavy jet aircraft were assumed to land on Runway 22L. A review of hourly weather observation data at the Airport from January 1, 2003 through December 31, 2012, determined wet pavement conditions occur approximately 5.3 percent of the time annually. Therefore, runway use percentages for heavy jet arrivals on Runway 4L/22R were adjusted for the 2015 and 2020 Proposed Action to account for this condition. Due to the limited percent of time Runway 22R is used for heavy jet arrivals this adjustment is not evident in the percentages shown in Table 8 or Table 9.

Tables B-7, *Runway Use by INM Type and Time of Day – 2012/2013*, Table B-8, *Runway Use by INM Type and Time of Day – 2015*, and **Table B-9, *Runway Use by INM Type and Time of Day – 2020*,** summarize the resulting arrival and departure runway use distributions for 2012/2013, 2015, and 2020, respectively.

Generalized Flight Tracks

The INM requires generalized flight tracks that aircraft utilize during their approach to or departure from the Airport. The INM also requires input information regarding the horizontal dispersion of aircraft in space when they use these flight tracks. In this analysis, both the generalized flight tracks and parameters relating to flight track dispersion were developed from the Port Authority's ANOMS to ensure established procedures were adequately modeled. The generalized flight tracks from this model are shown in **Exhibit B-1, Generalized No-Build/No-Action Aircraft Flight Tracks** and **Exhibit B-2, Generalized Proposed Action Aircraft Flight Tracks**. The No-Build/No-Action flight tracks were modified in the Proposed Action to reflect the proposed Runway 4L threshold location and Runway 22R departure starting point. All other flights tracks remained the same between the No-Build/No-Action and Proposed Action scenarios.

As previously discussed relocating the Runway 22R departure starting point 728 feet to the north would result in Runway 22R departing aircraft starting their takeoff roll 728 feet further to the north. The existing Runway 22R departure starting point is currently located approximately 1,675 feet south of Rockaway Boulevard. With implementation of the Proposed Action, the Runway 22R departure starting point would be approximately 950 feet south of Rockaway Boulevard. The new departure starting point may result in aircraft turning in the air at slightly different points and at a slightly higher altitude than existing conditions. The displaced arrival threshold on Runway 4L would result in aircraft to be at a greater altitude over areas to the south 4L than current conditions upon approach to Runway.

Housing and Population Data

Estimates of housing units and population, within each noise contour, was based on data obtained from the New York City Department of City Planning for areas within New York City (Queens County) and the U.S. Census Bureau. For areas within Queens County, MapPLUTO™ parcel data was obtained, which included counts of total residential units per parcel. Total population per parcel was estimated by multiplying the number of housing units by the average household size for the U.S. Census block in which each parcel was located.

For Nassau County, data from the 2010 United States Census—specifically the *Census 2010 Redistricting Data (P.L. 94-171) Summary File, Census of Population and Housing*—was used to estimate the approximate number of housing units and residential population that would experience changes in noise exposure as a result of the Proposed Action. To enhance the accuracy of these estimates for Nassau County, census blocks were reviewed in a geographic information system (GIS) database to ensure they did not include large unpopulated areas (e.g., golf courses, marsh areas, open water, parks) that would affect the population analysis. The housing units and population associated with each block were assumed to be uniformly distributed throughout the census blocks. GIS software was then used to estimate the proportion of each census block encompassed within each contour band. Estimates of the housing units and populations within each contour band were then calculated by multiplying the resulting area proportions by the housing and population estimates associated with each census block.

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Table B-4
AVERAGE ANNUAL DAY OPERATIONS BY INM TYPE, TIME OF DAY, AND STAGE LENGTH – 2012/2013
John F. Kennedy International Airport

		Arrivals		Departures Stage 1		Stage 2		Stage 3		Stage 4		Stage 5		Stage 6		Stage 7		Stage 8		Stage 9		All Operations		
INM Type	**Aircraft Type**	**Day**	**Night**	**Day**	**Night**	**Day**	**Night**	**Day**	**Night**	**Day**	**Night**	**Day**	**Night**	**Day**	**Night**	**Day**	**Night**	**Day**	**Night**	**Day**	**Night**	**Day**	**Night**	**Total**
1900D	Beech 1900D	0.7	0.0	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.5	0.0	1.5
737500	Boeing 737-500	0.5	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.1	1.1
737700	Boeing 737-700	2.5	1.7	0.2	0.0	0.2	0.2	1.0	0.1	2.0	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.1	2.3	8.4
737800	Boeing 737-800	40.2	16.3	2.7	0.3	2.3	2.4	13.6	1.4	27.3	3.0	3.4	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	89.7	23.6	113.3
74710Q	Boeing 747-100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
74720B	Boeing 747-200	0.6	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1	0.6	1.8
747400	Boeing 747-400	16.1	5.9	0.2	0.0	0.1	0.3	0.2	1.7	0.6	0.1	6.2	2.0	1.8	2.3	0.4	0.2	0.7	1.1	2.5	1.6	28.9	15.1	44.1
7478	Boeing 747-800	1.0	0.4	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.4	0.1	0.1	0.1	0.0	0.0	0.0	0.1	0.1	0.1	1.7	0.9	2.6
757PW	Boeing 757-200 (PW engines)	40.3	12.3	0.0	0.0	5.5	0.5	8.7	1.1	25.1	3.2	6.9	1.3	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	86.7	18.5	105.2
767300	Boeing 767-300	44.6	6.7	0.9	0.1	2.7	0.3	3.1	2.1	9.0	2.0	5.8	0.4	12.4	5.0	5.2	1.6	0.0	0.0	0.0	0.0	83.8	18.2	101.9
767400	Boeing 767-400	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.2
777200	Boeing 777-200	13.4	2.9	0.0	0.0	0.2	0.0	0.5	0.2	0.0	0.0	3.7	2.5	3.0	1.1	0.4	1.0	1.5	0.4	1.4	0.5	24.0	8.6	32.6
7772LR	Boeing 777-200LR	1.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.2	0.2	0.1	0.0	0.1	0.1	0.0	0.1	0.0	1.8	0.7	2.5
777300	Boeing 777-300	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.1	0.3
7773ER	Boeing 777-300ER	15.0	1.7	0.0	0.0	0.0	0.0	0.0	0.0	1.4	1.0	0.0	0.0	4.9	3.6	5.6	0.0	0.0	0.0	0.0	0.0	26.9	6.2	33.1
7878R	Boeing 787-8 Dreamliner	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
A300B4-203	Airbus A300B4-200	0.3	0.5	0.0	0.0	0.5	0.1	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.7	1.6
A310-304	Airbus A310-304	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.3	0.4
A319-131	Airbus A319-131	8.6	3.7	0.0	0.0	0.7	0.8	1.2	0.0	7.4	2.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	17.9	6.7	24.6
A320-232	Airbus A320-232	91.4	31.2	19.0	6.2	10.7	1.5	28.8	4.2	35.9	8.8	6.8	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	192.6	52.6	245.3
A321-232	Airbus A321-232	2.5	1.8	0.0	0.0	0.0	0.0	0.0	0.0	2.6	1.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.2	3.6	8.8
A330-301	Airbus A330-301	9.0	1.7	0.0	0.0	0.8	0.2	0.0	0.1	3.0	1.7	1.8	2.1	0.4	0.2	0.0	0.0	0.0	0.0	0.0	0.0	15.1	6.0	21.0
A330-343	Airbus A330-343	13.4	0.5	2.6	0.0	0.0	0.0	0.0	0.0	0.2	0.0	2.0	1.1	8.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	26.2	1.8	28.0
A340-211	Airbus A340-211	7.1	0.6	0.0	0.0	0.0	0.1	0.6	0.0	0.8	0.7	0.7	0.8	1.6	0.4	1.5	0.5	0.0	0.0	0.0	0.0	12.3	3.2	15.5
A350	Airbus A350	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
A380-841	Airbus A380	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
A380-861	Airbus A380	4.2	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.3	0.0	0.0	1.4	1.0	1.6	0.0	0.0	0.0	0.0	0.0	7.6	1.7	9.3
BEC58P	Beechcraft Baron 58P	0.1	0.3	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.5	0.8
CIT3	Citation III	0.4	0.1	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.1	0.8
CLREGJ	Bombardier CRJ200 Regional Jet	32.7	1.2	30.9	2.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	63.7	4.1	67.8
CNA208	Cessna 208	0.3	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.0	0.7
CNA441	Cessna Conquest II	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.2
CNA500	Citation II	0.4	0.2	0.5	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.3	1.1
CNA750	Citation X	0.4	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.1	0.8
CRJ701	Bombardier CRJ700 Regional Jet	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CRJ900	Bombardier CRJ900 Regional Jet	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CRJ9-ER	Bombardier CRJ900 Regional Jet	31.9	1.2	30.2	2.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	62.1	4.0	66.1
DC1010	McDonnell Douglas DC-10-10	1.1	0.8	0.0	0.0	0.8	0.7	0.0	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.1	1.7	3.8
DC870	McDonnell Douglas DC-8-70	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DHC6	Dash 6	0.4	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.0	0.8
DHC830	Dash 8-300	1.5	0.0	1.5	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.1	3.0
EMB135	Embraer Regional Jet E135	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
EMB145	Embraer Regional Jet E145	25.9	1.1	7.8	1.6	7.2	0.1	9.5	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	50.4	3.5	53.9
EMB170	Embraer ERJ-170-100	0.2	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.4
EMB175	Embraer ERJ-170-200	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
EMB190	Embraer ERJ-190	40.7	1.5	38.5	3.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	79.2	5.1	84.3
FAL20	Falcon Jet 20	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.2
GASEPV	Single-engine variable-pitch prop	1.3	0.1	1.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.4	0.2	2.6
GIIB	Gulfstream G-IIB	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GIV	Gulfstream G-IV	0.5	0.1	0.4	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.2	1.0
GV	Gulfstream G-V	0.3	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.1	0.6
LEAR25	Learjet 25	0.2	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.1	0.4
LEAR35	Learjet 35	2.1	0.3	2.1	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.2	0.6	4.8
MD11GE	McDonnell Douglas MD-11	1.5	0.4	0.0	0.0	0.5	0.1	0.0	0.0	0.0	0.0	0.3	0.0	0.7	0.1	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.7	3.7
MD83	McDonnell Douglas MD-83	3.5	3.1	0.0	0.0	2.1	0.8	2.6	0.4	0.6	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.8	4.5	13.3
MU3001	Mitsubishi MU-300 Diamond	1.5	0.1	1.5	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.2	3.2
SD330	Shorts SD-330	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.3
Total		**459.8**	**99.5**	**143.2**	**18.8**	**34.5**	**8.2**	**70.8**	**12.3**	**116.5**	**25.2**	**39.1**	**12.2**	**34.8**	**14.3**	**14.8**	**3.4**	**2.4**	**1.5**	**4.1**	**2.3**	**919.9**	**197.5**	**1,117.4**

Source: PANYNJ Data, Landrum & Brown, 2013.

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Table B-5
AVERAGE ANNUAL DAY OPERATIONS BY INM TYPE, TIME OF DAY, AND STAGE LENGTH - 2015
John F. Kennedy International Airport

		Arrivals		Departures Stage 1		Stage 2		Stage 3		Stage 4		Stage 5		Stage 6		Stage 7		Stage 8		Stage 9		All Operations		
INM Type	**Aircraft Type**	**Day**	**Night**	**Day**	**Night**	**Day**	**Night**	**Day**	**Night**	**Day**	**Night**	**Day**	**Night**	**Day**	**Night**	**Day**	**Night**	**Day**	**Night**	**Day**	**Night**	**Day**	**Night**	**Total**
727EM2	Boeing 727-200	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
737500	Boeing 737-500	1.1	0.1	0.0	0.0	0.0	0.0	1.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.2	0.2	2.4
737700	Boeing 737-700	2.7	1.6	0.2	0.0	0.2	0.2	1.1	0.1	2.2	0.2	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.7	2.3	8.9
737800	Boeing 737-800	32.8	11.8	2.2	0.2	1.9	1.7	11.1	1.0	22.1	2.1	2.8	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	72.9	17.1	90.0
74710Q	Boeing 747-100	5.1	2.3	0.0	1.6	0.0	0.0	0.0	0.0	3.0	0.0	1.3	1.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.5	5.3	14.8
74720B	Boeing 747-200	0.8	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.5	0.8	2.3
747400	Boeing 747-400	11.1	3.8	0.1	0.0	0.1	0.2	0.2	1.0	0.4	0.1	4.3	1.2	1.3	1.4	0.3	0.1	0.5	0.7	1.7	1.0	19.9	9.5	29.4
7478	Boeing 747-800	0.8	0.3	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.3	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.1	1.5	0.7	2.2
757PW	Boeing 757-200 (PW engines)	32.4	8.9	0.0	0.0	4.5	0.4	7.1	0.8	20.5	2.4	5.7	0.9	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	70.2	13.4	83.6
767300	Boeing 767-300	66.4	9.1	1.4	0.1	4.3	0.4	4.8	2.9	14.1	2.8	9.1	0.6	19.4	7.0	8.1	2.2	0.0	0.0	0.0	0.0	127.6	25.1	152.7
767400	Boeing 767-400	6.6	0.2	0.1	0.0	0.3	0.0	0.4	0.3	1.1	0.3	0.7	0.1	1.6	0.7	0.7	0.2	0.0	0.0	0.0	0.0	11.5	1.8	13.3
777200	Boeing 777-200	5.3	1.1	0.0	0.0	0.1	0.0	0.2	0.1	0.0	0.0	1.5	0.9	1.2	0.4	0.2	0.4	0.6	0.1	0.5	0.2	9.6	3.2	12.8
7772LR	Boeing 777-200LR	2.2	0.4	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.6	0.4	0.5	0.2	0.1	0.2	0.2	0.1	0.2	0.1	3.9	1.3	5.2
777300	Boeing 777-300	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.2
7773ER	Boeing 777-300ER	10.9	1.1	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.7	0.0	0.0	3.6	2.3	4.1	0.0	0.0	0.0	0.0	0.0	19.7	4.1	23.8
7878R	Boeing 787-8 Dreamliner	1.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.4	0.2	0.4	0.0	0.0	0.0	0.0	0.0	2.0	0.4	2.4
A300B4-203	Airbus A300B4-200	0.9	1.2	0.0	0.0	1.4	0.2	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.3	1.9	4.2
A310-304	Airbus A310-304	0.2	0.3	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.7	1.0
A319-131	Airbus A319-131	9.0	3.5	0.0	0.0	0.7	0.8	1.3	0.0	7.8	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	18.8	6.4	25.2
A320-232	Airbus A320-232	88.8	27.7	18.4	5.3	10.4	1.3	28.0	3.6	34.8	7.6	6.6	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	187.0	46.1	233.1
A321-232	Airbus A321-232	16.3	11.5	0.1	0.0	0.0	0.0	0.2	0.0	17.2	10.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	33.8	21.7	55.5
A330-301	Airbus A330-301	11.0	1.8	0.0	0.0	0.9	0.2	0.0	0.1	3.3	2.0	2.0	2.5	0.5	0.2	0.0	0.0	0.0	0.0	0.0	0.0	17.8	6.9	24.7
A330-343	Airbus A330-343	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
A340-211	Airbus A340-211	10.1	0.7	0.0	0.0	0.0	0.2	0.9	0.0	1.0	0.9	0.9	1.1	2.2	0.6	2.0	0.6	0.0	0.0	0.0	0.0	17.1	4.1	21.2
A350	Airbus A350	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.7	0.1	0.9
A380-841	Airbus A380	3.9	1.3	0.0	0.0	0.0	0.1	0.1	0.4	0.1	0.0	1.5	0.4	0.4	0.5	0.1	0.0	0.8	0.6	0.0	0.0	6.9	3.3	10.3
A380-861	Airbus A380	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BEC58P	Beechcraft Baron 58P	0.2	0.5	0.2	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.9	1.3
CIT3	Citation III	0.3	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.1	0.6
CLREGJ	Bombardier CRJ200 Regional Jet	23.2	2.1	21.6	3.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	44.8	5.6	50.4
CNA208	Cessna 208	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CNA441	Cessna Conquest II	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CNA500	Citation II	0.1	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.1	0.4
CNA750	Citation X	1.2	0.0	1.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.3	0.1	2.4
CRJ701	Bombardier CRJ700 Regional Jet	13.3	1.2	12.4	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	25.8	3.2	29.0
CRJ900	Bombardier CRJ900 Regional Jet	22.1	2.0	20.6	3.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	42.7	5.3	48.0
CRJ9-ER	Bombardier CRJ900 Regional Jet	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DC1010	McDonnell Douglas DC-10-10	1.2	0.9	0.0	0.0	1.0	0.7	0.0	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.3	1.8	4.1
DC870	McDonnell Douglas DC-8-70	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.3	0.6
DHC6	Dash 6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DHC830	Dash 8-300	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
EMB135	Embraer Regional Jet E135	8.1	0.5	7.8	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	15.9	1.0	17.0
EMB145	Embraer Regional Jet E145	38.2	1.5	11.6	2.1	10.7	0.2	14.2	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	74.8	4.6	79.4
EMB170	Embraer ERJ-170-100	3.0	0.1	2.9	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.0	0.3	6.3
EMB175	Embraer ERJ-170-200	10.3	0.3	9.9	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	20.2	1.2	21.3
EMB190	Embraer ERJ-190	47.8	1.6	45.9	3.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	93.8	5.4	99.1
FAL20	Falcon Jet 20	0.6	0.1	0.6	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2	0.1	1.3
GASEPV	Single-engine variable-pitch prop	1.2	0.1	1.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.3	0.1	2.4
GIIB	Gulfstream G-IIB	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.2
GIV	Gulfstream G-IV	0.4	0.0	0.4	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.1	0.9
GV	Gulfstream G-V	0.9	0.1	0.8	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.8	0.2	2.0
LEAR25	Learjet 25	1.6	0.2	0.7	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.3	0.5	2.8
LEAR35	Learjet 35	1.0	0.1	1.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.1	0.3	2.3
MD11GE	McDonnell Douglas MD-11	3.1	0.7	0.0	0.0	1.2	0.2	0.0	0.0	0.0	0.0	0.5	0.1	1.6	0.2	0.0	0.0	0.0	0.0	0.0	0.0	6.4	1.3	7.7
MD83	McDonnell Douglas MD-83	4.1	3.4	0.0	0.0	2.3	0.8	2.9	0.4	0.7	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.9	4.8	14.7
MU3001	Mitsubishi MU-300 Diamond	3.2	0.3	3.4	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.6	0.5	7.1
SD330	Shorts SD-330	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total		**505.6**	**105.1**	**165.4**	**25.2**	**40.1**	**7.7**	**73.6**	**12.2**	**129.8**	**31.9**	**38.8**	**11.5**	**33.0**	**14.1**	**16.2**	**3.8**	**2.1**	**1.5**	**2.6**	**1.4**	**1,007.1**	**214.3**	**1,221.4**

Source: PANYNJ Data, Landrum & Brown, 2013.

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Table B-6
AVERAGE ANNUAL DAY OPERATIONS BY INM TYPE, TIME OF DAY, AND STAGE LENGTH - 2020
John F. Kennedy International Airport

												Departures												
		Arrivals		Stage 1		Stage 2		Stage 3		Stage 4		Stage 5		Stage 6		Stage 7		Stage 8		Stage 9		All Operations		
INM Type	Aircraft Type	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Total
727EM2	Boeing 727-200	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
737500	Boeing 737-500	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
737700	Boeing 737-700	3.5	2.1	0.3	0.0	0.2	0.3	1.4	0.1	2.9	0.3	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.7	2.8	11.5
737800	Boeing 737-800	42.1	14.6	2.8	0.3	2.4	2.1	14.1	1.3	28.2	2.6	3.5	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	93.1	21.2	114.3
74710Q	Boeing 747-100	5.7	2.4	0.0	1.7	0.0	0.0	0.0	0.0	3.4	0.0	1.5	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.5	5.7	16.2
74720B	Boeing 747-200	0.6	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.5	1.5
747400	Boeing 747-400	11.3	3.7	0.1	0.0	0.1	0.2	0.2	1.0	0.4	0.1	4.4	1.2	1.3	1.4	0.3	0.1	0.5	0.6	1.7	1.0	20.3	9.4	29.7
7478	Boeing 747-800	1.1	0.4	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.4	0.1	0.1	0.1	0.0	0.0	0.1	0.1	0.2	0.1	2.1	1.0	3.0
757PW	Boeing 757-200 (PW engines)	21.2	5.6	0.0	0.0	2.9	0.2	4.6	0.5	13.4	1.5	3.7	0.6	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	45.9	8.5	54.4
767300	Boeing 767-300	70.7	9.4	1.5	0.1	4.6	0.4	5.2	3.0	15.1	2.9	9.7	0.6	20.7	7.2	8.6	2.3	0.0	0.0	0.0	0.0	136.0	26.0	162.0
767400	Boeing 767-400	8.8	0.2	0.1	0.0	0.5	0.1	0.5	0.4	1.5	0.4	1.0	0.1	2.1	1.0	0.9	0.3	0.0	0.0	0.0	0.0	15.4	2.4	17.7
777200	Boeing 777-200	4.7	0.9	0.0	0.0	0.1	0.0	0.2	0.1	0.0	0.0	1.3	0.8	1.1	0.4	0.1	0.3	0.5	0.1	0.5	0.2	8.5	2.7	11.3
7772LR	Boeing 777-200LR	5.1	1.0	0.0	0.0	0.1	0.0	0.2	0.1	0.0	0.0	1.4	0.8	1.2	0.4	0.2	0.3	0.6	0.1	0.5	0.2	9.2	3.0	12.2
777300	Boeing 777-300	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.3	0.1	0.3
7773ER	Boeing 777-300ER	14.3	1.5	0.0	0.0	0.0	0.0	0.0	0.0	1.4	0.8	0.0	0.0	4.7	3.0	5.5	0.0	0.0	0.0	0.0	0.0	25.9	5.3	31.2
7878R	Boeing 787-8 Dreamliner	3.4	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.2	0.0	0.0	1.1	0.7	1.3	0.0	0.0	0.0	0.0	0.0	6.1	1.2	7.4
A300B4-203	Airbus A300B4-200	1.2	1.6	0.0	0.0	1.8	0.2	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.1	2.4	5.5
A310-304	Airbus A310-304	0.3	0.4	0.0	0.0	0.0	0.1	0.0	0.3	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.9	1.3
A319-131	Airbus A319-131	12.0	4.6	0.0	0.0	1.0	1.0	1.7	0.0	10.5	2.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	25.2	8.3	33.5
A320-232	Airbus A320-232	100.1	30.2	20.7	5.8	11.7	1.4	31.4	3.9	39.2	8.2	7.4	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	210.6	50.3	260.9
A321-232	Airbus A321-232	23.7	16.1	0.1	0.0	0.0	0.0	0.3	0.0	24.9	14.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	48.9	30.5	79.4
A330-301	Airbus A330-301	14.3	2.3	0.0	0.0	1.2	0.3	0.0	0.2	4.4	2.6	2.7	3.1	0.6	0.3	0.0	0.0	0.0	0.0	0.0	0.0	23.2	8.8	32.0
A330-343	Airbus A330-343	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
A340-211	Airbus A340-211	8.1	0.6	0.0	0.0	0.0	0.1	0.7	0.0	0.8	0.7	0.7	0.8	1.8	0.4	1.6	0.5	0.0	0.0	0.0	0.0	13.8	3.2	16.9
A350	Airbus A350	1.9	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.1	0.0	0.0	0.6	0.4	0.7	0.0	0.0	0.0	0.0	0.0	3.4	0.7	4.1
A380-841	Airbus A380	5.5	1.8	0.1	0.0	0.0	0.1	0.1	0.5	0.2	0.0	2.1	0.6	0.6	0.7	0.1	0.1	1.1	0.8	0.0	0.0	9.8	4.5	14.4
A380-861	Airbus A380	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BEC58P	Beechcraft Baron 58P	0.2	0.5	0.2	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.8	1.2
CIT3	Citation III	0.3	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.1	0.6
CLREGJ	Bombardier CRJ200 Regional Jet	22.8	2.0	21.3	3.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	44.2	5.3	49.5
CNA208	Cessna 208	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CNA441	Cessna Conquest II	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CNA500	Citation II	0.1	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.1	0.4
CNA750	Citation X	1.2	0.0	1.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.3	0.1	2.4
CRJ701	Bombardier CRJ700 Regional Jet	16.2	1.4	15.1	2.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	31.3	3.8	35.1
CRJ900	Bombardier CRJ900 Regional Jet	22.9	2.0	21.4	3.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	44.2	5.3	49.6
CRJ9-ER	Bombardier CRJ900 Regional Jet	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DC1010	McDonnell Douglas DC-10-10	1.3	0.9	0.0	0.0	1.0	0.8	0.0	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.5	1.8	4.3
DC870	McDonnell Douglas DC-8-70	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.3	0.5
DHC6	Dash 6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DHC830	Dash 8-300	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
EMB135	Embraer Regional Jet E135	7.1	0.4	6.8	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	13.9	0.8	14.8
EMB145	Embraer Regional Jet E145	37.2	1.4	11.4	2.0	10.5	0.2	13.9	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	72.9	4.4	77.3
EMB170	Embraer ERJ-170-100	4.9	0.2	4.7	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.6	0.5	10.1
EMB175	Embraer ERJ-170-200	11.3	0.4	10.9	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	22.2	1.3	23.4
EMB190	Embraer ERJ-190	52.3	1.8	50.2	4.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	102.5	5.9	108.4
FAL20	Falcon Jet 20	0.6	0.1	0.6	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2	0.1	1.3
GASEPV	Single-engine variable-pitch prop	1.2	0.1	1.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.3	0.1	2.4
GIIB	Gulfstream G-IIB	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.2
GIV	Gulfstream G-IV	0.4	0.0	0.4	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.1	0.9
GV	Gulfstream G-V	2.4	0.2	2.3	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.7	0.6	5.2
LEAR25	Learjet 25	1.7	0.2	0.7	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.3	0.5	2.8
LEAR35	Learjet 35	1.0	0.1	1.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.1	0.2	2.3
MD11GE	McDonnell Douglas MD-11	4.2	1.0	0.0	0.0	1.6	0.3	0.0	0.0	0.0	0.0	0.7	0.1	2.2	0.3	0.0	0.0	0.0	0.0	0.0	0.0	8.8	1.7	10.5
MD83	McDonnell Douglas MD-83	0.9	0.7	0.0	0.0	0.5	0.2	0.6	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.2	1.0	3.3
MU3001	Mitsubishi MU-300 Diamond	3.3	0.3	3.4	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.7	0.4	7.1
SD330	Shorts SD-330	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total		**553.3**	**113.9**	**178.9**	**26.6**	**40.3**	**7.9**	**75.3**	**12.5**	**146.9**	**37.8**	**41.5**	**12.4**	**38.3**	**16.3**	**19.4**	**3.9**	**2.8**	**1.8**	**2.9**	**1.4**	**1,099.8**	**234.7**	**1,334.4**

Source: PANYNJ Data, Landrum & Brown, 2013.

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Table B-7
RUNWAY USE BY INM TYPE AND TIME OF DAY – 2012/2013 (SHOWN IN PERCENTAGES)
John F. Kennedy International Airport

Daytime

INM Type	Arrivals									Departures									
	4L	4R	13L	13R	22L	22R	31L	31R	Total	4L	4R	13L	13R	22L	22R	31L	31L[k]	31R	Total
1900D	4	13	7	10	23	1	18	24	**100**	16	0	0	17	0	33	16	16	2	**100**
737500	3	22	11	1	34	2	11	17	**100**	25	0	0	10	0	28	18	18	0	**100**
737700	3	24	9	1	29	2	16	16	**100**	17	0	0	7	1	24	25	25	0	**100**
737800	4	16	16	1	24	3	18	19	**100**	17	0	0	10	1	22	25	25	0	**100**
74710Q	-	-	-	-	-	-	-	-	**-**	-	-	-	-	-	-	-	-	-	**-**
74720B	4	18	10	0	37	2	5	24	**100**	20	0	1	14	1	27	19	19	0	**100**
747400	3	19	9	0	37	2	8	22	**100**	24	0	1	12	0	40	17	7	0	**100**
7478	3	19	9	0	37	2	8	22	**100**	24	0	1	12	0	40	17	7	0	**100**
757PW	3	18	13	0	32	3	12	20	**100**	20	0	0	11	0	27	21	21	0	**100**
767300	2	18	7	0	39	2	9	23	**100**	20	0	0	14	0	31	25	10	0	**100**
767400	1	16	4	0	44	1	10	24	**100**	23	0	0	14	1	50	9	3	0	**100**
777200	1	22	7	0	42	1	2	25	**100**	26	0	0	11	0	40	17	4	0	**100**
7772LR	1	22	7	0	42	1	2	25	**100**	26	0	0	11	0	40	17	4	0	**100**
777300	2	23	8	0	33	1	1	32	**100**	22	0	0	15	1	29	32	2	0	**100**
7773ER	2	23	8	0	33	1	1	32	**100**	22	0	0	15	1	29	32	2	0	**100**
7878R	-	-	-	-	-	-	-	-	**-**	-	-	-	-	-	-	-	-	-	**-**
A300B4-203	3	40	3	0	33	3	5	14	**100**	3	0	77	1	4	3	6	6	0	**100**
A310-304	10	14	7	4	14	34	2	15	**100**	14	0	3	5	18	19	30	5	7	**100**
A319-131	3	21	12	0	32	2	10	20	**100**	21	0	0	10	0	26	21	21	0	**100**
A320-232	4	21	14	0	30	3	6	23	**100**	19	0	0	12	0	23	22	22	0	**100**
A321-232	1	26	11	4	35	1	2	20	**100**	22	0	0	12	1	30	16	16	1	**100**
A330-301	1	1	1	4	4	25	57	7	**100**	21	1	7	6	10	28	8	7	13	**100**
A330-343	1	16	6	0	40	1	4	33	**100**	27	0	0	10	0	46	13	3	0	**100**
A340-211	3	14	8	0	37	2	2	34	**100**	27	0	0	11	0	44	14	4	0	**100**
A350	-	-	-	-	-	-	-	-	**-**	-	-	-	-	-	-	-	-	-	**-**
A380-841	-	-	-	-	-	-	-	-	**-**	-	-	-	-	-	-	-	-	-	**-**
A380-861	2	23	8	0	33	1	1	32	**100**	22	0	0	15	1	29	32	2	0	**100**
BEC58P	5	23	6	3	25	9	21	8	**100**	13	0	0	8	0	26	8	8	37	**100**
CIT3	1	19	4	8	32	6	27	4	**100**	14	0	0	13	0	18	24	24	6	**100**
CLREGJ	4	20	13	1	30	3	13	17	**100**	21	0	0	13	0	27	19	19	0	**100**
CNA208	10	19	4	2	30	7	20	7	**100**	31	0	2	18	0	22	11	11	6	**100**
CNA441	4	13	7	10	23	1	18	24	**100**	16	0	0	17	0	33	16	16	2	**100**
CNA500	2	8	17	5	21	17	19	11	**100**	7	0	0	21	0	17	27	27	0	**100**
CNA750	5	13	12	2	35	5	13	16	**100**	13	0	0	14	0	26	23	23	1	**100**
CRJ701	-	-	-	-	-	-	-	-	**-**	-	-	-	-	-	-	-	-	-	**-**
CRJ900	-	-	-	-	-	-	-	-	**-**	-	-	-	-	-	-	-	-	-	**-**
CRJ9-ER	4	20	13	1	30	3	13	17	**100**	21	0	0	13	0	27	19	19	0	**100**
DC1010	3	26	9	0	46	2	1	12	**100**	7	0	2	3	1	9	39	39	0	**100**
DC870	-	-	-	-	-	-	-	-	**-**	-	-	-	-	-	-	-	-	-	**-**
DHC6	4	13	7	10	23	1	18	24	**100**	16	0	0	17	0	33	16	16	2	**100**
DHC830	4	13	7	10	23	1	18	24	**100**	16	0	0	17	0	33	16	16	2	**100**
EMB135	-	-	-	-	-	-	-	-	**-**	-	-	-	-	-	-	-	-	-	**-**
EMB145	3	19	15	1	27	3	16	17	**100**	19	0	0	15	0	25	20	20	1	**100**
EMB170	3	22	11	1	34	2	11	17	**100**	25	0	0	10	0	28	18	18	0	**100**
EMB175	-	-	-	-	-	-	-	-	**-**	-	-	-	-	-	-	-	-	-	**-**
EMB190	4	20	13	1	30	3	13	17	**100**	21	0	0	13	0	27	19	19	0	**100**
FAL20	5	13	12	4	26	9	24	6	**100**	13	1	1	20	0	28	19	19	0	**100**
GASEPV	10	19	4	2	30	7	20	7	**100**	31	0	2	18	0	22	11	11	6	**100**
GIIB	-	-	-	-	-	-	-	-	**-**	-	-	-	-	-	-	-	-	-	**-**
GIV	7	13	7	4	37	2	16	13	**100**	14	0	0	17	0	22	23	23	2	**100**
GV	3	22	11	0	31	2	4	26	**100**	20	0	1	13	0	25	20	20	0	**100**
LEAR25	2	3	43	7	15	15	10	5	**100**	5	0	0	4	0	12	3	3	74	**100**
LEAR35	5	20	10	4	28	4	20	9	**100**	15	0	0	15	1	19	24	24	1	**100**
MD11GE	4	19	7	5	24	6	26	8	**100**	16	0	0	17	1	15	35	12	2	**100**
MD83	8	14	5	15	27	3	6	21	**100**	27	0	1	7	1	32	16	16	0	**100**
MU3001	4	16	19	1	23	2	19	16	**100**	14	0	0	16	0	20	25	25	0	**100**
SD330	4	13	7	10	23	1	18	24	**100**	16	0	0	17	0	33	16	16	2	**100**
TOTAL	3	19	12	1	31	3	11	21	**100**	20	0	1	12	0	27	21	18	0	**100**

Nighttime

INM Type	Arrivals									Departures									
	4L	4R	13L	13R	22L	22R	31L	31R	Total	4L	4R	13L	13R	22L	22R	31L	31L[k]	31R	Total
1900D	5	16	0	0	37	0	25	17	**100**	8	0	0	5	0	13	36	36	2	**100**
737500	2	10	5	1	25	2	6	48	**100**	10	2	0	6	2	35	21	21	3	**100**
737700	4	24	3	3	24	1	24	18	**100**	25	1	0	1	0	25	24	24	0	**100**
737800	2	23	4	1	30	1	14	24	**100**	23	0	0	5	0	33	19	19	0	**100**
74710Q	-	-	-	-	-	-	-	-	**-**	-	-	-	-	-	-	-	-	-	**-**
74720B	3	15	5	3	31	1	10	30	**100**	20	1	1	5	1	34	18	18	2	**100**
747400	4	20	4	0	28	2	9	32	**100**	22	0	1	6	0	34	28	8	2	**100**
7478	4	20	4	0	28	2	9	32	**100**	22	0	1	6	0	34	28	8	2	**100**
757PW	2	22	4	1	31	2	15	24	**100**	21	0	1	6	0	33	19	19	1	**100**
767300	3	24	4	0	31	2	10	27	**100**	20	0	1	6	0	34	30	8	1	**100**
767400	7	14	8	1	27	3	9	30	**100**	23	0	0	7	1	37	25	7	0	**100**
777200	3	23	4	0	28	1	2	39	**100**	20	1	0	8	1	35	27	8	1	**100**
7772LR	3	23	4	0	28	1	2	39	**100**	20	1	0	8	1	35	27	8	1	**100**
777300	0	0	0	0	38	0	4	58	**100**	20	0	1	6	0	40	28	3	1	**100**
7773ER	0	0	0	0	38	0	4	58	**100**	20	0	1	6	0	40	28	3	1	**100**
7878R	-	-	-	-	-	-	-	-	**-**	-	-	-	-	-	-	-	-	-	**-**
A300B4-203	7	32	1	12	25	1	3	17	**100**	14	6	1	4	4	35	18	18	0	**100**
A310-304	0	35	2	0	30	0	2	31	**100**	28	0	6	2	0	28	18	17	1	**100**
A319-131	3	20	6	0	35	1	4	31	**100**	21	1	1	6	1	33	18	18	2	**100**
A320-232	3	20	5	0	31	2	3	36	**100**	21	0	1	5	0	33	19	19	2	**100**
A321-232	2	15	5	8	28	1	3	39	**100**	19	0	1	6	0	32	20	20	2	**100**
A330-301	3	24	4	1	29	2	6	30	**100**	22	2	0	18	0	1	30	27	1	**100**
A330-343	0	0	0	0	34	0	0	66	**100**	19	0	0	9	0	42	17	13	0	**100**
A340-211	4	26	2	0	26	2	2	37	**100**	20	0	0	8	0	36	24	11	0	**100**
A350	-	-	-	-	-	-	-	-	**-**	-	-	-	-	-	-	-	-	-	**-**
A380-841	-	-	-	-	-	-	-	-	**-**	-	-	-	-	-	-	-	-	-	**-**
A380-861	0	0	0	0	38	0	4	58	**100**	20	0	1	6	0	40	28	3	1	**100**
BEC58P	9	20	4	1	17	8	6	36	**100**	27	0	0	1	0	52	3	3	14	**100**
CIT3	0	7	0	0	7	6	32	47	**100**	42	0	0	37	0	7	7	7	0	**100**
CLREGJ	2	25	4	1	28	1	12	28	**100**	18	2	0	7	3	38	15	15	3	**100**
CNA208	0	41	9	8	0	0	4	39	**100**	46	0	7	10	0	16	10	10	0	**100**
CNA441	5	16	0	0	37	0	24	17	**100**	8	0	0	5	0	13	36	36	2	**100**
CNA500	0	22	15	0	15	0	25	22	**100**	0	0	0	32	0	48	10	10	0	**100**
CNA750	0	18	0	0	43	0	30	9	**100**	12	0	0	4	0	37	24	24	0	**100**
CRJ701	-	-	-	-	-	-	-	-	**-**	-	-	-	-	-	-	-	-	-	**-**
CRJ900	-	-	-	-	-	-	-	-	**-**	-	-	-	-	-	-	-	-	-	**-**
CRJ9-ER	2	25	4	1	28	1	12	28	**100**	18	2	0	7	3	38	15	15	3	**100**
DC1010	2	29	2	0	22	3	3	39	**100**	21	0	5	2	0	30	21	21	0	**100**
DC870	-	-	-	-	-	-	-	-	**-**	-	-	-	-	-	-	-	-	-	**-**
DHC6	5	16	0	0	37	0	25	17	**100**	8	0	0	5	0	13	36	36	2	**100**
DHC830	5	16	0	0	37	0	24	17	**100**	8	0	0	5	0	13	36	36	2	**100**
EMB135	-	-	-	-	-	-	-	-	**-**	-	-	-	-	-	-	-	-	-	**-**
EMB145	0	23	6	0	32	1	11	27	**100**	21	0	0	7	0	37	18	18	0	**100**
EMB170	2	10	5	1	25	2	6	48	**100**	10	2	0	6	2	35	21	21	3	**100**
EMB175	-	-	-	-	-	-	-	-	**-**	-	-	-	-	-	-	-	-	-	**-**
EMB190	2	25	4	1	28	1	12	28	**100**	18	2	0	7	3	38	15	15	3	**100**
FAL20	0	20	12	0	13	0	38	17	**100**	20	0	0	14	0	24	21	21	0	**100**
GASEPV	0	41	9	8	0	0	4	39	**100**	46	0	7	10	0	16	10	10	0	**100**
GIIB	-	-	-	-	-	-	-	-	**-**	-	-	-	-	-	-	-	-	-	**-**
GIV	0	17	12	0	33	0	38	0	**100**	14	0	0	8	0	34	22	22	0	**100**
GV	2	20	6	0	34	2	2	34	**100**	20	0	1	7	1	36	18	18	0	**100**
LEAR25	0	22	0	0	7	6	50	15	**100**	20	0	0	5	16	22	19	19	0	**100**
LEAR35	2	15	9	2	25	1	34	12	**100**	12	0	0	8	3	29	24	24	0	**100**
MD11GE	4	15	18	2	23	13	21	5	**100**	15	4	10	4	3	32	21	10	1	**100**
MD83	0	15	4	0	25	6	7	41	**100**	22	0	0	7	0	31	20	20	2	**100**
MU3001	0	18	0	0	47	1	13	21	**100**	18	0	0	8	1	28	23	23	0	**100**
SD330	5	16	0	0	37	0	25	17	**100**	8	0	0	5	0	13	36	36	2	**100**
TOTAL	3	21	4	1	30	2	8	31	**100**	21	0	1	6	0	33	22	15	2	**100**

Notes: Totals may not equal 100 due to rounding
31L[k] represents departures on Runway 31L at the intersection of Taxiway K.
Source: PANYNJ Data, Landrum & Brown, 2013.

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Table B-8
RUNWAY USE BY INM TYPE AND TIME OF DAY – 2015 (SHOWN IN PERCENTAGES)
John F. Kennedy International Airport

INM Type	Daytime																				Nighttime																			
	Arrivals									Departures											Arrivals									Departures										
	4L	4R	13L	13R	22L	22R	31L	31R	Total	4L	4R	13L	13R	22L	22R	31L	31L[k]	31R	Total	4L	4R	13L	13R	22L	22R	31L	31R	Total	4L	4R	13L	13R	22L	22R	31L	31L[k]	31R	Total
1900D	-	-	-	-	-	-	-	-	**-**	-	-	-	-	-	-	-	-	-	**-**	-	-	-	-	-	-	-	-	**-**	-	-	-	-	-	-	-	-	-	**-**
737500	3	20	13	1	32	3	10	19	**100**	23	0	0	11	0	27	19	19	0	**100**	3	9	6	1	22	3	5	52	**100**	9	2	0	7	2	34	22	22	1	**100**
737700	4	22	11	1	27	3	15	18	**100**	15	0	0	8	1	22	27	27	0	**100**	5	22	3	3	22	2	23	21	**100**	22	1	0	1	0	23	26	26	0	**100**
737800	5	14	18	1	21	4	17	20	**100**	15	0	0	12	1	20	26	26	0	**100**	3	21	5	1	28	2	13	28	**100**	21	0	0	6	0	32	21	21	0	**100**
74710Q	0	15	19	1	14	3	13	35	**100**	19	0	2	42	3	30	2	2	0	**100**	3	31	4	2	31	6	17	6	**100**	15	0	0	11	0	22	26	26	1	**100**
74720B	6	16	12	0	34	2	4	26	**100**	18	0	1	16	1	25	20	20	0	**100**	4	14	6	3	28	2	9	33	**100**	18	1	1	5	1	33	20	20	1	**100**
747400	3	17	11	0	35	2	7	25	**100**	22	0	1	14	0	38	18	7	0	**100**	6	18	5	0	26	2	8	35	**100**	20	0	1	7	0	33	30	8	1	**100**
7478	3	17	11	0	35	2	7	25	**100**	22	0	1	14	0	38	18	7	0	**100**	6	18	5	0	26	2	8	35	**100**	20	0	1	7	0	33	30	8	1	**100**
757PW	4	16	15	0	29	3	11	22	**100**	17	0	0	13	0	25	22	22	0	**100**	3	20	5	1	29	2	14	27	**100**	19	0	1	7	0	32	21	20	0	**100**
767300	2	16	8	0	36	2	9	26	**100**	17	0	0	16	0	29	27	10	0	**100**	4	21	4	0	29	2	9	30	**100**	18	0	1	8	0	32	32	9	0	**100**
767400	1	14	5	0	41	2	9	28	**100**	21	0	0	16	1	48	10	4	0	**100**	9	12	9	1	24	4	8	32	**100**	20	0	0	9	1	36	27	7	0	**100**
777200	2	20	8	0	39	2	1	28	**100**	24	0	0	13	0	39	18	5	0	**100**	4	20	4	0	25	2	2	43	**100**	18	1	0	9	1	33	29	9	0	**100**
7772LR	2	20	8	0	39	2	1	28	**100**	24	0	0	13	0	39	18	5	0	**100**	4	20	4	0	25	2	2	43	**100**	18	1	0	9	1	33	29	9	0	**100**
777300	2	20	9	0	30	1	1	35	**100**	19	0	0	17	1	27	33	2	0	**100**	0	0	0	0	34	0	3	63	**100**	18	0	1	8	0	38	31	4	0	**100**
7773ER	2	20	9	0	30	1	1	35	**100**	19	0	0	17	1	27	33	2	0	**100**	0	0	0	0	34	0	3	63	**100**	18	0	1	8	0	38	31	4	0	**100**
7878R	2	20	9	0	30	1	1	35	**100**	19	0	0	17	1	27	33	2	0	**100**	0	0	0	0	34	0	3	63	**100**	18	0	1	8	0	38	31	4	0	**100**
A300B4-203	4	37	4	0	31	3	5	16	**100**	3	0	76	1	4	3	7	7	0	**100**	10	29	1	12	24	2	3	20	**100**	12	6	1	5	4	33	19	19	0	**100**
A310-304	11	11	7	4	11	38	2	15	**100**	13	0	3	6	19	19	34	5	2	**100**	0	32	3	0	28	0	2	35	**100**	25	0	6	3	0	27	20	19	0	**100**
A319-131	3	19	14	0	30	3	9	22	**100**	19	0	0	12	0	25	22	22	0	**100**	4	18	7	0	32	1	3	35	**100**	19	1	1	7	1	32	20	20	0	**100**
A320-232	5	18	16	0	27	3	5	25	**100**	17	0	0	13	0	22	24	24	0	**100**	4	18	5	0	28	2	2	40	**100**	19	0	1	6	0	32	21	21	0	**100**
A321-232	1	24	13	4	33	2	2	22	**100**	20	0	0	14	1	29	18	18	0	**100**	2	13	6	8	25	1	3	42	**100**	17	0	1	7	0	31	22	22	1	**100**
A330-301	1	1	1	4	4	31	50	8	**100**	21	1	8	8	11	30	9	8	4	**100**	4	21	4	1	27	2	6	34	**100**	19	2	0	20	0	1	31	28	0	**100**
A330-343	-	-	-	-	-	-	-	-	**-**	-	-	-	-	-	-	-	-	-	**-**	-	-	-	-	-	-	-	-	**-**	-	-	-	-	-	-	-	-	-	**-**
A340-211	3	13	9	0	33	2	2	37	**100**	25	0	0	13	0	43	16	4	0	**100**	5	23	3	0	24	3	2	41	**100**	18	0	0	9	0	35	26	12	0	**100**
A350	2	20	9	0	30	1	1	35	**100**	19	0	0	17	1	27	33	2	0	**100**	0	0	0	0	34	0	3	63	**100**	18	0	1	8	0	38	31	4	0	**100**
A380-841	3	17	11	0	34	2	7	25	**100**	22	0	1	14	0	38	18	7	0	**100**	6	18	5	0	26	2	8	35	**100**	20	0	1	7	0	33	30	8	1	**100**
A380-861	-	-	-	-	-	-	-	-	**-**	-	-	-	-	-	-	-	-	-	**-**	-	-	-	-	-	-	-	-	**-**	-	-	-	-	-	-	-	-	-	**-**
BEC58P	7	21	7	3	23	11	19	9	**100**	16	0	0	13	0	34	12	12	13	**100**	11	17	4	1	15	9	6	38	**100**	29	0	0	1	0	58	4	4	4	**100**
CIT3	2	17	5	8	30	7	26	4	**100**	13	0	0	15	0	18	26	26	1	**100**	0	6	0	0	6	8	28	51	**100**	37	0	0	42	0	7	8	8	0	**100**
CLREGJ	4	19	13	0	29	3	3	29	**100**	18	0	1	15	0	23	22	22	0	**100**	2	18	7	0	31	3	2	37	**100**	18	0	1	8	1	34	19	19	0	**100**
CNA208	-	-	-	-	-	-	-	-	**-**	-	-	-	-	-	-	-	-	-	**-**	-	-	-	-	-	-	-	-	**-**	-	-	-	-	-	-	-	-	-	**-**
CNA441	5	11	8	10	21	2	16	26	**100**	14	0	0	19	0	32	17	17	1	**100**	7	16	0	0	35	0	22	20	**100**	7	0	0	4	0	12	38	38	1	**100**
CNA500	3	7	19	5	18	21	16	11	**100**	6	0	0	23	0	16	27	27	0	**100**	0	20	18	0	14	0	23	25	**100**	0	0	0	35	0	44	11	11	0	**100**
CNA750	6	12	13	2	32	6	12	18	**100**	11	0	0	16	0	24	24	24	0	**100**	0	17	0	0	43	0	30	11	**100**	11	0	0	5	0	35	25	25	0	**100**
CRJ701	4	19	13	0	29	3	3	29	**100**	18	0	1	15	0	23	22	22	0	**100**	2	18	7	0	31	3	2	37	**100**	18	0	1	8	1	34	19	19	0	**100**
CRJ900	4	19	13	0	29	3	3	29	**100**	18	0	1	15	0	23	22	22	0	**100**	2	18	7	0	31	3	2	37	**100**	18	0	1	8	1	34	19	19	0	**100**
CRJ9-ER	-	-	-	-	-	-	-	-	**-**	-	-	-	-	-	-	-	-	-	**-**	-	-	-	-	-	-	-	-	**-**	-	-	-	-	-	-	-	-	-	**-**
DC1010	4	24	11	0	44	3	1	14	**100**	6	0	2	3	1	8	40	40	0	**100**	3	25	3	0	20	3	3	43	**100**	19	0	5	2	0	28	23	23	0	**100**
DC870	6	22	8	1	29	0	3	31	**100**	33	3	4	28	7	6	9	9	1	**100**	5	13	10	2	18	3	5	44	**100**	13	0	5	6	2	28	23	23	2	**100**
DHC6	-	-	-	-	-	-	-	-	**-**	-	-	-	-	-	-	-	-	-	**-**	-	-	-	-	-	-	-	-	**-**	-	-	-	-	-	-	-	-	-	**-**
DHC830	-	-	-	-	-	-	-	-	**-**	-	-	-	-	-	-	-	-	-	**-**	-	-	-	-	-	-	-	-	**-**	-	-	-	-	-	-	-	-	-	**-**
EMB135	4	17	14	0	25	3	9	27	**100**	18	0	0	17	0	23	21	21	1	**100**	2	19	6	0	24	3	5	40	**100**	17	0	0	13	1	36	17	17	0	**100**
EMB145	4	17	17	1	25	3	14	19	**100**	17	0	0	17	0	23	21	21	0	**100**	0	21	7	0	30	1	10	30	**100**	19	0	0	8	0	35	19	19	0	**100**
EMB170	5	18	14	1	28	3	12	19	**100**	18	0	0	15	0	26	20	20	0	**100**	2	22	5	1	26	1	11	31	**100**	17	2	0	8	3	37	16	16	1	**100**
EMB175	5	18	14	1	28	3	12	19	**100**	18	0	0	15	0	26	20	20	0	**100**	2	22	5	1	26	1	11	31	**100**	17	2	0	8	3	37	16	16	1	**100**
EMB190	5	18	14	1	28	3	12	19	**100**	18	0	0	15	0	26	20	20	0	**100**	2	22	5	1	26	1	11	31	**100**	17	2	0	8	3	37	16	16	1	**100**
FAL20	6	12	14	4	24	11	22	7	**100**	11	1	1	22	0	26	20	20	0	**100**	0	18	14	0	12	0	36	19	**100**	17	0	0	17	0	23	22	22	0	**100**
GASEPV	13	17	5	2	28	10	19	8	**100**	29	0	2	22	0	21	12	12	1	**100**	0	36	10	8	0	0	4	43	**100**	42	0	7	12	0	15	11	11	0	**100**
GIIB	14	15	13	4	13	12	11	18	**100**	4	0	0	13	10	14	30	30	0	**100**	23	14	0	0	29	0	17	18	**100**	12	0	0	29	0	13	23	23	0	**100**
GIV	9	12	8	4	35	3	15	15	**100**	12	0	0	19	0	21	24	24	0	**100**	0	16	14	0	32	0	37	0	**100**	12	0	0	9	0	32	23	23	0	**100**
GV	4	19	13	0	29	3	3	29	**100**	18	0	1	15	0	23	22	22	0	**100**	2	18	7	0	31	3	2	37	**100**	18	0	1	8	1	34	19	19	0	**100**
LEAR25	3	3	45	6	12	17	9	5	**100**	9	0	0	10	0	25	7	7	42	**100**	0	20	0	0	6	8	48	17	**100**	18	0	0	6	16	20	20	20	0	**100**
LEAR35	6	18	12	4	26	6	19	10	**100**	13	0	0	18	1	17	25	25	0	**100**	2	14	10	2	23	2	33	14	**100**	11	0	0	9	3	27	25	25	0	**100**
MD11GE	5	17	8	5	23	7	25	9	**100**	14	0	0	19	1	14	37	13	1	**100**	6	13	20	2	21	15	18	5	**100**	14	5	10	5	3	30	23	10	0	**100**
MD83	10	13	5	15	25	3	6	23	**100**	24	0	1	8	1	30	18	18	0	**100**	0	13	5	0	23	8	7	45	**100**	19	0	0	8	0	29	21	21	0	**100**
MU3001	6	14	22	1	21	3	17	18	**100**	12	0	0	18	0	18	26	26	0	**100**	0	16	0	0	46	1	12	24	**100**	16	0	0	9	1	26	24	24	0	**100**
SD330	-	-	-	-	-	-	-	-	**-**	-	-	-	-	-	-	-	-	-	**-**	-	-	-	-	-	-	-	-	**-**	-	-	-	-	-	-	-	-	-	**-**
TOTAL	4	17	13	1	28	4	9	24	**100**	18	0	1	14	0	25	22	19	0	**100**	3	18	5	1	28	2	7	35	**100**	18	0	1	8	0	31	24	17	0	**100**

Notes: Totals may not equal 100 due to rounding
31L[k] represents departures on Runway 31L at the intersection of Taxiway K.
Source: Landrum & Brown.

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Table B-9
RUNWAY USE BY INM TYPE AND TIME OF DAY – 2020 (SHOWN IN PERCENTAGES)
John F. Kennedy International Airport

INM Type	Daytime																				Nighttime																			
	Arrivals									Departures											Arrivals									Departures										
	4L	4R	13L	13R	22L	22R	31L	31R	Total	4L	4R	13L	13R	22L	22R	31L	31L[k]	31R	Total	4L	4R	13L	13R	22L	22R	31L	31R	Total	4L	4R	13L	13R	22L	22R	31L	31L[k]	31R	Total
1900D	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
737500	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
737700	4	22	11	1	27	3	15	18	**100**	15	0	0	8	1	22	27	27	0	**100**	5	22	3	3	22	2	23	21	**100**	22	1	0	1	0	23	26	26	0	**100**
737800	5	14	18	1	21	4	17	20	**100**	15	0	0	12	1	20	26	26	0	**100**	3	21	5	1	28	2	13	28	**100**	21	0	0	6	0	32	21	21	0	**100**
74710Q	0	15	19	1	14	3	13	35	**100**	19	0	2	42	3	30	2	2	0	**100**	3	31	4	2	32	6	17	6	**100**	15	0	0	11	0	22	26	26	1	**100**
74720B	6	15	12	0	34	2	4	26	**100**	18	0	1	16	1	25	20	20	0	**100**	4	14	6	3	28	2	9	33	**100**	19	1	1	5	1	33	20	20	1	**100**
747400	3	17	11	0	35	2	7	25	**100**	22	0	1	14	0	38	18	7	0	**100**	6	18	5	0	26	2	8	35	**100**	20	0	1	7	0	33	30	8	1	**100**
7478	3	17	11	0	35	2	7	25	**100**	22	0	1	14	0	38	18	7	0	**100**	6	18	5	0	26	2	8	35	**100**	20	0	1	7	0	33	30	8	1	**100**
757PW	4	15	15	0	29	3	11	22	**100**	17	0	0	13	0	25	22	22	0	**100**	3	20	5	1	29	2	14	27	**100**	19	0	1	7	0	32	21	20	0	**100**
767300	2	16	8	0	36	2	9	26	**100**	17	0	0	16	0	29	27	10	0	**100**	4	21	4	0	29	2	9	30	**100**	18	0	1	7	0	32	32	9	0	**100**
767400	1	14	5	0	41	1	9	28	**100**	21	0	0	16	1	48	10	4	0	**100**	9	12	9	1	24	4	8	32	**100**	20	0	0	9	1	36	27	7	0	**100**
777200	2	20	8	0	40	2	1	28	**100**	24	0	0	13	0	39	18	5	0	**100**	4	20	4	0	25	2	2	43	**100**	18	1	0	9	1	33	29	9	0	**100**
7772LR	2	20	8	0	40	2	1	28	**100**	24	0	0	13	0	39	18	5	0	**100**	4	20	4	0	25	2	2	43	**100**	18	1	0	9	1	33	29	9	0	**100**
777300	2	20	9	0	30	1	1	35	**100**	19	0	0	17	1	27	33	2	0	**100**	0	0	0	0	34	0	3	63	**100**	18	0	1	8	0	38	31	4	0	**100**
7773ER	2	20	9	0	30	1	1	35	**100**	19	0	0	17	1	27	33	2	0	**100**	0	0	0	0	34	0	3	63	**100**	18	0	1	8	0	38	31	4	0	**100**
7878R	2	20	9	0	30	1	1	35	**100**	19	0	0	17	1	27	33	2	0	**100**	0	0	0	0	34	0	3	63	**100**	18	0	1	8	0	38	31	4	0	**100**
A300B4-203	4	37	4	0	32	3	5	16	**100**	3	0	76	1	4	3	7	7	0	**100**	10	29	1	12	24	2	3	20	**100**	12	6	1	5	4	33	19	19	0	**100**
A310-304	12	11	8	4	12	38	2	15	**100**	13	0	3	6	19	19	34	5	2	**100**	0	32	3	0	28	0	2	35	**100**	25	0	6	3	0	27	20	19	0	**100**
A319-131	3	18	14	0	30	3	9	22	**100**	19	0	0	12	0	25	22	22	0	**100**	4	18	7	0	32	1	3	35	**100**	19	1	1	7	1	32	20	20	0	**100**
A320-232	5	18	16	0	27	3	5	25	**100**	17	0	0	13	0	22	24	24	0	**100**	4	18	5	0	28	2	2	40	**100**	20	0	1	6	0	32	21	21	0	**100**
A321-232	1	24	13	4	33	2	2	22	**100**	20	0	0	14	1	29	18	18	0	**100**	2	13	6	8	25	1	3	42	**100**	17	0	1	7	0	31	22	22	1	**100**
A330-301	1	1	1	4	4	31	51	8	**100**	21	1	8	8	11	30	9	8	4	**100**	4	21	4	1	27	2	6	34	**100**	19	2	0	20	0	1	31	28	0	**100**
A330-343	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
A340-211	3	13	9	0	33	2	2	37	**100**	25	0	0	13	0	43	15	4	0	**100**	5	23	3	0	24	3	2	41	**100**	18	0	0	9	0	35	26	12	0	**100**
A350	2	20	9	0	30	1	1	35	**100**	19	0	0	17	1	27	33	2	0	**100**	0	0	0	0	34	0	3	63	**100**	18	0	1	8	0	38	31	4	0	**100**
A380-841	3	17	11	0	35	2	7	25	**100**	22	0	1	14	0	38	18	7	0	**100**	6	18	5	0	26	2	8	35	**100**	20	0	1	7	0	33	30	8	1	**100**
A380-861	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BEC58P	7	21	7	3	23	11	19	9	**100**	17	0	0	13	0	34	12	12	13	**100**	11	17	4	1	15	9	6	38	**100**	29	0	0	1	0	58	4	4	4	**100**
CIT3	2	17	5	8	30	7	26	4	**100**	13	0	0	15	0	18	26	26	1	**100**	0	6	0	0	6	8	28	51	**100**	37	0	0	42	0	7	8	8	0	**100**
CLREGJ	4	19	13	0	29	3	3	29	**100**	18	0	1	15	0	23	22	22	0	**100**	2	18	7	0	31	3	2	37	**100**	18	0	1	8	1	34	19	19	0	**100**
CNA208	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CNA441	6	11	8	10	21	2	16	26	**100**	14	0	0	19	0	32	17	17	1	**100**	7	15	0	0	35	0	22	20	**100**	8	0	0	5	0	12	37	37	1	**100**
CNA500	3	7	19	5	18	21	17	11	**100**	6	0	0	23	0	16	27	27	0	**100**	0	20	18	0	14	0	23	25	**100**	0	0	0	35	0	44	11	11	0	**100**
CNA750	6	12	13	2	32	6	12	18	**100**	11	0	0	16	0	24	24	24	0	**100**	0	17	0	0	43	0	30	11	**100**	11	0	0	5	0	35	25	25	0	**100**
CRJ701	4	19	13	0	29	3	3	29	**100**	18	0	1	15	0	23	22	22	0	**100**	2	18	7	0	31	3	2	37	**100**	18	0	1	8	1	34	19	19	0	**100**
CRJ900	4	19	13	0	29	3	3	29	**100**	18	0	1	15	0	23	22	22	0	**100**	2	18	7	0	31	3	2	37	**100**	18	0	1	8	1	34	19	19	0	**100**
CRJ9-ER	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DC1010	4	24	11	0	44	2	1	13	**100**	6	0	2	3	1	8	40	40	0	**100**	3	25	3	0	20	3	3	43	**100**	19	0	5	2	0	28	23	23	0	**100**
DC870	6	22	8	1	29	0	3	31	**100**	33	3	4	28	7	6	9	9	1	**100**	6	13	10	2	18	3	5	44	**100**	13	0	5	6	2	28	22	22	2	**100**
DHC6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DHC830	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
EMB135	4	17	14	0	25	3	9	27	**100**	18	0	0	16	0	23	21	21	1	**100**	2	19	6	0	24	3	5	40	**100**	17	0	0	13	1	36	17	17	0	**100**
EMB145	4	16	17	1	25	3	14	19	**100**	17	0	0	17	0	23	21	21	0	**100**	0	21	7	0	30	1	10	30	**100**	19	0	0	8	0	35	19	19	0	**100**
EMB170	5	18	14	1	28	3	12	19	**100**	18	0	0	15	0	26	20	20	0	**100**	2	22	5	1	26	1	11	31	**100**	17	2	0	8	3	37	16	16	1	**100**
EMB175	5	18	14	1	28	3	12	19	**100**	18	0	0	15	0	26	20	20	0	**100**	2	22	5	1	26	1	11	31	**100**	17	2	0	8	3	37	16	16	1	**100**
EMB190	5	18	14	1	28	3	12	19	**100**	18	0	0	15	0	26	20	20	0	**100**	2	22	5	1	26	1	11	31	**100**	17	2	0	8	3	37	16	16	1	**100**
FAL20	6	12	14	4	24	11	22	7	**100**	11	1	1	22	0	26	20	20	0	**100**	0	18	14	0	13	0	36	19	**100**	17	0	0	16	0	23	22	22	0	**100**
GASEPV	13	17	5	2	28	9	19	8	**100**	29	0	2	22	0	21	12	12	1	**100**	0	36	10	8	0	0	4	43	**100**	43	0	7	12	0	15	11	11	0	**100**
GIIB	14	15	13	4	13	11	11	18	**100**	4	0	0	13	10	14	30	30	0	**100**	23	14	0	0	29	0	16	18	**100**	12	0	0	29	0	13	23	23	0	**100**
GIV	9	12	8	4	35	3	15	15	**100**	12	0	0	19	0	21	24	24	0	**100**	0	16	14	0	32	0	37	0	**100**	12	0	0	9	0	32	23	23	0	**100**
GV	4	19	13	0	29	3	3	29	**100**	18	0	1	15	0	23	22	22	0	**100**	2	18	7	0	31	3	2	37	**100**	18	0	1	8	1	34	19	19	0	**100**
LEAR25	3	3	45	6	12	17	9	5	**100**	9	0	0	10	0	25	7	7	42	**100**	0	20	0	0	6	8	48	17	**100**	18	0	0	6	16	21	20	20	0	**100**
LEAR35	6	18	12	4	26	5	19	10	**100**	13	0	0	17	1	17	25	25	0	**100**	2	14	11	2	23	2	33	14	**100**	11	0	0	9	3	28	25	25	0	**100**
MD11GE	6	17	8	5	23	7	25	9	**100**	14	0	0	19	1	14	37	13	1	**100**	6	13	20	2	21	15	18	5	**100**	14	5	10	5	3	31	23	10	0	**100**
MD83	10	13	6	15	25	3	6	23	**100**	24	0	1	8	1	30	18	18	0	**100**	0	13	5	0	23	8	7	45	**100**	20	0	0	8	0	29	21	21	0	**100**
MU3001	6	14	22	1	21	3	17	18	**100**	12	0	0	18	0	18	26	26	0	**100**	0	16	0	0	46	1	12	24	**100**	16	0	0	9	1	26	24	24	0	**100**
SD330	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	4	17	13	1	28	4	10	24	**100**	18	0	1	14	1	25	22	19	0	**100**	3	18	5	2	28	2	7	35	**100**	18	0	1	8	0	31	24	17	0	**100**

Notes: Totals may not equal 100 due to rounding
31L[k] represents departures on Runway 31L at the intersection of Taxiway K.
Source: Landrum & Brown.

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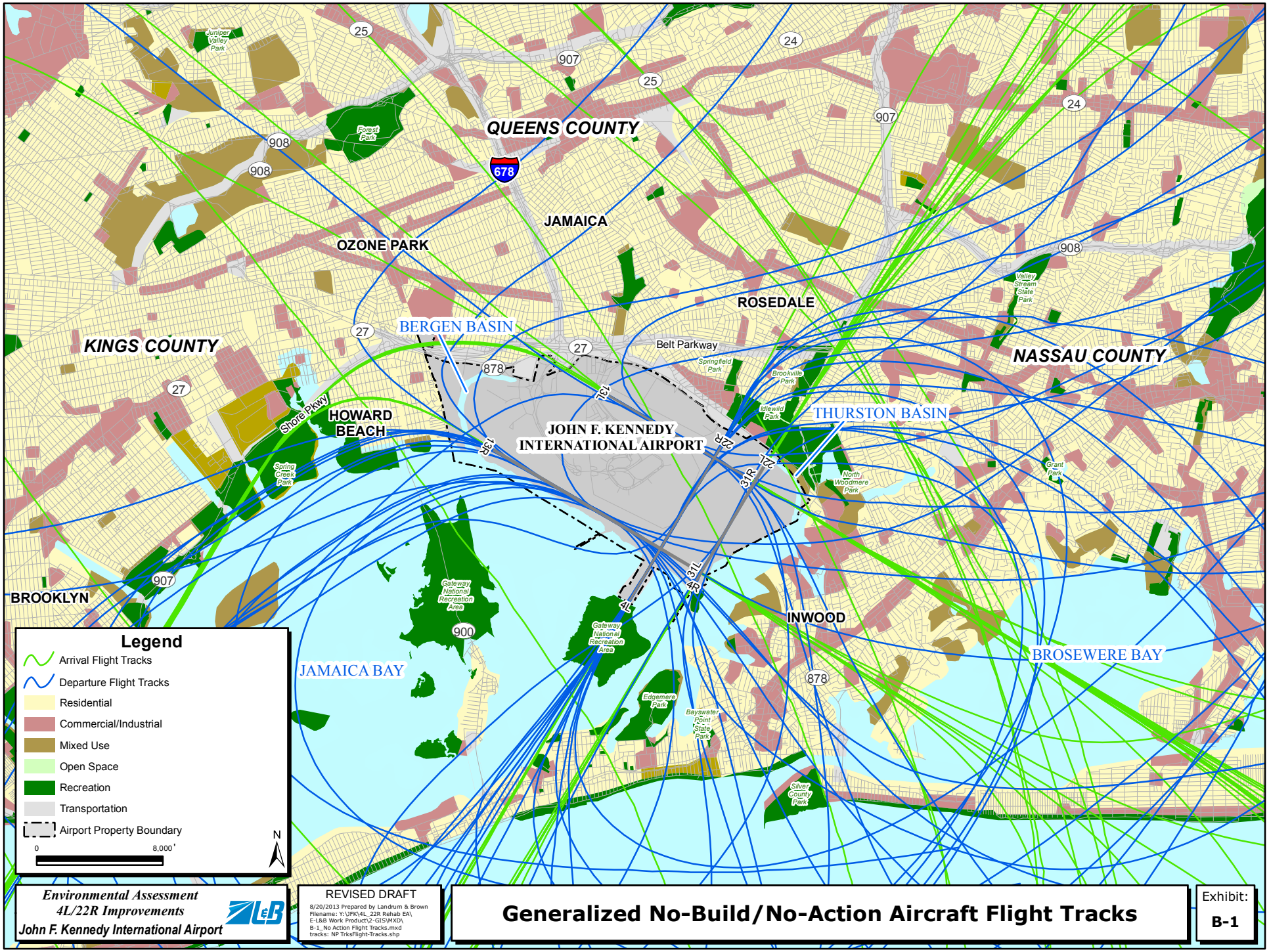

Environmental Assessment
4L/22R Improvements
John F. Kennedy International Airport

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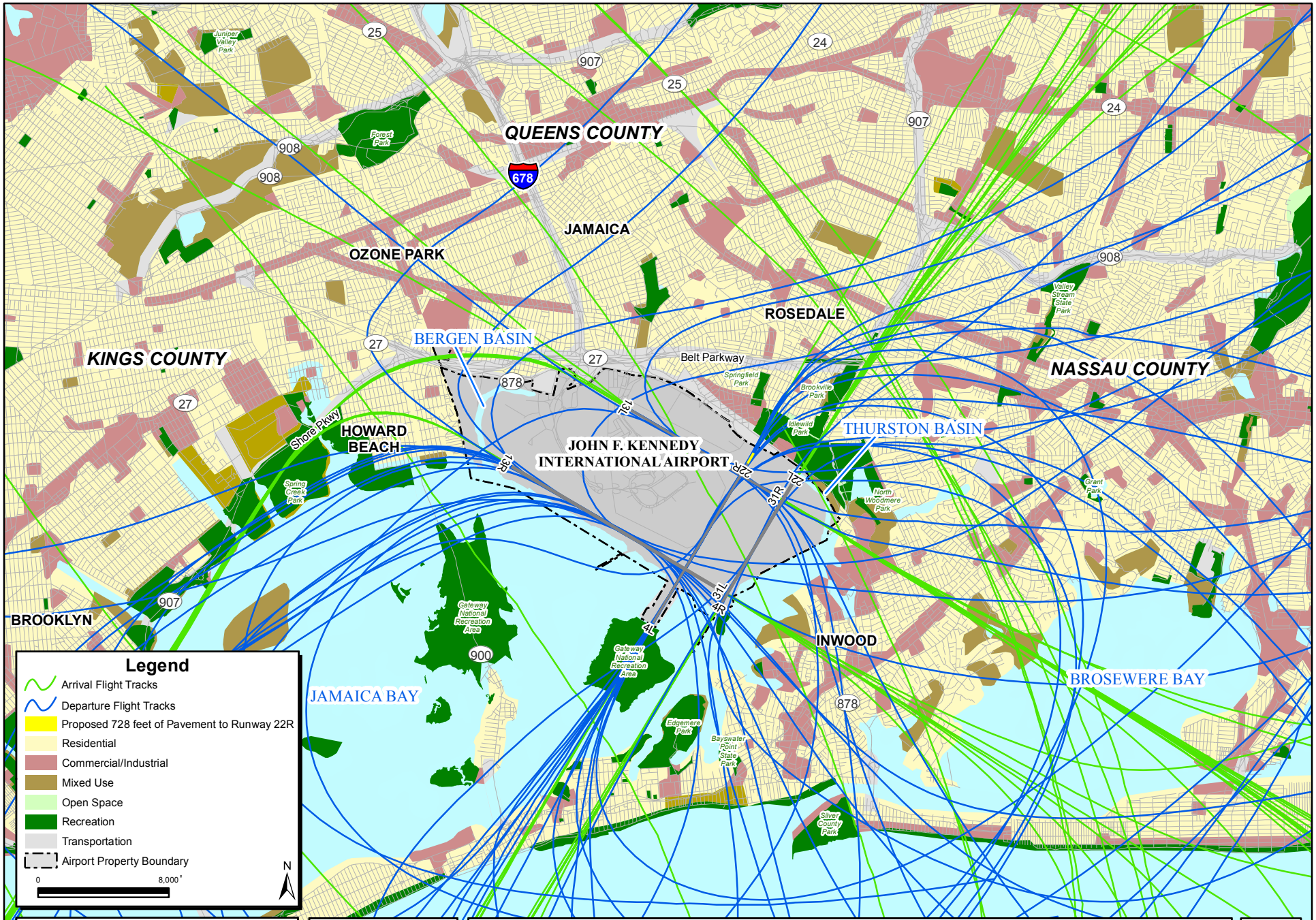
E-L&B Work Product\2-GIS\MXD\
B-1_No Action Flight Tracks.mxd
tracks: NP TrksFlight-Tracks.shp

Generalized No-Build/No-Action Aircraft Flight Tracks

Exhibit:
B-1

BACK OF EXHIBIT B-1, GENERALIZED NO-BUILD/NO-ACTION AIRCRAFT FLIGHT TRACKS



Environmental Assessment
4L/22R Improvements
John F. Kennedy International Airport

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8/20/2013 Prepared by Landrum & Brown
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E-L&B Work Product\2-GIS\MXD\
B-2_ Proposed Action Flight Tracks.mxd
tracks: WPTracksFlight-Tracks.shp

Generalized Proposed Action Aircraft Flight Tracks

Exhibit:
B-2

BACK OF EXHIBIT B-2, GENERALIZED PROPOSED ACTION AIRCRAFT FLIGHT TRACKS

RESULTS

Exhibit B-3, *Existing (2012/2013) Noise Exposure Contour*, shows the Existing 2012/2013 Noise Exposure Contour. **Exhibit B-4, *2015 No-Build/No-Action vs. 2015 Proposed Action Noise Exposure Contour*** and **Exhibit B-5, *2020 No-Build/No-Action vs. 2020 Proposed Action Noise Exposure Contour*** show comparisons of the noise exposure contours modeled for the No-Build/No-Action and Proposed Action scenarios at the 2015 and 2020 activity levels, respectively. These two exhibits show the 65, 70, and 75 dB DNL contours for both scenarios, overlaid atop one another. As shown, the changes in noise contours associated with the Proposed Action would be minimal. As illustrated, the 65 DNL contour shifts slightly as compared to the No-Build/No-Action 65 DNL contour.

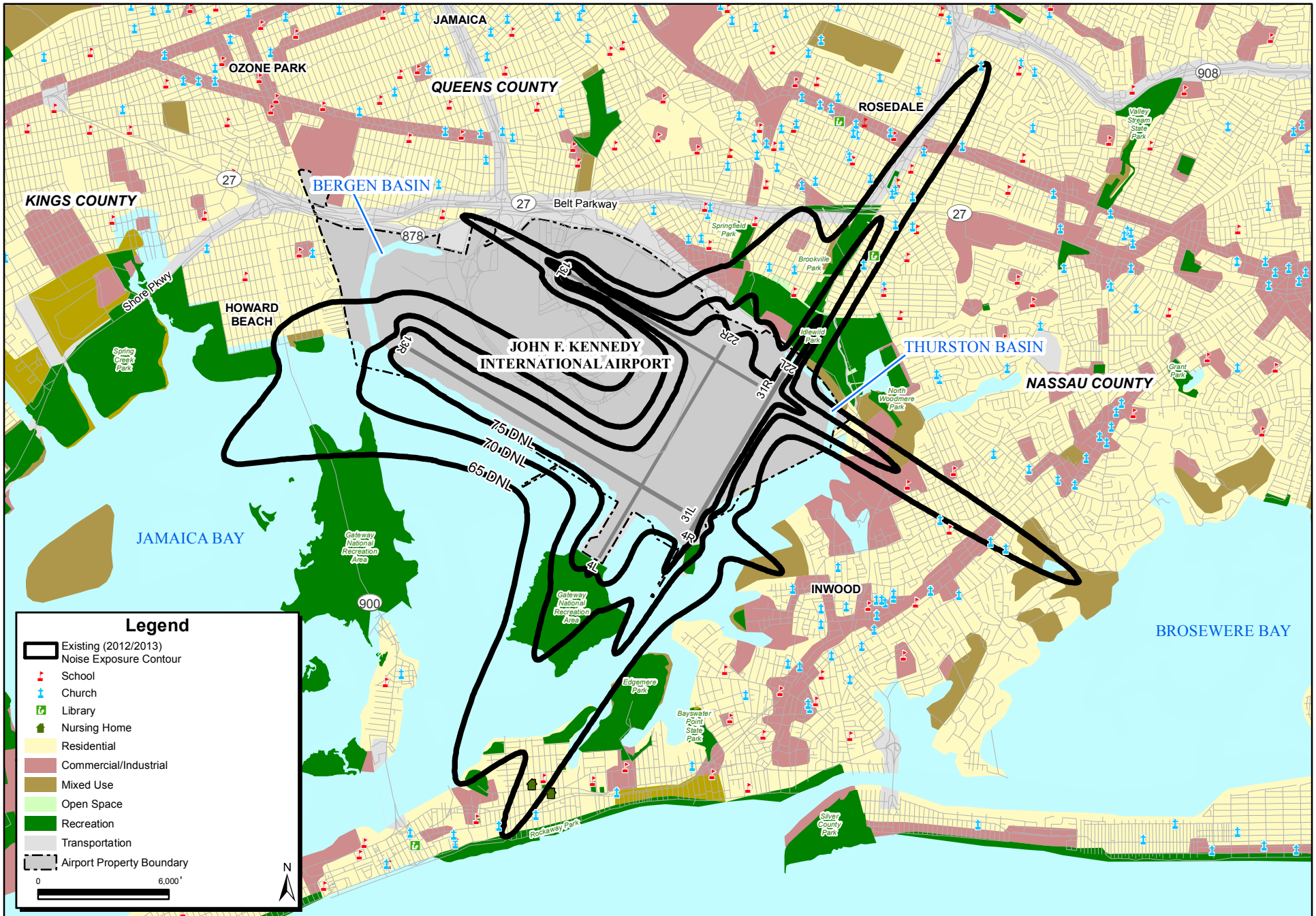
Along the extended centerline to the north of Runway 4L/22R, the contour shifts to the north approximately 150-feet to a point just near 141st Avenue and widens slightly due to the proposed new location for the start of takeoff roll for aircraft departing on Runway 22R. To the south of Runway 4L/22R, the Proposed Action noise contour is smaller compared to the No-Build/No Action contour due to the proposed Runway 4L arrival threshold being displaced 460 feet to the north.

Table B-10, Noise Exposure Area, Housing Units, and Population, shows a tabular comparison of the land area and residential population that are estimated to be contained within the 65, 70, and 75 dB DNL noise contours for the No-Build/ No-Action and Proposed Action scenarios for the 2015 and 2020 activity levels that were evaluated in this analysis. The Existing (2012/2013) conditions land area and residential population that are estimated to be contained within the 65, 70, and 75 dB DNL noise contours are also shown. It is important to note, the Proposed Action would not cause airport operations to increase. The forecasted increase in operations is anticipated to occur with or without the Proposed Action.

As mentioned previously, if any noise sensitive land uses within the DNL 65 dB noise contour would experience increases in noise of DNL 1.5 dB or greater as a result of the Proposed Action, a significant noise impact would occur. **Exhibit B-6, *2015 Areas of DNL 1.5 dB Increase with in the 65 DNL*** and **Exhibit B-7, *2020 Areas of DNL 1.5 dB Increase with in the 65 DNL*** show the areas of change of 1.5 dB DNL between the No-Build/No-Action and Proposed Action scenarios for 2015 and 2020 activity levels, respectively. As shown, the Proposed Action is not expected to result in any *significant* impacts in noise-sensitive land uses around the Airport.

The area of change of 1.5 dB DNL associated with 2015 Proposed Action is marked by the purple change contour line. The DNL 1.5 dB change contours associated with 2015 Proposed Action have a distinct shape that is directly related to the relocation of the Runway 22R departure starting point. This heart-shaped pattern is the typical noise pattern that is found behind aircraft as they start their takeoff roll with the most noise radiating outward at a 30 to 45 degree angle from the tail of the aircraft. The relocation of the start of takeoff roll shifts this pattern of noise and thus creates change contours of a similar shape.

As Exhibit B-6 illustrates, the area of change of 1.5 dB DNL associated with 2015 Proposed Action area is largely limited to Airport property and only extends over compatible land uses (commercial/industrial) immediately adjacent to Rockaway Boulevard and small areas of land designated as Idlewild Park. These portions of the park include wooded and vacant areas which are not used for active recreation activities. As shown in Exhibit B-7, the size and shape of the 1.5 dB DNL change contours associated with the 2020 Proposed Action is similar to the 2015 Proposed Action and does not include any noise-sensitive land uses.



Environmental Assessment
4L/22R Rehab
John F. Kennedy International Airport

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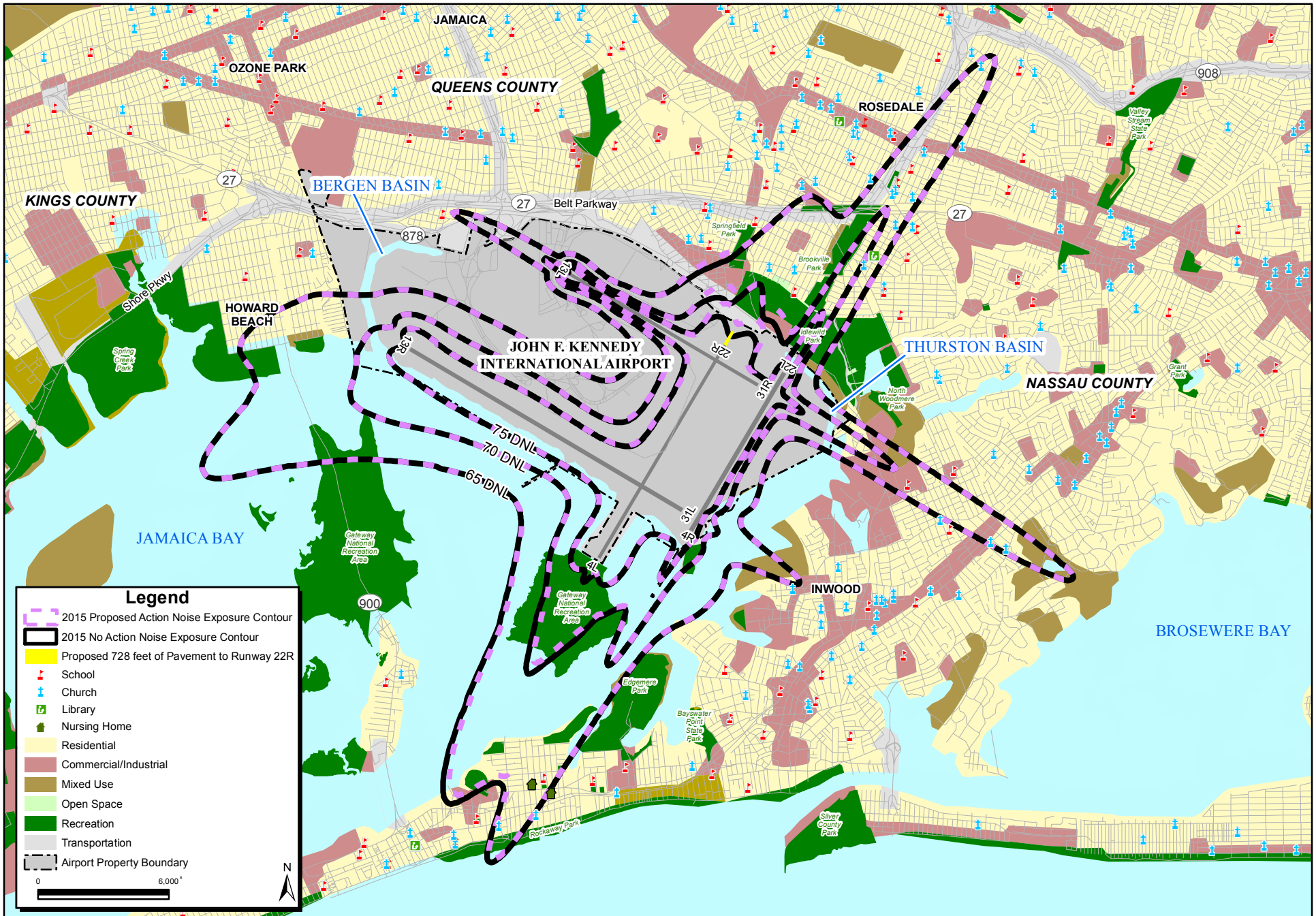
Contour: JFK13dNoise-Contours

Existing (2012/2013) Noise Exposure Contour

Exhibit:
B-3

BACK OF EXHIBIT B-3, EXISTING 2012/2013 NOISE EXPOSURE CONTOUR



Environmental Assessment
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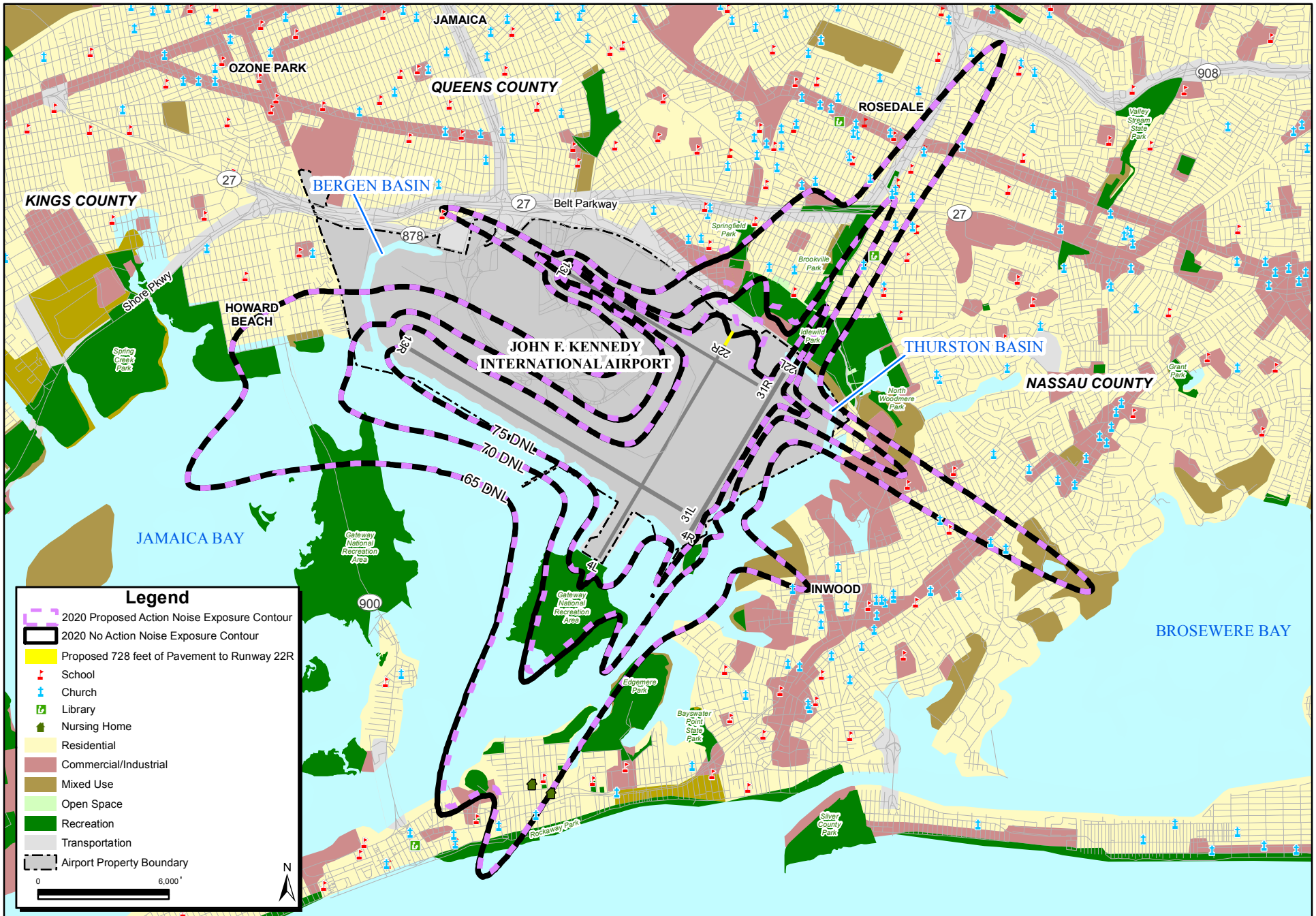
8/20/2013 Prepared by Landrum & Brown
Filename: Y:\JFK\4L_22R Rehab EA\E-L&B Work Product\2-GIS\MXD\B-4_2015 NA vs 2015 PA.mxd
contour: JFK15NPdNoise-Contours/
JFK15WPdNoise-Contours

2015 No-Build/No-Action vs.
2015 Proposed Action Noise Exposure Contour

Exhibit:
B-4

BACK OF EXHIBIT B-4, 2015 NO-ACTION/NO-BUILD VS. PROPOSED ACTION NOISE EXPOSURE CONTOUR



Environmental Assessment
4L/22R Rehab
John F. Kennedy International Airport

REVISED DRAFT

8/20/2013 Prepared by Landrum & Brown
Filename: Y:\JFK\4L_22R Rehab EA\E-L&B Work Product\2-GIS\MXD\B-5_2020 NA vs 2020 PA.mxd
contour: JFK20NPdNoise-Contours/
JFK20WPdNoise-Contours

2020 No-Build/No-Action vs.
2020 Proposed Action Noise Exposure Contour

Exhibit:
B-5

BACK OF EXHIBIT B-5, 2020 NO-ACTION/NO-BUILD VS. PROPOSED ACTION NOISE EXPOSURE CONTOUR

Table B-10
NOISE EXPOSURE AREA, HOUSING UNITS, AND POPULATION
John F. Kennedy International Airport

2012/2013 Activity Level												
DNL	No-Build/No-Action				Proposed Action				Difference Between No-Build/No-Action and Proposed Action			
	Square Miles	Housing Units	Population	NSF	Square Miles	Housing Units	Population	NSF	Square Miles	Housing Units	Population	NSF
65-70	7.59	9,399	29,482	18	**The Proposed Action was not evaluated for the 2012/2013 activity level.**							
70-75	2.90	801	2,603	0								
75+	2.41	0	0	0								
Total	**12.90**	**10,200**	**32,085**	**18**								

2015 Activity Level												
DNL	No-Build/No-Action				Proposed Action				Difference Between No-Build/No-Action and Proposed Action			
	Square Miles	Housing Units	Population	NSF	Square Miles	Housing Units	Population	NSF	Square Miles	Housing Units	Population	NSF
65-70	8.35	11,952	36,668	20	8.27	11,909	36,574	20	-0.08	-43	-94	**0**
70-75	2.96	876	2,851	0	2.92	876	2,851	0	-0.04	0	0	**0**
75+	2.88	0	0	0	2.92	0	0	0	0.04	0	0	**0**
Total	**14.19**	**12,828**	**39,519**	**20**	**14.11**	**12,785**	**39,425**	**20**	**-0.08**	**-43**	**-94**	**0**

2020 Activity Level												
DNL	No-Build/No-Action				Proposed Action				Difference Between No-Build/No-Action and Proposed Action			
	Square Miles	Housing Units	Population	NSF	Square Miles	Housing Units	Population	NSF	Square Miles	Housing Units	Population	NSF
65-70	8.97	13,747	41,545	21	8.89	13,655	41,292	21	-0.08	-92	-253	**0**
70-75	3.22	1,009	3,286	0	3.17	1,008	3,286	0	-0.05	0	0	**0**
75+	3.05	0	0	0	3.10	0	0	0	0.05	0	0	**0**
Total	**15.24**	**14,756**	**44,831**	**21**	**15.16**	**14,663**	**44,578**	**21**	**-0.08**	**-92**	**-253**	**0**

NSF = Noise-Sensitive Facilities
Source: New York City Department of City Planning, 2013; U.S. Census Bureau, 2010; Landrum & Brown, 2013.

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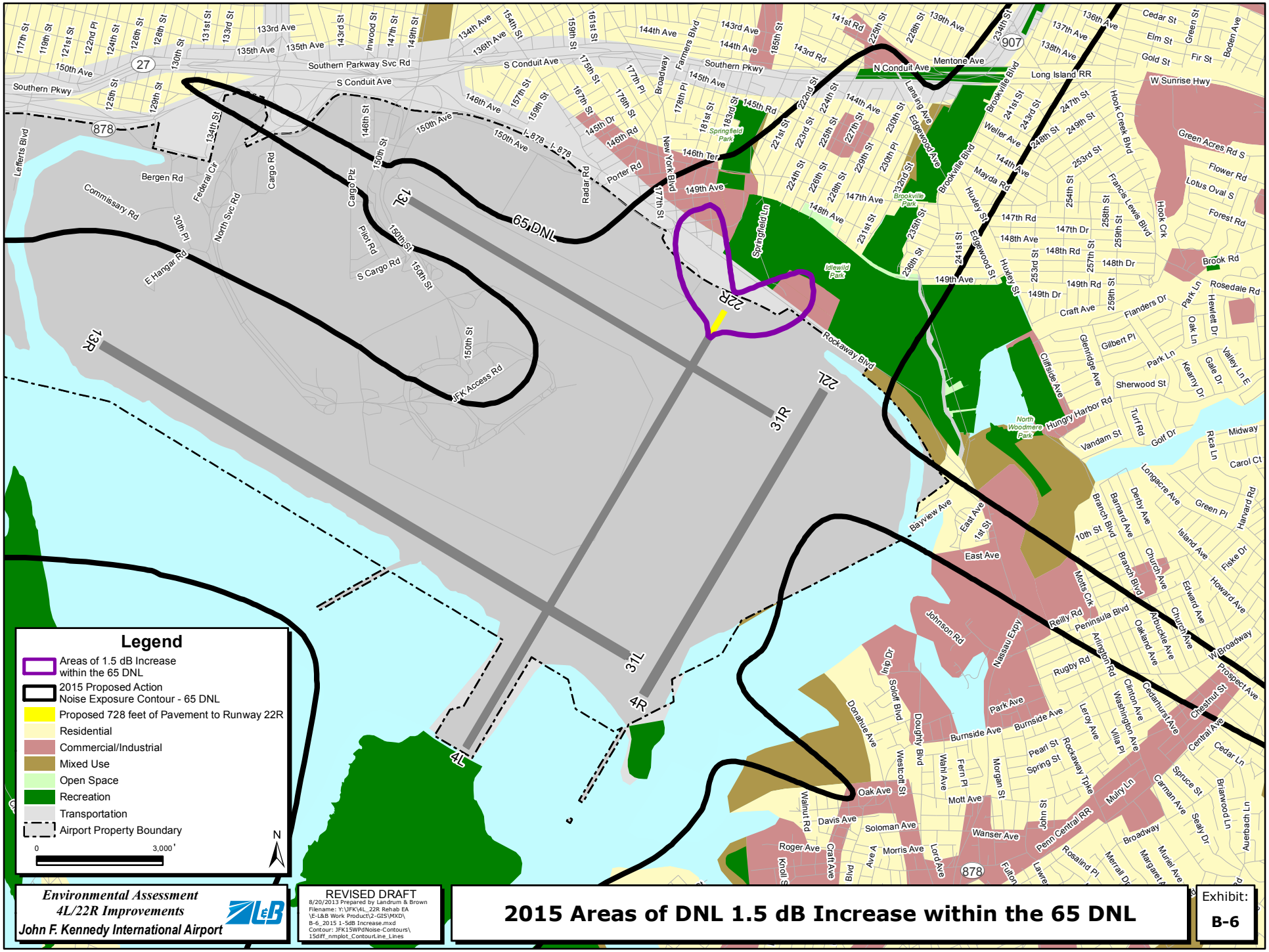
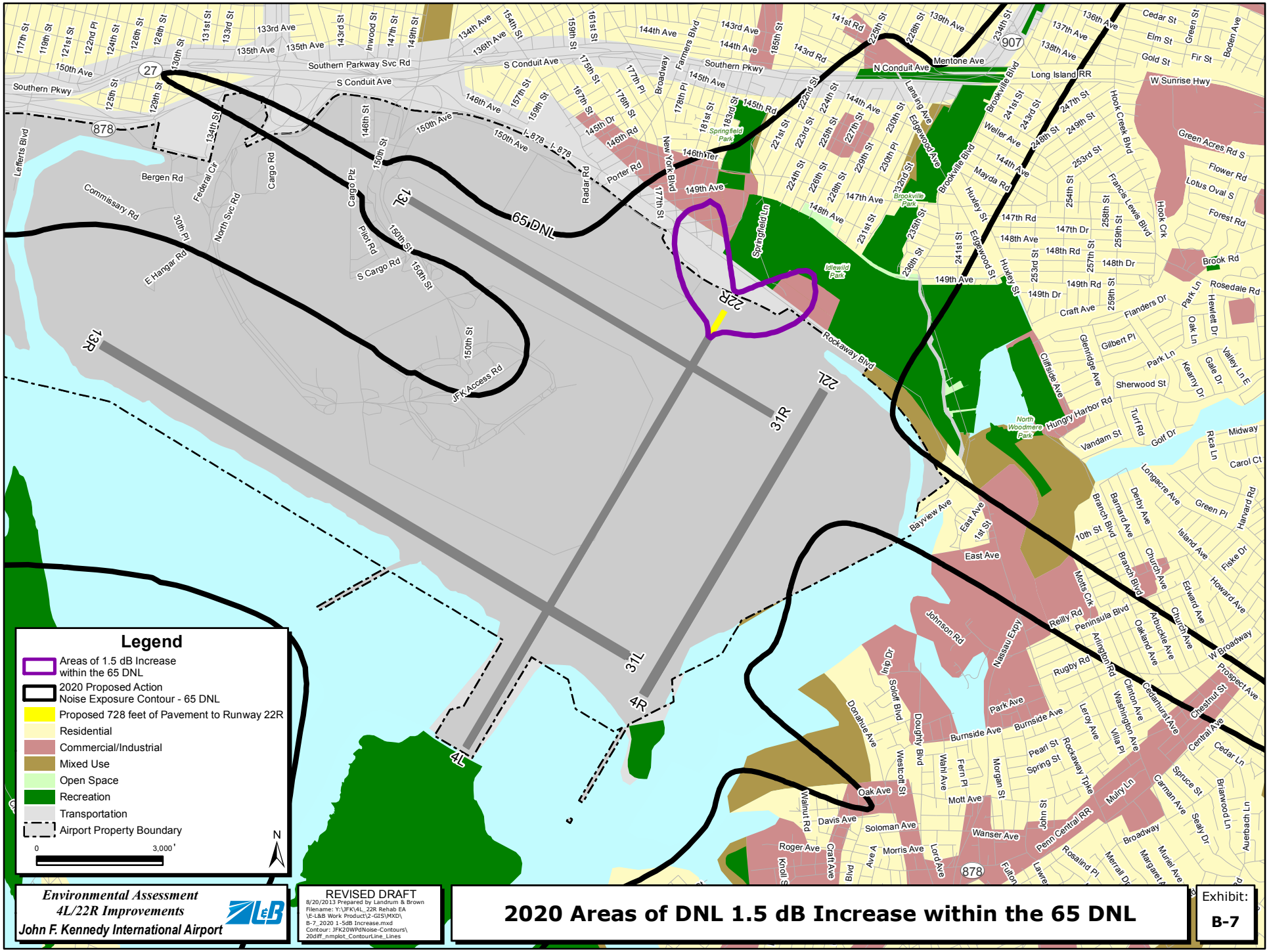

Legend
Areas of 1.5 dB Increase within the 65 DNL
2015 Proposed Action Noise Exposure Contour - 65 DNL
Proposed 728 feet of Pavement to Runway 22R
Residential
Commercial/Industrial
Mixed Use
Open Space
Recreation
Transportation
Airport Property Boundary
0
3,000'
N
65 DNL
13L
13R
22R
22L
31R
31L
4R
4L
Southern Parkway Svc Rd
S Conduit Ave
N Conduit Ave
Southern Pkwy
Mentone Ave
Long Island RR
W Sunrise Hwy
Rockaway Blvd
JFK Access Rd
Springfield Park
Brookville Park
Idlewild Park
North Woodmere Park
Springfield Ln
Brookville Blvd
Nassau Expy
Penn Central RR
Environmental Assessment
4L/22R Improvements
John F. Kennedy International Airport
REVISED DRAFT
8/20/2013 Prepared by Landrum & Brown
Filename: Y:\JFK\4L_22R Rehab EA\E-L&B Work Product\2-GIS\MXD\B-6_2015 1-5dB Increase.mxd
Contour: JFK15WPdNoise-Contours\15diff_nmplot_ContourLine_Lines
2015 Areas of DNL 1.5 dB Increase within the 65 DNL
Exhibit:
B-6

BACK OF EXHIBIT B-6, 2015 AREAS OF DNL 1.5 DB INCREASE WITH IN THE 65 DNL



Environmental Assessment
4L/22R Improvements
John F. Kennedy International Airport

REVISED DRAFT
8/20/2013 Prepared by Landrum & Brown
Filename: Y:\JFK\4L_22R Rehab EA \E-L&B Work Product\2-GIS\MXD\ B-7_2020 1-5dB Increase.mxd
Contour: JFK20WPdNoise-Contours\ 20diff_nmplot_ContourLine_Lines

2020 Areas of DNL 1.5 dB Increase within the 65 DNL

Exhibit:
B-7

BACK OF EXHIBIT B-7, 2020 AREAS OF DNL 1.5DB INCREASE WITH IN THE 65 DNL

NOISE EXPOSURE AT POTENTIAL SECTION 4(f) RESOURCES

An analysis of noise levels at potential Section 4(f) resources was conducted to determine the noise level band that various potential Section 4(f) resources were within for each Alternative. A comparison of the change in noise levels between the No-Build/No-Action and the Proposed Action for 2015 and 2020 conditions is shown in **Table B-11, *Summary of Noise Exposure at Potential Section 4(f) Resources***. As shown in Table B-11, there are 21 potential Section 4(f) resources located within the 65+ DNL of the 2015 No-Build/No-Action noise exposure contour. Each of these 21 resources continues to be within the same contour band under both the 2015 Proposed Action and the 2020 Proposed Action noise exposure contours.

Table B-11
SUMMARY OF NOISE EXPOSURE AT POTENTIAL SECTION 4(F) RESOURCES
John F. Kennedy International Airport

RESOURCE NAME	EXISTING (2012/2013) BASELINE	2015 NO BUILD/NO ACTION	2015 WITH PROJECT	2020 NO BUILD/NO ACTION	2020 WITH PROJECT
Gateway National Rec Area	75+ DNL	75+ DNL	75+ DNL	75+ DNL	75+ DNL
Idlewild Park	75+ DNL	75+ DNL	75+ DNL	75+ DNL	75+ DNL
Brookville Park (South)	70-75 DNL	75+ DNL	75+ DNL	75+ DNL	75+ DNL
Jamaica Bay Park	75+ DNL	75+ DNL	75+ DNL	75+ DNL	75+ DNL
Brookville Park (North)	70-75 DNL	70-75 DNL	70-75 DNL	70-75 DNL	70-75 DNL
Edgemere Park	65-70 DNL	65-70 DNL	65-70 DNL	65-70 DNL	65-70 DNL
Frank M Charles Memorial Park	65-70 DNL	65-70 DNL	65-70 DNL	65-70 DNL	65-70 DNL
Spring Creek Park	65-70 DNL	65-70 DNL	65-70 DNL	65-70 DNL	65-70 DNL
Springfield Park (North)	65-70 DNL	65-70 DNL	65-70 DNL	65-70 DNL	65-70 DNL
Belt Parkway	65-70 DNL	65-70 DNL	65-70 DNL	65-70 DNL	65-70 DNL
Hook Creek Wildlife Sanctuary	65-70 DNL	65-70 DNL	65-70 DNL	65-70 DNL	65-70 DNL
Springfield Park (South)	65-70 DNL	65-70 DNL	65-70 DNL	65-70 DNL	65-70 DNL
Almeda Playground	65-70 DNL	65-70 DNL	65-70 DNL	65-70 DNL	65-70 DNL
Dubos Point Wildlife Sanctuary	65-70 DNL	65-70 DNL	65-70 DNL	65-70 DNL	65-70 DNL
Brant Point Wildlife Sanctuary	65-70 DNL	65-70 DNL	65-70 DNL	65-70 DNL	65-70 DNL
Vernam Barbadoes Peninsula	65-70 DNL	65-70 DNL	65-70 DNL	65-70 DNL	65-70 DNL
Thursby Basin Park	65-70 DNL	65-70 DNL	65-70 DNL	65-70 DNL	65-70 DNL
Rockaway Beach and Boardwalk		65-70 DNL	65-70 DNL	65-70 DNL	65-70 DNL
Mentone Playground	65-70 DNL	65-70 DNL	65-70 DNL	65-70 DNL	65-70 DNL
Laurelton Playground	65-70 DNL	65-70 DNL	65-70 DNL	65-70 DNL	65-70 DNL
JFK Terminal 5	65-70 DNL	65-70 DNL	65-70 DNL	65-70 DNL	65-70 DNL

Source: Landrum & Brown, 2012.

CONCLUSION

The Proposed Action would not significantly change noise exposure over noise sensitive land uses in the vicinity of the Airport. The results of the preceding analysis indicate that the levels of noise change associated with the 2015 and 2020 Proposed Action would be below FAA's threshold of significance of a 1.5 dB DNL increase over a noise sensitive land use within the 65 DNL level. In fact, the 1.5 dB DNL change area would be entirely contained over Airport property and commercial-industrial land uses and vacant/wooded areas immediately adjacent to the Airport.

U.S. Department
of Transportation
**Federal Aviation
Administration**

Office of Environment and Energy

800 Independence Ave., S.W.
Washington, D.C. 20591

March 9, 2012

Marie C. Jenet
Environmental Specialist
Federal Aviation Administration
New York Airports District Office
600 Old Country Road, Suite 446
Garden City, New York 11530

Dear Marie,

The Office of Environment and Energy (AEE) has reviewed the proposed non-standard Integrated Noise Model (INM) aircraft substitutions for the Environmental Assessment (EA) for John F. Kennedy International Airport (JFK).

The Port Authority of New York and New Jersey is preparing an EA for improvements to Runway 4L/22R at JFK. As part of this process noise exposure contours will be prepared for 2015 and 2020. The operations forecasts for these years contain three aircraft that are not currently modeled in the INM; the A350-800, the A350-900, and the B747-800. The consultant preparing the noise exposure contours has proposed using the INM 777200 as a substitute for the A350-800 and -900 aircraft, and the INM 747400 as a substitute for the B747-800 aircraft.

AEE approves the proposed INM substitution aircraft for the JFK EA for improvements to Runway 4L/22R. Please understand that this approval is limited to this particular EA for JFK. Any additional projects or non-standard INM input at JFK or any other site will require separate approval.

Sincerely,

Rebecca Cointin, Acting Manager
AEE/Noise Division

cc: Jim Byers, APP-400

Appendix C

APPENDIX C
AIR QUALITY

This appendix presents an assessment of the potential impacts to air quality from the Proposed Action and the No-Build/No-Action. The following subsections discuss the relevant Federal and state air quality review requirements. Also presented are the results of the air quality analysis for the Existing Conditions (2012/2013) and conditions for year 2015 and 2020 under both the No-Build/No-Action and the Proposed Action.

The Airport is located within Queens County, New York, which is included in the New Jersey-New York-Connecticut Intrastate Air Quality Control Region (AQCR).[1] The New Jersey-New York-Connecticut Intrastate AQCR does not meet the Federal standard for the 8-hour concentration of ozone or the Federal standard for the 24-hour and annual arithmetic mean concentrations of fine particulate matter ($PM_{2.5}$).[2] In the past, Queens County was designated as nonattainment for carbon monoxide (CO); however, on May 20, 2002, the U.S. Environmental Protection Agency (USEPA) determined the area had attained the CO standard and the region was redesignated to attainment for CO. The area now operates under a maintenance plan for CO.

C.1 REGULATORY BACKGROUND

This section evaluates the conformity of the Proposed Action with the New York State Implementation Plans (SIP) by assessing the potential impact of the Proposed Action on state efforts to achieve and maintain compliance with the National Ambient Air Quality Standards (NAAQS) established under Title I of the Clean Air Act (CAA). In addition to these CAA requirements, there are state regulations that may apply to airport projects, including an Indirect Source Review (ISR). These Federal and state air quality requirements are discussed below.

C.1.1 NATIONAL AMBIENT AIR QUALITY STANDARDS

The CAA, including the 1990 Amendments, provides for the establishment of standards and programs to evaluate, achieve, and maintain acceptable air quality in the U.S. Under the CAA, the USEPA established a set of standards, or criteria, for six pollutants determined to be potentially harmful to human health and welfare.[3]

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1 U.S. Environmental Protection Agency (USEPA), 40 CFR Part 81, Section 81.13, *New Jersey-New York-Connecticut Intrastate Air Quality Control Region* (December 23, 1980).

2 U.S. Environmental Protection Agency (USEPA), Green Book Nonattainment Status for Each County by Year as of December 14, 2012.

3 USEPA, Code of Federal Regulations, Title 40, Part 50 (40 CFR Part 50) *National Primary and Secondary Ambient Air Quality Standards (*NAAQS), July 2011.

The USEPA considers the presence of the following six criteria pollutants to be indicators of air quality:

- Ozone (O_3);
- Carbon monoxide (CO);
- Nitrogen dioxide (NO_2);
- Particulate matter (PM_{10} and $PM_{2.5}$);[4]
- Sulfur dioxide (SO_2); and,
- Lead (Pb).[5]

The standards for the criteria pollutants, known as the NAAQS, are summarized in **Table C-1, *National Ambient Air Quality Standards (NAAQS)***. For each of the criteria pollutants, the USEPA established primary standards intended to protect public health, and secondary standards for the protection of other aspects of public welfare, such as preventing materials damage, preventing crop and vegetation damage, and assuring good visibility. Areas of the country where air pollution levels consistently exceed these standards may be designated nonattainment by the USEPA.

A non-attainment area is a homogeneous geographical area[6] (usually referred to as an air quality control region) that is in violation of one or more NAAQS and has been designated as nonattainment by the USEPA as provided for under the CAA. Some regulatory provisions, for instance the CAA conformity regulations, apply only to areas designated as nonattainment or maintenance.

A maintenance area describes the air quality designation of an area previously designated nonattainment by the USEPA and subsequently redesignated attainment after emissions are reduced. Such an area remains designated as maintenance for a period up to 20 years at which time the state can apply for redesignation to attainment, provided that the NAAQS were sufficiently maintained throughout the maintenance period.

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[4] PM_{10} and $PM_{2.5}$ are airborne inhalable particles that are less than ten micrometers (coarse particles) and less than 2.5 micrometers (fine particles) in diameter, respectively.

[5] Airborne lead in urban areas is primarily emitted by vehicles using leaded fuels. The chief source of lead emissions at airports would be the combustion of leaded aviation gasoline in small piston-engine general aviation aircraft. An exceedence of the lead standard at JFK would be unlikely because of the extreme low number of operations that use low-lead fuel for piston-engine aircraft. Therefore, emissions of lead were not considered in this analysis.

[6] A homogeneous geographical area, with regard to air quality, is an area, not necessarily bounded by state lines, where the air quality characteristics have been shown to be similar over the whole area. This may include several counties, encompassing more than one state, or may be a very small area within a single county.

Table C-1
NATIONAL AMBIENT AIR QUALITY STANDARDS (NAAQS)
John F. Kennedy International Airport

NAAQS FOR CRITERIA POLLUTANTS			
POLLUTANT	**AVERAGING PERIOD**	**PRIMARY STANDARDS**	**SECONDARY STANDARDS**
a) Sulfur Dioxide (SO_2)	1-Hour Average 3-Hour Average	0.075 PPM None	None 0.50 PPM
b) Particulate Matter (PM_{10})	24-Hour Average	150 $\mu g/m^3$	Same as Primary
b) Particulate Matter ($PM_{2.5}$)	Annual Arithmetic Mean 24-Hour Average (2006 Std)	12 $\mu g/m^3$ 35$\mu g/m^3$	15 $\mu g/m^3$ 35$\mu g/m^3$
c) Carbon Monoxide (CO)	8-Hour Average 1-Hour Average	9 PPM 35 PPM	None
d) Ozone (O_3)	8-Hour Average (2008 Std)	0.075 PPM	Same as Primary
e) Nitrogen Dioxide (NO_2)	1-Hour Daily Maximum Annual Arithmetic Mean	0.100 PPM 0.053 PPM	Same as Primary
f) Lead (Pb)	Rolling 3-Month Average	0.15 $\mu g/m^3$	Same as Primary
	3-Month Arithmetic Mean	1.5 $\mu g/m^3$	

a) 75 Federal Register 35520, June 22, 2010. Final rule signed June 2, 2010. The 1971 annual and 24-hour SO2 standards (38 FR 25678 September 14, 1973) were revoked in that same rulemaking. However, these standards remain in effect until one year after an area is designated for the 2010 standard, except in areas designated nonattainment for the 1971 standards, where the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standard are approved.

b) 71 Federal Register 61144, October 2006 and 78 Federal Register January 15, 2013.

c) 76 Federal Register 54294, August 31, 2011.

d) 73 Federal Register 16436, March 27, 2008. Final rule signed March 12, 2008. The 1997 ozone standard (0.08 ppm, annual fourth-highest daily maximum 8-hour concentration, averaged over 3 years) and related implementation rules remain in place. In 1997, EPA revoked the 1-hour ozone standard (0.12 ppm, not to be exceeded more than once per year) in all areas, although some areas have continued obligations under that standard.

e) 75 Federal Register 6474, February 9, 2010. 61 Federal Register 52852, October 8, 1996.

f) 73 Federal Register 66964, November 12, 2008. Final rule signed October 15, 2008. The 1978 lead standard (1.5 µg/m3 as a quarterly average) remains in effect until one year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved.

Notes: PPM is parts per million; Std is Standard.
$\mu g/m^3$ is micrograms per cubic meter.

Sources: USEPA, 40 CFR Part 50.4 through Part 50.13, *National Primary and Secondary Ambient Air Quality* Standards.

According to FAA guidelines[7] that establish procedures to meet NEPA requirements, an air quality assessment prepared pursuant to NEPA regulations should include an analysis and conclusions of a Federal action's impacts on air quality, as quoted in **Table C-2, *NEPA Compliance for Airport Federal Actions***.

[7] FAA Order 1050.1E Change 1, *Environmental Impacts: Policies and Procedures*, Appendix A, Section 2 *Air Quality*, March 20, 2006.

Table C-2
NEPA COMPLIANCE FOR AIRPORT FEDERAL ACTIONS
John F. Kennedy International Airport

FAA GUIDELINES FOR AIRPORT NEPA COMPLIANCE
Environmental Impacts: Policies and Procedures **FAA Order 1050.1E Change 1, Section 2, *Air Quality***
Paragraph 2.1(c), *Requirements:*
When a NEPA analysis is needed, the proposed action's impact on air quality is assessed by evaluating the impact of the proposed action on the NAAQS. The proposed action's "build" and "no-build" emissions are inventoried for each reasonable alternative. Normally, further analysis would not be required for pollutants where emissions do not exceed General Conformity [*de minimis*] thresholds.

Source: FAA Order 1050.1E Change 1, *Environmental Impacts: Policies and Procedures*, Appendix A, Section 2, *Air Quality*, March 20, 2006.

At a minimum, an inventory would be prepared reflecting emissions under the baseline (no action) conditions, and a separate inventory would be prepared describing emissions due to the Proposed Action. The net emissions derived from the comparison of the two inventories indicate the relative impact to air quality. Generally, when a Federal action will not result in net emissions that equal or exceed the requirements under the CAA General Conformity regulations, a comparative evaluation of the Federal action to the NAAQS, which requires dispersion analysis, is not necessary, and the Federal action is assumed to comply with the NAAQS.

C.1.2 STATE IMPLEMENTATION PLAN (SIP)

According to the CAA, each state must provide the USEPA with a State Implementation Plan (SIP). The SIP must include a strategy for air quality improvement in local areas for each criteria pollutant that exceeds the NAAQS. The SIP must also include a plan to maintain acceptable air quality in areas that did not meet the NAAQS in the recent past.

C.1.3 CLEAN AIR ACT CONFORMITY REGULATIONS

The CAA Amendments of 1990 included provisions to ensure emissions from Federal actions will comply with the goals of the SIP and will not interfere with the plans to improve air quality in a nonattainment or maintenance area. Compliance to the SIP requires the sponsoring Federal agency to prepare an analytical demonstration of the potential for significant air quality impacts from Federal actions unless the action is exempt under the CAA regulations, or is a project included in the sponsoring agency's Presumed to Conform List.[8]

[8] The Final Notice for the FAA Presumed to Conform list was published in the Federal Register on July 30, 2007 (72 FR 41565) and includes airport projects that would not require evaluation under the General Conformity regulations. RSA improvements are presumed to conform unless a new road or the relocation of a road is required. Therefore, the Proposed Action at JFK is not exempt under General Conformity.

The USEPA promulgated the conformity regulations on November 24, 1993[9] to assist Federal agencies in complying with the SIP by specifying rules for two categories of Federal actions: transportation actions and general actions. The two rules have separate and distinct applicability and evaluation requirements. Transportation conformity applies to highway and transit projects, and general conformity regulations apply to all other Federal actions that are not transportation projects, such as airport improvement projects.

C.1.4 GENERAL CONFORMITY RULE APPLICABILITY

The General Conformity Rule under the CAA establishes minimum values, referred to as the *de minimis* thresholds, for the criteria and precursor pollutants[10] for the purpose of:

- Identifying Federal actions with project-related emissions that are clearly negligible (*de minimis*);
- Avoiding unreasonable administrative burdens on the sponsoring agency, and;
- Focusing efforts on key actions that would have potential for significant air quality impacts.

The *de minimis* rates vary depending on the severity of the nonattainment area and further depend on whether the general Federal action is located inside an ozone transport region.[11] An evaluation relative to the General Conformity Rule (the Rule), published under 40 CFR Part 93,[12] is required only for general Federal actions that would cause emissions of the criteria or precursor pollutants, and are:

- Federally-funded or Federally-approved;
- Not a highway or transit project[13];
- Not identified as an exempt project[14] under the CAA;
- Not a project identified on the approving Federal agency's Presumed to Conform list; and,
- Located within a nonattainment or maintenance area.

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9 58 FR 62188, dated November 24, 1993.

10 Precursor pollutants are pollutants that are involved in the chemical reactions that form the resultant pollutant. Ozone precursor pollutants are NO_x and VOC, whereas $PM_{2.5}$ precursor pollutants include NO_x, VOC, SO_x, and ammonia (NH_3).

11 The ozone transport region is a single transport region for ozone (within the meaning of Section 176A(a) of the CAA), comprised of the States of Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont, and the Consolidated Metropolitan Statistical Area that includes the District of Columbia, as given at Section 184 of the CAA.

12 USEPA, 40 CFR Part 93, Subpart B, *Determining Conformity of General Federal Actions to State or Federal Implementation Plans*, July 1, 2006.

13 Highway and transit projects are defined under Title 23 U.S. Code and the Federal Transit Act.

14 The JFK Proposed Action is not listed as an action exempt from a conformity determination pursuant to 40 CFR Part 93.153(c). An exempt project is one that the USEPA has determined would clearly have no impact on air quality at the facility, and any net increase in emissions would be so small as to be considered negligible.

The Proposed Action at JFK is included in a nonattainment area for ozone and emissions of $PM_{2.5}$ and maintenance area for CO. Further, the Proposed Action meets the remaining criteria for requiring an evaluation under the General Conformity Rule. When the action requires evaluation under the General Conformity regulations, the net total direct and indirect emissions due to the Federal action may not equal or exceed the relevant *de minimis* thresholds unless:

- An analytical demonstration is provided that shows the emissions would not exceed the NAAQS; or
- Net emissions are accounted for in the SIP planning emissions budget; or
- Net emissions are otherwise accounted for by applying a solution prescribed under 40 CFR Part 93.158.

The Federal *de minimis* thresholds established under the CAA are given in **Table C-3, *De Minimis Thresholds***. The Proposed Action would occur in Queens County, which is designated nonattainment for ozone and $PM_{2.5}$ and maintenance area for CO. Conformity to the *de minimis* thresholds is relevant only with regard to those pollutants and the precursor pollutants for which the area is nonattainment or maintenance. Notably, there are no *de minimis* thresholds to which a Federal agency would compare ozone emissions. This is because ozone is not directly emitted from a source. Rather, ozone is formed through photochemical reactions involving emissions of the precursor pollutants NO_x and VOC in the presence of abundant sunlight, and heat. Therefore, emissions of ozone on a project level are evaluated based on the rate of emissions of the ozone precursor pollutants, NO_x and VOC.

Although $PM_{2.5}$ is sometimes emitted directly, fine particle emissions can form resulting from chemical reactions involving emissions of the $PM_{2.5}$ precursor pollutants NO_x, VOC, SO_x, and ammonia (NH_3).[15] Similar to ozone, the net emissions of $PM_{2.5}$ and the precursor pollutants SO_x, NO_x, and VOC would be evaluated with regard to General Conformity. As such, the pollutants of concern for the Proposed Action at JFK are CO, NO_x, VOC, $PM_{2.5}$, and SO_x. The relevant *de minimis* thresholds as shaded on Table C-3 are 100 tons per year for all of these pollutants except VOCs, which would be limited to 50 tons per year.

[15] Emissions of NH_3 are generally associated with commercial animal agriculture, including feeding operations. Therefore, emissions of NH_3 were not included in this analysis.

Table C-3
***DE MINIMIS* THRESHOLDS**
John F. Kennedy International Airport

CRITERIA AND PRECURSOR POLLUTANTS	TYPE AND SEVERITY OF NONATTAINMENT AREA	TONS PER YEAR THRESHOLD
Ozone (VOC or NO_x)[1]	Serious nonattainment	50
	Severe nonattainment	25
	Extreme nonattainment	10
	Other areas outside an ozone transport region	100
Ozone (NO_x)[1]	Marginal and moderate nonattainment inside an ozone transport regions[2]	100
	Maintenance	100
Ozone (VOC)[1]	Marginal and moderate nonattainment inside an ozone transport region[2]	50
	Maintenance within an ozone transport region[2]	50
	Maintenance outside an ozone transport region[2]	100
Carbon monoxide (CO)	All nonattainment & maintenance	100
Sulfur dioxide (SO_2)	All nonattainment & maintenance	100
Nitrogen dioxide (NO_2)	All nonattainment & maintenance	100
Coarse particulate matter (PM_{10})	Serious nonattainment	70
	Moderate nonattainment and maintenance	100
Fine particulate matter ($PM_{2.5}$) (VOC, NO_x, NH_3, and SO_x)[3]	All nonattainment and maintenance	100
Lead (Pb)	All nonattainment and maintenance	25

Notes: Federal thresholds that are shaded are applicable to this project.

Code of Federal Regulations (CFR), Title 40, *Protection of the Environment*.

USEPA defines *de minimis* as emissions that are so low as to be considered insignificant and negligible.Volatile organic compounds (VOC); Nitrogen oxides (NO_x); Ammonia (NH_3);

Sulfur oxides (SO_x).

1 The rate of increase of ozone emissions is not evaluated for a project-level environmental review because the formation of ozone occurs on a regional level and is the result of the photochemical reaction of NO_x and VOC in the presence of abundant sunlight and heat. Therefore, USEPA considers the increasing rates of NO_x and VOC emissions to reflect the likelihood of ozone formation on a project level.

2 An OTR is a single transport region for ozone, comprised of the states of Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont, and the Consolidated Metropolitan Statistical Area that includes the District of Columbia.

3 For the purposes of General Conformity applicability, VOC's and NH_3 emissions are only considered $PM_{2.5}$ precursors in nonattainment areas where either a State or USEPA has made a finding that the pollutants significantly contribute to the $PM_{2.5}$ problem in the area. In addition, NO_X emissions are always considered a $PM_{2.5}$ precursor unless the State and USEPA make a finding that NO_X emissions from sources in the State do not significantly contribute to $PM_{2.5}$ in the area. Refer to 74 FR 17003, April 5, 2006.

Sources: USEPA, 40 CFR Part 93.153(b)(1) & (2), March 25, 2008.USEPA, 40 CFR Part 51.853, March 25, 2008.

If the General Conformity evaluation of the Proposed Action at JFK were to show that any of these thresholds could potentially be equaled or exceeded on an annual basis, additional, more detailed analysis to demonstrate conformity would be required, which is referred to as a General Conformity Determination.[16] Conversely, if the General Conformity evaluation were to show that none of the relevant thresholds were equaled or exceeded, the Proposed Action at JFK would be presumed to conform under the CAA, NEPA, and the New York SIP and no further analysis would be required under the CAA.

C.1.5 TRANSPORTATION CONFORMITY RULE APPLICABILITY

Although airport improvement projects are usually considered under the General Conformity regulations, there can be elements of a Federal action or its alternatives that may require an analysis to demonstrate Transportation Conformity, such as actions relating to transportation plans, programs, projects developed, funded, or approved under Title 23 United States Code (U.S.C.) or the Federal Transit Act,[17] or involve Federal highways. In such cases, the sponsoring Federal agency would be required to coordinate with the Federal Highway Administration (FHWA), the state Department of Transportation (DOT), and the local metropolitan planning organization (MPO) to assist in completing a Transportation Conformity evaluation.

As with General Conformity, Transportation Conformity regulations apply only to Federal actions located within a nonattainment or maintenance area. The Proposed Action under consideration at JFK would not be developed, funded, or approved by the FHWA or FTA, and does not have a significant adverse effect on regional transportation plans or programs. Therefore, the Transportation Conformity regulations would not apply.

C.1.6 INDIRECT SOURCE REVIEW

Some states require an air quality review when a Federal action has the potential to cause an increase in net emissions from indirect sources. Indirect sources cause emissions that occur later in time or are farther removed from the Federal action. Depending on the state, indirect sources may be identified as motor vehicles on highways, parking at sports and entertainment facilities, or an increase in aircraft operations. The state requirement is referred to as the Indirect Source Review (ISR) and each state requiring an ISR sets thresholds for increased operation of the indirect sources. When a Federal action has the potential to exceed these thresholds, an air quality review is required to assess the character and impact of the additional emissions, which is separate from the analyses required under NEPA or the CAA. According to FAA, *Air Quality Procedures for Airports and Air Force Bases*,[18] New York is listed as one of the states requiring an ISR; however, the ISR is required only for the County of New York south of 60th Street. Therefore, since JFK is in Queens County an ISR is not required for the Proposed Action.

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16 40 CFR Part 93.153.
17 USEPA, 40 CFR Part 93.153, *Applicability*, July 1, 2006.
18 FAA, *Air Quality Procedures for Civilian Airports & Air Force Bases*, Appendix J, April 1997 and Addendum September 2004.

C.2 MODELING APPROACH

The impacts to air quality due to the Proposed Project were determined in accordance with the guidelines provided in FAA, *Air Quality Procedures for Civilian Airports & Air Force Bases,* and FAA Order 5050.4B, *National Environmental Policy Act (NEPA) Implementing Instructions for Airport Actions*, which together with the guidelines of FAA Order 1050.1E, Change 1, *Environmental Impacts: Policies and Procedures*, constitute compliance with all the relevant provisions of NEPA and the CAA.

In order to properly determine the potential for impact to air quality the following analyses were conducted for this assessment:

- Criteria and precursor pollutant emission inventory;
- Construction equipment emissions inventory; and
- Dispersion analysis (Carbon Monoxide Hot Spot Analysis).

C.2.1 METEOROLOGY

In order to properly estimate the emissions inventories, information regarding the weather must be obtained, particularly the mixing height, temperature, barometric pressure, wind direction, ceiling height and visibility.

The calculation of emissions assumes that aircraft operate only within the mixing layer, below the mixing height, where the emissions may influence ground-based pollutant concentrations. The mixing height, combined with the angle of approach (usually 3 degrees above the horizon) and the departure angle, determines the total time an aircraft operates during approach and climbout.

The emissions inventories were prepared using the FAA-required and USEPA-approved Emissions and Dispersion Modeling System (EDMS) version 5.1.4 computer program released in June 2013. EDMS is an emissions inventory and air dispersion model designed specifically to estimate emissions and calculate pollutant concentrations from airport specific sources. EDMS requires the declaration of a mixing height when the computer study is created. The EDMS default mixing height of 3,000 feet was used in this analysis. In addition, the EDMS default value of 53 degrees Fahrenheit was used for the analysis.

C.2.2 AIRCRAFT, GSE, AND APUS

Aircraft

At all airports the number of aircraft operations directly affects emissions relative to the use of aircraft engines in arrival and departure operations, the use of aircraft engines during taxi time, and through departure queue delay time. With or without the Proposed Action, air traffic is projected to increase each year and by 2015 the number of annual aircraft operations will be higher as compared to the 2012/2013 Existing Conditions. The Proposed Action would not increase the actual number of

aircraft or change the existing or projected fleet mix. Therefore, the Proposed Action would not increase the total number of aircraft operations as compared to the No-Build/No-Action conditions.

The Proposed Action which relocating the departure starting point on Runway 22R 728 feet to the north and the construction of a high speed taxiway exit leading to the central terminal area would have the potential to change average taxi time at the Airport. Therefore, the only changes to emissions from aircraft due to the Proposed Action would be a result of a change in average taxi-time.

To determine the fleet mix used in the modeling, data from the Port Authority's airport noise and operations management system (ANOMS) and the FAA's Air Traffic Activity System (ATADS) for JFK was obtained. The data was used to determine the annual operations for the existing conditions. See Appendix B, *Noise* for details/methodology for the existing conditions.

To represent the Proposed Action only those aircraft operations that have the potential to be affected were modeled in EDMS. The FAA operates the JFK runway system in a large number of combinations of arrival and departure runways (configurations). JFK operations fall into one of four ground flow conditions, northwest flow, southwest flow, southeast flow, or northeast flow. The Proposed Action would only affect aircraft operating in southwest and northeast ground flow. For the existing conditions it was determined that JFK operated in southwest flow and northeast flow 56.9 percent of the time.[19]

In order to properly estimate emissions, the landing take-off cycles (LTOs) of each particular aircraft is needed. An LTO consists of the approach, landing roll, taxi to and from the gate/terminal/or parking area, idle time, takeoff, and climbout. An LTO is defined as one arrival operation and one departure operation. Therefore 407,864 annual operations in 2012/2013 would equal 203,932 LTOs, and further applying the 56.9 percent for aircraft operating in southwest and northeast flow would result in 116,037 LTOs. In 2015, there is an approximate nine percent increase in annual aircraft operations from the baseline and in 2020 an approximate nineteen percent increase in annual aircraft operations from the baseline (See Appendix B, Noise for details on the forecast of operations). **Table C-4, C-5, and C-6** shows the EDMS aircraft, total annual operations, and LTOs operating in southwest and northeast flow (56.9 percent of total) for each year in the study.

[19] Port Authority of New York and New Jersey and Landrum & Brown analysis.

Table C-4
2012/2013 TOTAL AIRCRAFT OPERATIONS
John F. Kennedy International Airport

INM AIRCRAFT TYPE	EDMS REPRESENTATIVE AIRCRAFT	(EXISTING CONDITIONS) 2012 OPERATIONS	2012 LTO'S (56.9% OF TOTAL)
7478	Boeing 747-8	957	272
737500	Boeing 737-500 Series	398	113
737700	Boeing 737-700 Series	3,061	871
737800	Boeing 737-800 Series	41,342	11,762
74720B	Boeing 747-200 Series	647	184
747400	Boeing 747-400 Series	16,084	4,576
757PW	Boeing 757-300 Series	38,403	10,926
767300	Boeing 767-300 Series	37,199	10,583
767400	Boeing 767-400 Series	57	16
777200	Boeing 777-200 Series	11,914	3,390
777300	Boeing 777-300 Series	103	29
7772LR	Boeing 777-200 LR	911	259
7773ER	Boeing 777-300 Extended Range	12,077	3,436
1900D	Raytheon Beech 1900-D	549	156
A300B4-203	Airbus A300B2-100 Series	574	163
A310-304	Airbus A310-200 Series	134	38
A319-131	Airbus A319-100 Series	8,981	2,555
A320-232	Airbus A320-200 Series	89,520	25,469
A321-232	Airbus A321-200 Series	3,195	909
A330-301	Airbus A330-200 Series	7,672	2,183
A330-343	Airbus A330-200 Series	10,238	2,913
A340-211	Airbus A340-200 Series	5,650	1,608
A380-861	Airbus A380-800 Series	3,406	969
BEC58P	Raytheon Beech Baron 58	287	82
CIT3	Cessna 650 Citation III	292	83
CLREGJ	Bombardier CRJ 200	24,734	7,037
CNA208	Cessna 208	260	74
CNA441	Cessna 441 Conquest II	89	25
CNA500	Cessna 500 Citation I	414	118
CNA750	Cessna 750 Citation X	279	79
CRJ9-ER	Bombardier CRJ 900 Extended Range	24,137	6,867
DC1010	Boeing DC-10-10 Series	1,371	390
DHC6	De Havilland DHC-6-100	276	79
DHC830	De Havilland DHC-8-100	1,111	316
EMB145	Embraer ERJ145	19,659	5,593
EMB170	Embraer ERJ170	153	43
EMB190	Embraer ERJ190	30,782	8,758
FAL20	Dassault Falcon 200	55	16
GASEPV	Raytheon Beech Bonanza 36	949	270
GIV	Gulfstream IV-SP	371	106
GV	Gulfstream V-SP	214	61
LEAR25	Bombardier Learjet 25	132	37
LEAR35	Bombardier Learjet 35	1,749	497
MD11GE	Boeing MD-11	1,355	386
MD83	Boeing MD-83	4,863	1,384
MU3001	Cessna 560 Citation V	1,166	332
SD330	Shorts 330-100 Series	92	26
Total Aircraft Operations		**407,864**	**116,037**

Source: PANYNJ data and Landrum & Brown analysis, 2013. Totals may not sum exactly due to rounding.

Table C-5
2015 TOTAL AIRCRAFT OPERATIONS
John F. Kennedy International Airport

INM AIRCRAFT TYPE	EDMS REPRESENTATIVE AIRCRAFT	2015 OPERATIONS	2015 LTO'S (56.9% OF TOTAL)
7478	Boeing 747-8	802	228
737500	Boeing 737-500 Series	880	250
737700	Boeing 737-700 Series	3,272	931
737800	Boeing 737-800 Series	32,608	9,277
74710Q	Boeing 747-100 Series	5,397	1,535
74720B	Boeing 747-200 Series	834	237
747400	Boeing 747-400 Series	10,879	3,095
757PW	Boeing 757-300 Series	30,502	8,678
767300	Boeing 767-300 Series	56,106	15,962
767400	Boeing 767-400 Series	4,979	1,417
777200	Boeing 777-200 Series	4,740	1,349
777300	Boeing 777-300 Series	88	25
7772LR	Boeing 777-200 LR	1,936	551
7773ER	Boeing 777-300 Extended Range	8,696	2,474
7878R	Boeing 787-8 Dreamliner	888	253
A300B4-203	Airbus A300B2-100 Series	1,557	443
A310-304	Airbus A310-200 Series	367	105
A319-131	Airbus A319-100 Series	9,214	2,621
A320-232	Airbus A320-200 Series	84,326	23,991
A321-232	Airbus A321-200 Series	20,438	5,815
A330-301	Airbus A330-200 Series	9,172	2,609
A340-211	Airbus A340-200 Series	7,758	2,207
A350	Airbus A350-800 Series	311	89
A380-841	Airbus A380-800 Series	3,793	1,079
BEC58P	Raytheon Beech Baron 58	501	143
CIT3	Cessna 650 Citation III	234	67
CLREGJ	Bombardier CRJ 200	18,282	5,201
CNA441	Cessna 441 Conquest II	7	2
CNA500	Cessna 500 Citation I	133	38
CNA750	Cessna 750 Citation X	870	247
CRJ701	Bombardier CRJ-700	10,511	2,990
CRJ900	Bombardier CRJ-900	17,422	4,957
DC1010	Boeing DC-10-10 Series	1,499	426
DC870	Boeing MD-87	208	59
EMB135	Embraer ERJ135	6,187	1,760
EMB145	Embraer ERJ145	28,883	8,217
EMB170	Embraer ERJ170	2,302	655
EMB175	Embraer ERJ175	7,779	2,213
EMB190	Embraer ERJ190	36,178	10,293
FAL20	Dassault Falcon 200	467	133
GASEPV	Raytheon Beech Bonanza 36	894	254
GIIB	Gulfstream II-B	63	18
GIV	Gulfstream IV-SP	325	93
GV	Gulfstream V-SP	715	203
LEAR25	Bombardier Learjet 25	1,269	361
LEAR35	Bombardier Learjet 35	846	241
MD11GE	Boeing MD-11	2,795	795
MD83	Boeing MD-83	5,362	1,526
MU3001	Cessna 560 Citation V	2,541	723
Total Aircraft Operations		**445,819**	**126,836**

Source: PANYNJ data and Landrum & Brown analysis, 2013. Totals may not sum exactly due to rounding.

Table C-6
2020 TOTAL AIRCRAFT OPERATIONS
John F. Kennedy International Airport

INM AIRCRAFT TYPE	EDMS REPRESENTATIVE AIRCRAFT	2020 OPERATIONS	2020 LTO'S (56.9% OF TOTAL)
7478	Boeing 747-8	1,117	318
737700	Boeing 737-700 Series	4,241	1,206
737800	Boeing 737-800 Series	41,389	11,775
74710Q	Boeing 747-100 Series	5,895	1,677
74720B	Boeing 747-200 Series	564	160
747400	Boeing 747-400 Series	10,978	3,123
757PW	Boeing 757-300 Series	19,848	5,647
767300	Boeing 767-300 Series	59,521	16,934
767400	Boeing 767-400 Series	6,612	1,881
777200	Boeing 777-200 Series	4,181	1,189
777300	Boeing 777-300 Series	115	33
7772LR	Boeing 777-200 LR	4,529	1,289
7773ER	Boeing 777-300 Extended Range	11,371	3,235
7878R	Boeing 787-8 Dreamliner	2,689	765
A300B4-203	Airbus A300B2-100 Series	2,056	585
A310-304	Airbus A310-200 Series	487	138
A319-131	Airbus A319-100 Series	12,261	3,488
A320-232	Airbus A320-200 Series	94,340	26,840
A321-232	Airbus A321-200 Series	29,248	8,321
A330-301	Airbus A330-200 Series	11,896	3,384
A340-211	Airbus A340-200 Series	6,202	1,764
A350	Airbus A350-800 Series	1,490	424
A380-841	Airbus A380-800 Series	5,310	1,511
BEC58P	Raytheon Beech Baron 58	494	141
CIT3	Cessna 650 Citation III	235	67
CLREGJ	Bombardier CRJ 200	17,952	5,107
CNA441	Cessna 441 Conquest II	7	2
CNA500	Cessna 500 Citation I	133	38
CNA750	Cessna 750 Citation X	874	249
CRJ701	Bombardier CRJ-700	12,710	3,616
CRJ900	Bombardier CRJ-900	17,978	5,115
DC1010	Boeing DC-10-10 Series	1,559	444
DC870	Boeing MD-87	182	52
EMB135	Embraer ERJ135	5,383	1,531
EMB145	Embraer ERJ145	28,112	7,998
EMB170	Embraer ERJ170	3,688	1,049
EMB175	Embraer ERJ175	8,552	2,433
EMB190	Embraer ERJ190	39,545	11,251
FAL20	Dassault Falcon 200	468	133
GASEPV	Raytheon Beech Bonanza 36	898	255
GIIB	Gulfstream II-B	63	18
GIV	Gulfstream IV-SP	326	93
GV	Gulfstream V-SP	1,900	540
LEAR25	Bombardier Learjet 25	1,272	362
LEAR35	Bombardier Learjet 35	849	242
MD11GE	Boeing MD-11	3,811	1,084
MD83	Boeing MD-83	1,189	338
MU3001	Cessna 560 Citation V	2,552	726
Total Aircraft Operations		**487,072**	**138,572**

Source: PANYNJ data and Landrum & Brown analysis, 2013. Totals may not sum exactly due to rounding.

Taxi Times

The average taxi-in and taxi-out time is dependent on the airfield configuration. Gate delays as well as total taxi time was determined for the existing conditions for aircraft operating in southwest and northeast flow. For this analysis, gate time and taxi time for arrivals and departures were averaged to determine taxi-in and taxi-out time. For the existing conditions taxi-in time was determined to be 8.10 minutes and taxi-out time was 26.61 minutes.[20] The average taxi in and taxi out time was applied to each aircraft in the No-Build/No-Action fleet list for the calculation of the existing conditions emissions inventory.

The Proposed Action includes the construction of a new high speed taxiway exit leading to the central terminal area, new taxiway access points to the ends of the runway, and other taxiway modifications. These proposed modifications would result in a reduction of arrival delays in both southwest and northeast flow and would help decrease the runway occupancy time. Total taxi time for the Proposed Action was determined for the future conditions for aircraft operating in southwest and northeast flow.[21] The average taxi in-time (7.76 minutes) and taxi-out time (25.84 minutes) was applied to each aircraft in the Proposed Action future fleet list for the applicable alternative for the calculation of the emissions inventory.

APU

The larger jet aircraft operating at JFK use an (auxiliary power unit) APU to operate heat, air conditioning, and electric for the aircraft at the gate. The APU is also used to restart the engines before departing from the gate area. The assignments of APUs were made using the EDMS default assignments. It is assumed there would be no change in operating time of APU use from the 2015 No-Build/No-Action to the 2015 Proposed Action or from the 2020 No-Build/No-Action to the 2020 Proposed Action.

GSE

The EDMS default assignments for the type and operating time of ground support equipment (GSE) for each aircraft type was used for the analysis. It is assumed there would be no change in GSE use from the 2015 No-Build/No-Action to the 2015 Proposed Action or from the 2020 No-Build/No-Action to the 2020 Proposed Action.

C.2.3 GROUND ACCESS VEHICLES (GAV)

On-airport traffic counts for North Boundary Road were obtained from the Port Authority and were used in the analysis.[22] Future vehicle traffic volumes were projected assuming the increase in the number of vehicles at the Airport would be directly related to projected increases in aircraft annual operations.

[20] Landrum & Brown analysis.
[21] Landrum & Brown analysis.
[22] Maser Consulting, P.A. Traffic DataBank counts. North Boundary Road west of Police Academy, JFK Airport, New York, 10/09/2011 to 10/17/2011.

For the 2012/2013 conditions there were approximately 174 vehicles per day or 63,688 per year. **Table C-7, *Annual Ground Access Vehicles***, shows the annual GAVs for each year in the study. Refer to Chapter 5, *Environmental Consequences* for more detailed information and analysis with regard to surface transportation and traffic conditions.

Table C-7
ANNUAL GROUND ACCESS VEHICLES
John F. Kennedy International Airport

	2012	2015	2020
Ground Access Vehicles	63,688	67,425	73,664

Source: Maser Consulting, P.A. Traffic DataBank counts and Landrum & Brown analysis.

As part of the Proposed Action, a portion of North Boundary Road would be relocated and a new driveway from Rockaway Boulevard would be constructed. All vehicles accessing the PAPD facilities would use Rockaway Boulevard instead of North Boundary Road. While the number of vehicles would be the same, the Proposed Action would cause ground access vehicles to travel a longer distance and would increase potential emissions. Emissions from ground access vehicles (GAVs) on roadways were estimated using EDMS Version 5.1.4 computer program which is approved for predicting emissions from GAVs.

C.2.4 STATIONARY SOURCES

The Proposed Action is expected to have a negligible impact on public utilities, energy suppliers, and natural resources and demand would not exceed supply. Refer to Chapter 5, *Environmental Consequences* for more detailed information. Therefore for this analysis it is assumed there would be no change in stationary source use from 2015 No-Build/No-Action to the 2015 Proposed Action or from the 2020 No-Build/No-Action to the 2020 Proposed Action.

C.3 EXISTING CONDITIONS

The results of the emission inventory for the 2012/2013 Existing Conditions are provided in **Table C-8, *2012/2013 Existing Conditions Emissions Inventory***.

Table C-8
2012/2013 EXISTING CONDITIONS EMISSIONS INVENTORY
John F. Kennedy International Airport

EMISSION SOURCES	ANNUAL EMISSIONS (tons per year)					
	CO	**VOC**	**NO_X**	**SO_X**	**PM_{10}**	**$PM_{2.5}$**
Aircraft	1,886.76	196.20	2,105.00	211.40	24.54	24.54
GSE	898.41	31.33	104.34	2.24	3.92	3.76
APUs	35.62	3.61	53.78	6.60	6.55	6.55
Vehicles	0.49	0.03	0.05	0.00	0.00	0.00
Total	**2,821.28**	**231.17**	**2,263.16**	**220.24**	**35.02**	**34.85**

Total emissions may not sum exactly due to rounding.
Source: Landrum & Brown Analysis, 2013.

C.4 CONSTRUCTION

Short-term temporary air quality impacts would be caused by construction of the Proposed Action. In accordance with FAA Order 1050.1E Change 1, *Environmental Impacts: Policies and Procedures*, the impacts to the environment due to construction activities must be assessed. Final engineering for the Proposed Action is not complete. Therefore, the analysis of construction emissions was based on estimates of the type and quantity of construction activities likely to be used for the project. The use of equipment anticipated to be necessary for the construction of the Proposed Action were based on airport construction projects of similar size and scope that were successfully reviewed in previous recent airport environmental documents.

Construction of the Proposed Action is planned to occur between March 2014 and December 2015. In order to determine construction emissions, a list of construction equipment necessary for each construction task was developed. Total operating hours for each piece of equipment required for each construction task was calculated.

The emissions for all the individual construction tasks were added together to determine the total construction emissions for each year of construction attributable to the Proposed Action as provided in **Table C-9, *Proposed Action Construction Emissions Inventory***.

Table C-9
PROPOSED ACTION CONSTRUCTION EMISSIONS INVENTORY
John F. Kennedy International Airport

Construction Year	ANNUAL EMISSIONS (tons per year)					
	CO	**VOC**	**NO_x**	**SO_x**	**PM_{10}**	**$PM_{2.5}$**
2014	0.732	0.407	0.977	0.012	0.041	0.039
2015	0.895	0.497	1.194	0.015	0.050	0.048
***de minimis* THRESHOLD**	**100**	**50**	**100**	**100**	**100**	**100**

Total emissions may not sum exactly due to rounding.
Source: Landrum & Brown Analysis, 2013.

Construction of the Proposed Action would result in short term air quality impacts from exhaust emissions from construction equipment and from fugitive dust emissions from vehicle movement and soil excavation. Fugitive dust emissions consist mostly of soil. As provided in Table C-9, emissions due to construction equipment would not exceed applicable threshold.

While the construction of the Proposed Action would be expected to contribute to fugitive dust in and around the construction site, the Port Authority would ensure that all possible measures would be taken to reduce fugitive dust emissions during construction by requiring the construction contractor to submit a proposed method of erosion and dust control, and disposal of waste materials pursuant to guidelines included in FAA Advisory Circular, *Standards for Specifying Construction of Airports*.[23] While the estimated annual occurrence of temporary fugitive dust emissions during construction is highly variable on a daily basis, the implementation of the measures by the Port Authority would result in fugitive dust emissions from construction activity being essentially nil. In addition to the fugitive dust controls, the Port Authority would be required to obtain any applicable local, state, or Federal air quality permits associated with concrete batch plant operation prior to construction. Methods of controlling dust and other airborne particles will be implemented to the maximum possible extent and may include, but not limited to, the following:

- Minimizing the exposed area of erodible earth;
- Use of water sprinkler trucks for material piles and unpaved areas;
- Use of particle-trap exhaust filters;
- Reduction of idling of diesel engines;
- Use of covered haul trucks to move construction material;
- Use of dust palliatives or penetration asphalt on haul roads; and
- Use of plastic sheet coverings for material piles.

[23] FAA AC, *Standards for Specifying Construction of Airports*, Item P-156, *Temporary Air and Water Pollution, Soil Erosion, and Siltation Control*, AC 150/5370-10F (September 30, 2011).

C.5 EMISSIONS INVENTORY

The results of the emission inventory for the 2015 No-Build/No-Action Conditions are provided in **Table C-10, *2015 No-Build/No-Action Emissions Inventory***.

Table C-10
2015 NO-BUILD/NO-ACTION EMISSIONS INVENTORY
John F. Kennedy International Airport

EMISSION SOURCES	ANNUAL EMISSIONS (tons per year)					
	CO	**VOC**	**NO_X**	**SO_X**	**PM_{10}**	**$PM_{2.5}$**
Aircraft	2,153.21	265.79	2,218.19	225.06	27.41	27.41
GSE	563.11	20.34	70.95	2.05	3.14	3.00
APUs	41.77	3.84	55.09	6.99	6.71	6.71
Vehicles	0.48	0.03	0.04	0.00	0.00	0.00
Total	**2,758.57**	**289.99**	**2,344.27**	**234.10**	**37.25**	**37.11**

Total emissions may not sum exactly due to rounding.
Source: Landrum & Brown Analysis, 2013.

The results of the emission inventory for the 2015 Proposed Action Conditions are provided in **Table C-11, *2015 Proposed Action Emissions Inventory***.

Table C-11
2015 PROPOSED ACTION EMISSIONS INVENTORY
John F. Kennedy International Airport

EMISSION SOURCES	ANNUAL EMISSIONS (tons per year)					
	CO	**VOC**	**NO_X**	**SO_X**	**PM_{10}**	**$PM_{2.5}$**
Aircraft	2,153.21	265.79	2,218.19	225.06	27.41	27.41
GSE	563.11	20.34	70.95	2.05	3.14	3.00
APUs	41.77	3.84	55.09	6.99	6.71	6.71
Vehicles	0.55	0.03	0.05	0.00	0.00	0.00
Construction	0.90	0.50	1.19	0.02	0.05	0.05
Total	**2,759.54**	**290.49**	**2,345.47**	**234.12**	**37.30**	**37.16**

Total emissions may not sum exactly due to rounding.
Source: Landrum & Brown Analysis, 2013.

The results of the emission inventory for the 2020 No-Build/No-Action Conditions are provided in **Table C-12, *2020 No-Build/No-Action Emissions Inventory***.

Table C-12
2020 NO-BUILD/NO-ACTION EMISSIONS INVENTORY
John F. Kennedy International Airport

EMISSION SOURCES	ANNUAL EMISSIONS (tons per year)					
	CO	**VOC**	**NO_X**	**SO_X**	**PM_{10}**	**$PM_{2.5}$**
Aircraft	2,405.31	299.19	2,477.55	249.49	30.45	30.45
GSE	287.23	11.57	36.29	2.17	2.08	1.97
APUs	42.88	3.95	59.95	7.52	7.02	7.02
Vehicles	0.43	0.02	0.03	0.00	0.00	0.00
Total	**2,735.86**	**314.73**	**2,573.81**	**259.18**	**39.54**	**39.43**

Total emissions may not sum exactly due to rounding.
Source: Landrum & Brown Analysis, 2013.

The results of the emission inventory for the 2020 Proposed Action Conditions are provided in **Table C-13, *2020 Proposed Action Emissions Inventory***.

Table C-13
2020 PROPOSED ACTION EMISSIONS INVENTORY
John F. Kennedy International Airport

EMISSION SOURCES	ANNUAL EMISSIONS (tons per year)					
	CO	**VOC**	**NO_X**	**SO_X**	**PM_{10}**	**$PM_{2.5}$**
Aircraft	2,332.45	290.06	2,461.36	245.17	29.92	29.92
GSE	287.23	11.57	36.29	2.17	2.08	1.97
APUs	42.88	3.95	59.95	7.52	7.02	7.02
Vehicles	0.55	0.03	0.03	0.00	0.00	0.00
Total	**2,663.11**	**305.60**	**2,557.63**	**254.86**	**39.01**	**38.90**

Total emissions may not sum exactly due to rounding.
Source: Landrum & Brown Analysis, 2013.

C.5.1 GENERAL CONFORMITY EVALUATION

The purpose of a general conformity evaluation is to examine the results of the emissions inventories and to determine the applicability of the General Conformity Rule to the Proposed Action. A General Conformity Determination is required if the net increase in emissions resulting from the Proposed Action exceed the applicable *de minimis* thresholds. **Table C-14, *General Conformity Evaluation***, shows that the estimated net emissions from construction and implementation of the Proposed Action would be less than the applicable *de minimis* thresholds.

Table C-14
GENERAL CONFORMITY EVALUATION
John F. Kennedy International Airport

ALTERNATIVES	ANNUAL EMISSIONS (tons per year)					
	CO	**VOC**	**NO_x**	**SO_x**	**PM_{10}**	**$PM_{2.5}$**
2015 No-Build/No-Action	2,758.57	289.99	2,344.27	234.10	37.25	37.11
2015 Proposed Action	2,759.54	290.49	2,345.47	234.12	37.30	37.16
NET EMISSIONS	**0.97**	**0.50**	**1.20**	**0.02**	**0.05**	**0.05**
2020 No-Build/No-Action	2,735.86	314.73	2,573.81	259.18	39.54	39.43
2020 Proposed Action	2,663.11	305.60	2,557.63	254.86	39.01	38.90
NET EMISSIONS	**-72.75**	**-9.13**	**-16.18**	**-4.31**	**-0.53**	**-0.53**
***de minimis* THRESHOLD**	**100**	**50**	**100**	**100**	**100**	**100**

Total emissions may not sum exactly due to rounding.
Source: EDMS version 5.1.4, Landrum & Brown Analysis, 2013.

The 2015 Proposed Action would result in an increase in emissions as compared to the 2015 No Build/No Action due to construction activities and ground access vehicles having to travel further distances. The 2020 Proposed Action results in a reduction in emissions compared to the 2020 No Build/No Action due to the reduction in aircraft taxi times once the Proposed Action has been implemented.

Because construction and implementation of the Proposed Action would not result in increased emissions above the applicable *de minimis* thresholds, no further analysis is required under the General Conformity (Rule 40 CFR Part 93, §93.153) and the Proposed Action is presumed to conform.

C.6 CLIMATE AND GREENHOUSE GAS EMISSIONS

Research has shown there is a direct correlation between fuel combustion and GHG emissions. In terms of U.S. contributions, the General Accounting Office (GAO) reports that "domestic aviation contributes about three percent of total carbon dioxide emissions, according to EPA data," compared with other industrial sources including the remainder of the transportation sector (20 percent) and power generation (41 percent).[24] The International Civil Aviation Organization (ICAO)

[24] *Aviation and Climate Change.* GAO Report to Congressional Committees, (2009).

estimates that GHG emissions from aircraft account for roughly three percent of all anthropogenic GHG emissions globally.[25] Climate change due to GHG emissions is a global phenomenon, so the affected environment is the global climate.[26]

The scientific community is continuing efforts to better understand the impact of aviation emissions on the global atmosphere. The FAA is leading and participating in a number of initiatives intended to clarify the role that commercial aviation plays in GHG emissions and climate. The FAA, with support from the U.S. Global Change Research Program and its participating federal agencies (e.g., National Aeronautics and Space Administration (NASA), National Oceanic and Atmospheric Administration (NOAA), Environmental Protection Agency (EPA), and Department Of Energy (DOE)), has developed the Aviation Climate Change Research Initiative (ACCRI) in an effort to advance scientific understanding of regional and global climate impacts of aircraft emissions. FAA also funds the Partnership for Air Transportation Noise & Emissions Reduction (PARTNER) Center of Excellence research initiative to quantify the effects of aircraft exhaust and contrails on global and U.S. climate and atmospheric composition. Similar research topics are being examined at the international level by the International Civil Aviation Organization.[27]

Although there are no federal standards for aviation-related GHG emissions, it is well-established that GHG emissions can affect climate.[28] The Council on Environmental Quality (CEQ) has indicated that climate should be considered in NEPA analyses. As noted by CEQ, however, "it is not currently useful for the NEPA analysis to attempt to link specific climatological changes, or the environmental impacts thereof, to the particular project or emissions; as such direct linkage is difficult to isolate and to understand".[29]

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[25] Alan Melrose, "European ATM and Climate Adaptation: A Scoping Study," in *ICAO Environmental Report.* (2010).

[26] As explained by the U.S. Environmental Protection Agency, "greenhouse gases, once emitted, become well mixed in the atmosphere, meaning U.S. emissions can affect not only the U.S. population and environment but other regions of the world as well; likewise, emissions in other countries can affect the United States." Climate Change Division, Office of Atmospheric Programs, U.S. Environmental Protection Agency, *Technical Support Document for Endangerment and Cause or Contribute Findings for Greenhouse Gases under Section 202(a) of the Clean Air Act* 2-3 (2009).

[27] Lourdes Q. Maurice and David S. Lee. *Chapter* 5: *Aviation Impacts on Climate.* Final Report of the International Civil Aviation Organization (lCAO) Committee on Aviation and Environmental Protection (CAEP) Workshop. October 29th November 2nd 2007, Montreal.

[28] See *Massachusetts* v. *E.P.A.,* 549 U.S. 497, 508-10, 521-23 (2007).

[29] *Draft NEPA Guidance on Consideration* of *the Effects* of *Climate Change and Greenhouse Gas Emissions,* CEQ (2010). http://ceq.hss.doe.gov/nepa/regs/Consideration_ of Effects_ of GHG_Draft_NEP A_Guidance_FINAL _02182010.pdf

An emissions inventory was prepared using the EDMS version 5.1.4 computer program. The results are provided in **Table C-15, *Greenhouse Gas Emissions***. The greenhouse gas assessment demonstrates that the Proposed Action would not cause an increase in greenhouse gas emissions compared to the No-Build/No-Action alternative. The Proposed Action would actually decrease emissions as compared to the No-Build/No-Action.

Table C-15
GREENHOUSE GAS EMISSIONS
John F. Kennedy International Airport

Annual Metric Tons of CO_2	
2020 No-Build/No-Action	552,685.22
2020 Proposed Action	543,128.83
NET EMISSIONS	***-9,556.39***

CO_2: Carbon Dioxide
Total emissions may not sum exactly due to rounding.
Source: EDMS version 5.1.4, Landrum & Brown Analysis, 2013.

Currently, there are no Federal standards for reporting greenhouse gas emissions from aviation sources, as well as no significance thresholds. Pursuant to FAA Order 1050.1E Guidance Memo #3, no further consideration of GHGs is necessary.[30]

The cumulative impact of this Proposed Action on the global climate when added to other past, present, and reasonably foreseeable future actions is not currently scientifically predictable. Aviation has been calculated to contribute approximately three percent of global carbon dioxide (CO_2) emissions; this contribution may grow to five percent by 2050. Actions are underway within the U.S. and by other nations to reduce aviation's contribution through such measures as new aircraft technologies to reduce emissions and improve fuel efficiency, renewable alternative fuels with lower carbon footprints, more efficient air traffic management, market-based measures and environmental regulations including an aircraft CO_2 standard. The U.S. has ambitious goals to achieve carbon-neutral growth for aviation by 2020 compared to a 2005 baseline, and to gain absolute reductions in GHG emissions by 2050. At present there are no calculations of the extent to which measures individually or cumulatively may affect aviation's CO_2 emissions. Moreover, there are large uncertainties regarding aviation's impact on climate. The FAA, with support from the U.S. Global Change Research Program and its participating federal agencies (e. g., NASA, NOAA, EPA, and DOE), has developed the Aviation Climate Change Research Initiative (ACCRI) in an effort to advance scientific understanding of regional and global climate impacts of aircraft emissions, with quantified uncertainties for current and projected aviation scenarios under changing atmospheric conditions.[31]

[30] FAA Order 1050.1E, Change 1, Guidance Memo#3. To: FAA Lines of Business and Managers with NEPA Responsibilities. From: Julie Marks, FAA AEE-400, Prepared by Thomas Cuddy, FAA AEE-400. Subject: Considering Greenhouse Gases and Climate Under the National Environmental Policy Act (NEPA): Interim Guidance. January 12, 2012.

[31] Nathan Brown, et. al. *The U.S. Strategy for Tackling Aviation Climate Impacts,* (2010). 27th International Congress of the Aeronautical Sciences.

C.7 EMISSIONS DISPERSION (HOT SPOT ANALYSIS)

A hot spot analysis is needed whenever a Federal action is expected to cause an increase in traffic volumes at nearby intersections that could potentially cause an exceedence of the CO standard or have a significant impact on the level of service at the intersection. A dispersion analysis was conducted to determine whether CO emissions due to proposed new GAV trips at the proposed new roadway intersection on Rockaway Boulevard would result in unacceptably high emissions levels in public areas. The dispersion computer model develops a mathematical approximation of future pollution levels using input parameters that include source emissions, meteorological conditions, and theoretical receptor locations. The dispersion analysis was conducted using the same FAA EDMS Version 5.1.4 computer model.

In order to show the total potential emissions concentration at each theoretical receptor location, background concentrations were added to the sources calculated by EDMS. The background concentration is a level of pollutant concentration that is not directly attributable to the emissions from any one source or roadway. Rather it is the result of air quality monitoring networks throughout the study area. The existing condition background concentrations, obtained from the Department of Environmental Conservation's monitoring network in Queens County were used for the projected future levels at JFK.[32]

The estimated probable total maximum carbon monoxide concentrations at each receptor under the No-Build/No-Action and the Proposed Action are provided in **Table C-16** and **Table C-17**. As the table shows, none of the NAAQS would be exceeded under the Proposed Action.

[32] Department of Environmental Conservation. New York State Ambient Air Quality Report for 2011. Accessed online July 2013. Region 2 Air Quality Data, Highest Values for Queens College 2 monitor were used.

Table C-16
MAXIMUM EMISSIONS DISPERSION SUMMARY
8-HOUR CARBON MONOXIDE (CO) - USEPA Standard 9 PPM
John F. Kennedy International Airport

ALTERNATIVES	8- HOUR CARBON MONOXIDE CONCENTRATIONS (PPM) DISPERSION RECEPTORS							
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**
2015 No Action	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Background	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
Total	**1.8**	**1.8**	**1.8**	**1.8**	**1.8**	**1.8**	**1.8**	**1.8**
2015 Proposed Action	0.003	0.003	0.003	0.003	0.002	0.002	0.003	0.003
Background	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
Total	**1.8**	**1.8**	**1.8**	**1.8**	**1.8**	**1.8**	**1.8**	**1.8**
2020 No Action	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Background	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
Total	**1.8**	**1.8**	**1.8**	**1.8**	**1.8**	**1.8**	**1.8**	**1.8**
2020 Proposed Action	0.003	0.003	0.003	0.003	0.002	0.002	0.003	0.003
Background	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
Total	**1.8**	**1.8**	**1.8**	**1.8**	**1.8**	**1.8**	**1.8**	**1.8**

Note: Pollutant concentrations are given in parts per million (PPM). USEPA is the U.S. Environmental Protection Agency.
Sources: EDMS Version 5.1.4. Landrum & Brown analysis, 2013.

Table C-17
MAXIMUM EMISSIONS DISPERSION SUMMARY
1-HOUR CARBON MONOXIDE (CO) - USEPA Standard 35 PPM
John F. Kennedy International Airport

ALTERNATIVES	1- HOUR CARBON MONOXIDE CONCENTRATIONS (PPM) DISPERSION RECEPTORS							
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**
2015 No Action	0.004	0.004	0.004	0.004	0.005	0.007	0.007	0.007
Background	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
Total	**2.1**	**2.1**	**2.1**	**2.1**	**2.1**	**2.1**	**2.1**	**2.1**
2015 Proposed Action	0.010	0.009	0.009	0.009	0.010	0.008	0.010	0.011
Background	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
Total	**2.1**	**2.1**	**2.1**	**2.1**	**2.1**	**2.1**	**2.1**	**2.1**
2020 No Action	0.004	0.004	0.004	0.004	0.005	0.007	0.007	0.007
Background	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
Total	**2.1**	**2.1**	**2.1**	**2.1**	**2.1**	**2.1**	**2.1**	**2.1**
2020 Proposed Action	0.009	0.009	0.009	0.009	0.010	0.008	0.010	0.011
Background	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
Total	**2.1**	**2.1**	**2.1**	**2.1**	**2.1**	**2.1**	**2.1**	**2.1**

Note: Pollutant concentrations are given in parts per million (PPM). USEPA is the U.S. Environmental Protection Agency.
Sources: EDMS Version 5.1.4. Landrum & Brown analysis, 2013.

C.8 RESULTS

The air quality assessment demonstrates that construction and implementation of the Proposed Action would not cause an increase in air emissions above the applicable *de minimis* thresholds. The Proposed Action would actually decrease emissions as compared to the No-Build/No-Action. Therefore, the Proposed Action conforms to the New York SIPs and the CAA because the Proposed Action would not exceed the *de minimis* thresholds established by the USEPA for the criteria pollutants. In addition, the hot spot analysis shows that the operation of the Proposed Action would not create any new violation of the NAAQS, delay the attainment of any NAAQS, nor increase the frequency or severity of any existing violations of the NAAQS.

The Port Authority would be required to ensure fugitive dust controls are implemented and that any applicable local, state, or Federal air quality permits would be obtained prior to construction. As a result, no adverse impact on local or regional air quality is expected by implementation of the Proposed Action. No further analysis or reporting is required under the Clean Air Act or NEPA.

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ATTACHMENT 1
GLOSSARY

Airport planning and the Environmental Assessment (EA) process require the use of many technical terms. Some of the most important terms are defined in this section. Terms in *italics* are defined separately in this glossary.

Air Quality Control Region (AQCR) An EPA designated interstate or intrastate geographic region that has significant air pollution or the potential for significant air pollution and, due to topography, meteorology, etc., needs a common air quality control strategy. The region includes all the counties that are affected by or have sources that contribute directly to the air quality of that region.

Attainment Area – Any area that meets the national primary or secondary ambient air quality standard for a particular criteria pollutant.

Carbon Monoxide (CO) - A *criteria pollutant* that is colorless, odorless gas produced through the incomplete combustion of fossil fuels.

CFRs – Code of Federal Regulations

Clean Air Act (CAA) – The Federal law regulating air quality. The first Clean Air Act (CAA) passed in 1967, required that air quality criteria necessary to protect the public health and welfare be developed. Since 1967, there have been several revisions to the CAA. The Clean Air Act Amendments of 1990 represent the fifth major effort to address clean air legislation.

Conformity – The act of meeting Section 176(c)(1) of the CAAA that requires Federal actions to conform to the SIP for air quality. The action may not increase the severity of an existing violation nor can it delay attainment of standards.

Criteria Pollutants – The six air pollutants listed in the CAA for which the USEPA has established health-based limits. The six criteria pollutants are *carbon monoxide, nitrogen dioxide, lead, sulfur dioxide, particulate matter,* and *ozone*.

De Minimis Thresholds – The de minimis thresholds are considered the thresholds of significance relative to compliance of net emissions under Federal and state air quality regulations, and in determining the potential for significant air quality impacts caused by a Federal action. They are the minimum rates (tons per year) for the Proposed Action above which a General Conformity Determination would be required. De minimis is defined by the *USEPA* as emissions that are insignificant and negligible, with no potential to cause significant adverse air quality impacts. The applicable rates depend on the severity of the nonattainment designation and whether the project is located within the ozone transport region. Also applicable are rates for precursor pollutants, which are NO_x and VOC for ozone, and SO_x for emissions of $PM_{2.5}$.

Dispersion – The process by which atmospheric pollutants disseminate due to wind and vertical stability.

Emissions and Dispersion Modeling System (EDMS) - FAA-required and USEPA-approved emissions inventory and air dispersion model designed specifically to estimate emissions and calculate pollutant concentrations from airport specific sources.

Emission Factor – The rate at which pollutants are emitted into the atmosphere by one source or a combination of sources.

Federal Aviation Administration (FAA) - The Federal agency responsible for insuring the safe and efficient use of the nation's airspace, for fostering civil aeronautics and air commerce, and for supporting the requirements of national defense.

Fugitive Dust – Dust discharged to the atmosphere in an unconfined flow stream such as that from an unpaved road, storage piles, and heavy construction operations.

Hydrocarbons (HC) – Gases that represent unburned and wasted fuel. They come from incomplete combustion of gasoline and from evaporation of petroleum fuels.

Inversion – A thermal gradient created by warm air situated above cooler air. An inversion suppresses turbulent mixing and thus limits the upward dispersion of polluted air.

LTO – LTO refers to an aircraft's landing and takeoff cycle. One aircraft LTO is equivalent to two aircraft operations (one landing and one takeoff). The standard LTO cycle begins when the aircraft crosses into the mixing zone as it approaches the airport on its descent from cruising altitude, lands and taxis to the gate. The cycle continues as the aircraft taxis back out to the runway for takeoff and climbout as its heads out of the mixing zone and back up to cruising altitude. The five specific operating modes in a standard LTO are: approach, taxi/idle-in, taxi/idle-out, takeoff, and climbout. Most aircraft go through this sequence during a complete standard operating cycle.

Maintenance Area (MA) - Any geographic area of the United States previously designated nonattainment pursuant the CAA Amendments of 1990 and subsequently redesignated to attainment.

Mixing Height - The height of the completely mixed portion of atmosphere that begins at the earth's surface and extends to a few thousand feet overhead where the atmosphere becomes fairly stable.

Mobile Source - A moving vehicle that emits pollutants. Such sources include airplanes, automobiles, trucks and ground support equipment.

National Environmental Policy Act of 1969 (NEPA) - The original legislation establishing the environmental review process for proposed Federal actions.

Nitrogen Dioxide (NO_2) – A *criteria pollutant* gas that absorbs sunlight and gives air a reddish-brown color. NO_2 is a subset of the larger set of nitrogen oxides

(*NO_X*). The gas is reactive and forms when fuel is burned at high temperatures and high pressure.

Nitrogen Oxides (NO_X) – See *NO_2*.

National Ambient Air Quality Standard (NAAQS) - Air Quality standards established by the EPA to protect human health (primary standards) and to protect property and aesthetics (secondary standards).

Nonattainment Area– Any geographical area that does not meet (or that contributes to ambient air quality in a nearby area that does not meet) the national primary or secondary ambient air quality standard for any particular *criteria pollutant*.

Ozone (O_3) – A *criteria pollutant* which is not directly emitted, rather, ozone is formed in the atmosphere through photochemical reaction with *nitrogen oxides (NO_X)*, *volatile organic compounds (VOC)*, sunlight, and heat. It is the primary constituent of smog and problems occur many miles away from the pollutant sources. Due to the fact that ozone is not directly emitted and is a regional phenomenon, emissions of NO_x and VOC are evaluated to indicate the likely formation of ozone. Ozone is not evaluated for a project-level emission inventory.

Particulate Matter (PM_{10} & $PM_{2.5}$) – There are two sizes of particulate matter that account for one of the six criteria pollutants. PM_{10}, coarse particles with a diameter of 10 micrometers or less, and $PM_{2.5}$, fine particles with a diameter of 2.5 micrometers or less. Emissions of $PM_{2.5}$ is a subset of emissions of PM_{10}. Particulate matter can be any particle of these sizes, including dust, dirt, and soot. Particulate matter is directly emitted by engine combustion. $PM_{2.5}$ reacts with precursor pollutants VOC, NO*x*, and SO_x gases to form secondary particles.

PPM - Parts per million.

Precursor Pollutant – Pollutant which aid in the formation of *criteria pollutants*. *NO_x* and *VOC* are precursor pollutants to *ozone* development; *SO_x*, NO_x, and VOC are precursors to development of *$PM_{2.5}$*.

State Implementation Plan (SIP) – A plan stating the strategy the state will use to meet and maintain the Federal air quality standards as required under the Clean Air Act (CAA, including the 1990 Amendments). A SIP includes the projected emission budgets and controls for industrial, area, and mobile sources of pollution.

Sulfur Dioxide (SO_2) – A *criteria pollutant* formed when fuel containing sulfur, like coal, oil and jet fuel, is burned and is commonly expressed as SO_X since it is a large subset of sulfur dioxides (SO_2). SO_2 is a colorless gas that is typically identified as having a strong odor. SO_x is a *precursor pollutant* to the formation of *$PM_{2.5}$* emissions.

Sulfur Oxides (SO_X) – See *SO_2*.

Volatile Organic Compound (VOC) – Gases that are emitted from solids or liquids, such as fuel storage, paint, and cleaning fluids. VOC include a variety of chemicals, some which can have short and long-term adverse health effects. VOCs are *precursor pollutants* that react with heat, sunlight and *nitrogen oxides* *(NO_x* to form *ozone (O_3)*. VOC also mix with other gases to form $PM_{2.5}$. VOCs are a subset of TOGs.

Appendix D

APPENDIX D
COMMENTS RECEIVED ON THE MAY 2012 DRAFT ENVIRONMENTAL ASSESSMENT

As discussed in Chapter 1, a Draft EA, *Runway 4L/22R Improvements, John F. Kennedy International Airport,* was prepared and published for public comment in May 2012. Since the publication of the May 2012 Draft EA, the Port Authority has redefined the proposed project to minimize impacts to Idlewild Park (see Chapter 3, Section 3.2 for a description of the revised Proposed Action). All public comments received on the May 2012 Draft EA are included in this appendix. Responses to the comments received on the May 2012 Draft EA are not included due the change in the Proposed Action. However, all of the comments were considered in the preparation of this Revised Draft EA. As stated in Chapter 7, *Public Involvement*, a comment period will occur on this Revised Draft EA from October 17, 2013 to November 18, 2013. All of the comments received during that period will be included in the Final EA along with responses. A public information meeting will be held October 24, 2013 at St. Peter's Church at 7:30 p.m. in collaboration with Eastern Queens Alliance. The church is located at 224-04 147th Avenue, Queens, New York 11413.

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167-14 144th Terrace
Springfield Gardens, NY 11434

27th October, 2012

Mr. Edward Knoesel
The Port Authority of New York & New Jersey
225 Park Avenue South, 9th Floor
New York, NY 10003

Subject: Draft Environmental Assessment Prepared for the Runway 4L/22R Improvements Project at John F. Kennedy International Airport

Dear Mr. Knoesel:

I am writing this letter for myself, my family and all other homeowners who may have already written or others who have not. This is pertaining to the meeting that was held on October 4th, 2012 at St. Peter's Lutheran Church in Rosedale, Queens sponsored by the Eastern Queens Alliance, Inc. We are so disappointed at learning that the Airport wants to extend the above Runway even longer than it already is and the planes will be flying lower.

I have lived in the community for twenty years and have had to put up with the noise, pollution and all the inconveniences, possibly health hazards and to hear that you want to extend the Runway, my answer is a resounding, **absolutely not**.

Please note some of the reasons and ripple effects on why **absolutely not**:

1. Noise monitors not in correct places
2. Emissions from Aircraft
3. Fumes Impacting Asthma
4. Car Alarms/Cradles Walls
5. Windows Vibrating from Low Flying Planes
6. Unknown Health Impacts
7. Effects and Schools/Child Learning
8. Fuel Dumping
9. Safety at Schools
10. Property Values
11. Wildlife Impacts
12. International Arrival at Nights

Above are just a few of our desperate concerns.

We are asking you to please reconsider your plans to extend the Runway as our community is already going through its toughest time. Thank you for the opportunity to comment on the proposed plan. I do await your earliest response.

Respectfully,

Eldoris R. Colthirst
(718) 712-2231

c: Jamaica Eastern Queens Alliance
PO Box 300818
Rosedale, NY 11430

Eastern Queens Alliance, Inc.

PO Box 300818
Jamaica, NY 11430
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Comments on Draft Environmental Assessment
Runway 4L/22R Improvements
John F. Kennedy International Airport
Prepared for US Department of Transportation
Federal Aviation Administration and The Port Authority of NY & NJ
May 2012, Prepared by Landrum & Brown

Date: October 29, 2012

Barbara E. Brown, EQA Chairperson & President, Springfield/Rosedale Community Action Association, Inc.

Lonnie W. Glover, EQA Treasurer & President, SpringGar Community Civic Association, Inc

Bernella Wilcox, Financial Secretary & Board Member, SpringGar Community Civic Association, Inc.

Dwight Johnson, President, Federated Blocks of Laurelton, Inc.

William Perkins, President, Rosedale Civic Association, Inc.

Cynthia Curtin, President, Wayanda Civic Association, Inc.

Patrick L. Evans, Vice Chairperson & President, Springfield Gardens Tax Payer's Association, Inc.

Annette Jennings Bradley, Recording Secretary, Professional Member: Business and Early Childhood Education

Michael Gordon, Chairperson of Wayanda Civic Association, Inc.

Richard Belgrave, Professional Member, Environmental Specialist

Gloria Boyce Charles, Professional Member, Business & Education

Greg Mays, President & CEO, A Better Jamaica, Inc.

Louis Kilkenny, Vice President Springfield/Rosedale Community Action Association, Inc.

Eastern Queens Alliance
Public Comment addressing Environmental Assessment
Runway 4L/22R Improvements John F. Kennedy International Airport

Introduction

The Eastern Queens Alliance (EQA) is a federation of civic associations in Southeast Queens that grew out of the idea to unify, organize mobilize and utilize the talents and potentials of all the residents, civics, neighborhood associations, businesses, clergy and service providers in the area in order to bring about self-determination by acting in concert on mutual concerns and issues. And to use the instruments of power to maintain, preserve, and develop the economic, political, social, moral and cultural stability of the communities within the area; to maintain, stabilize, develop and improve the area's physical environment; to monitor, urge and support the improved delivery of services by the Community Board, elected officials and all city, state and Federal agencies that make decisions which impact upon the lives of those residing in the area.

We submit this comment to the Port Authority of NY & NJ (PANYNJ) and the Federal Aviation Administration (FAA) with the request that an Environmental Impact Statement (EIS) is prepared to further investigate the impacts of the Runway 4L/22R Improvements Project proposed for John F. Kennedy (JFK) Airport. We are concerned that the current conditions experienced in this neighborhood due to airport activities will be exacerbated by this runway project that proposes to move Runway 4L/22R 728 feet closer to the community in Southeast Queens. Our concerns are particularly focused on Noise Pollution; Environmental Justice; Children's Health; Air Quality, and; Land Use. This comment will address the concerns of the Eastern Queens Alliance and community members based on the review of the Draft Environmental Assessment (EA) for this proposed project.

Noise

A highly controversial point relating to land use is if the FAA certifies the EA as a finding of no significant impact (FONSI), it will have considered only the incremental impact of the runway expansion on noise and not the cumulative effect of the existing airport structures, the runway expansion and foreseeable/planned increases in operations. The National Environmental Policy Act (NEPA) requires federal agencies to prepare an EIS for "every … major Federal action significantly affecting the quality of the human environment[1]." An EA is made for the purpose of determining whether an EIS is required[2]. "If *any* 'significant' environmental impacts might result from the proposed agency action then an EIS must be prepared *before* agency action is taken.[3]"

Aircraft noise is a common occurrence for most communities within the U.S. however, for communities neighboring airports the noise is far more detrimental to health and quality of life. A recent GAO study revealed that the FAA expects that by 2024 air traffic for the U.S. will

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[1] 42 U.S.C. § 4332(2)(C) (2006)
[2] 40 C.F.R. § 1508.9 (2011)
[3] Sierra Club v. Peterson, 230 U.S. App. D.C. 352, 717 F.2d 1409, 1415 (D.C. Cir. 1983)

increase 20%[4]. Without any mitigation, the noise impacts at JFK may cause serious harm to the populations in the surrounding communities.

Research into the health impacts of airport noise has grown as airports continue to accommodate larger planes and more passengers. Studies have highlighted the potential physical and mental health links associated with aircraft noise. Stress-related ailments such as hypertension, cardiovascular impacts, and neuroendocrine elevation have been related to chronic noise exposure[5] [6]. Mental health impacts include, lack of sleep, awakening from sleep, lessening of communication in social situations and aggression due to annoyance from chronic aircraft noise[7] [8].

According to the EA prepared for this proposed action, the noise analysis used the FAA's Integrated Noise Model (INM) to produce a 65,70,75 DNL Contour Map to evaluate noise impacts and found no significant impact by the proposed action. This map however is inconsistent with the 2008-2012 Monthly Remote Noise Monitor Readings provided by the PANYNJ. Specifically, the Springfield Gardens (4L/4R) monitor, the noise monitor in the community directly north of the proposed action is located in the 65 DNL zone according to the INM contour map. However, the actual data from the noise monitor reveals that all of the monthly DNL readings for 2012 and 2008, and all but one month in 2011, 2010, 2009 were higher than 65 with many months exceeding 70 DNL. If the noise analysis used in this EA cannot accurately produce a contour map that is representative of actual noise exposure, the projected no significant impact findings cannot be trusted to be accurate. Further, the Noise Analysis disregards cumulative impacts by only comparing the proposal with current and not the baseline of natural quiet and to consider the total impact of aircraft noise on homes and parks nearby. In addition, we contend that the calculations used to determine the 1.5dB increase zone are erroneous and require real data and mathematical proofs, as even simple calculations can show the increase in proximity of the runway to the community will have, on average, a 1.5dB increase over a far larger scale than shown by the EA.

If the FAA, were to conclude that the runway expansion would have no significant impact on the environment of the homes and parks nearby, it would essentially conclude that there is little discernible increased noise intrusion to the homes and parks in the area from the proposed expansion to the No Build/No Action alternative and that the increase in noise levels that would result from the expansion of the runway is negligible because airplanes still take-off and land in the area, even if the runway expansion is not constructed. The EA did acknowledge the existence of noise levels in and above 65 dBA in the area; however, it suggests that since this is an urbanized area the increase in noise is either suitable for the current land use or will not be

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[4] United States Government Accountability Office. (2012). AIRPORT NOISE GRANTS: FAA Needs to Better Ensure Project Eligibility and Improve Strategic Goal and Performance Measures. Washington, DC.

[5] Stasfield, S., & Matheson, M. (2003). Noise Pollution: non-auditory effects on health. British Medical Bulletin, 243-257.

[6] Jarup, L., Dudley, M., Babisch, W. H., Swart, W., Pershagen, G., Bluhm, G., et al. (2005). Hypertension and Exposure to Noise near Airports (HYENA): Study Design and Noise Exposure Assessment. Environmental Health Perspectives, 1473-1478.

[7] United States Environmental Protection Agency. (1978). Noise: A Health Problem. Washington, D.C.: Office of Noise Abatement and Control.

[8] Stasfield, S., & Matheson, M. (2003). Noise Pollution: non-auditory effects on health. British Medical Bulletin, 243-257.

noticed. While recognizing that the take-offs and landings constitute noise events that are higher than background natural quiet during periods when ambient noise levels are low, the EA focuses on the incremental impact and ignores the cumulative impact while making unfounded assumptions about urban populations.

The Eastern Queens Alliance contends that by granting a FONSI the FAA cannot be said to have taken a "hard look"[9] at the problem as it considers only the incremental impacts of the runway expansion and not the total noise impact that will result from the expansion. The EA does not address the cumulative impact in light of other take-offs, landings, and air flights over the homes and parks and the reasonably foreseeable future aircraft activity that will contribute to the cumulative noise impact on homes and parks. Indeed, the EA's statement on cumulative impact is, in part:

> "The cumulative impact of the Proposed Action, when added to the other past, present, and reasonable foreseeable future actions described above, is collectively insignificant given the history of intense urbanization that has occurred in the New York City metropolitan area."[10]

The cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time[11]. The courts, in reviewing whether a federal agency has acted arbitrarily and capriciously in finding no significant environmental impact, have given effect to the plain language of the regulations. While the factual settings differ in some respects from the instant issue, the consistent position in the case law is that, depending on the environmental concern at issue, the agency's EA must give a realistic evaluation of the total impacts and cannot isolate a proposed project, viewing it in a vacuum[12]. Noting that the regulatory definition of cumulative impact specifies that the "'incremental impact of the action' [at issue]" must be considered " 'when added to other past, present, and reasonably foreseeable future actions[13],'" we believe that, consistent with the regulation and purpose of NEPA, "it makes sense to consider the 'incremental impact' of a project for possible cumulative effects by incorporating the effects of other projects into the background 'data base' of the project at issue"[14]. The point, the court stated, was to provide in the EA "sufficient [information] to alert interested members of the public to any arguable cumulative impacts involving other projects"[15]. Further, the court concluded that insofar as *Kleppe v. Sierra Club*[16], "may bear on an agency's duty to consider impacts in a context that realistically includes other pending projects, the [agency] fully complied by planning on the basis of … ultimate completion of the related projects[17]." Similarly, the court in *Peterson*, without regard to any particular NEPA regulation, reversed a finding of no significant impact and a decision to issue certain oil and gas leases in national forests without

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[9] Nat'l Parks & Conserv. Ass'n v. U.S. DOT, 222 F.3d 677 (9th Cir. 2000) (9th Cir. Haw. 2000)
[10] Landrum & Brown. (2012). *Draft Environmental Assessment: Runway 4L/22R Improvements, John F. Kennedy International Airport.* Unpublished manuscript.
[11] 40 C.F.R. § 1508.7
[12] Coal. on Sensible Transp., Inc. v. Dole, 263 U.S. App. D.C. 426, 826 F.2d 60 (D.C. Cir. 1987)
[13] *id.* quoting 40 C.F.R. § 1508.7
[14] *id.* at 70-71
[15] *id.* at 71
[16] Kleppe v. Sierra Club, 427 U.S. 390, 49 L. Ed. 2d 576, 96 S. Ct. 2718 (1976)
[17] Id. at 415 n.26, 49 L. Ed. 2d 576, 96 S. Ct. 2718.

preparing an EIS, remanding the case because the agency had failed, as NEPA requires, to "[fully assess] the [possible] environmental consequences" of activities "which have the potential for disturbing the environment[18]." *Natural Resources Defense Council, Inc. v. Hodel*[19], is to the same effect. There, the agency had failed to consider the cumulative impact, as defined in the Council on Environmental Quality (CEQ) regulations, of simultaneous development in the region on "species, particularly whales and salmon, that migrate through the different planning areas" when it considered only the effect on those species "within the Planning Area" rather than "the interregional effects[20]."

Various airports throughout the world have established programs to address the environmental consequences they have on their community. There are currently 256 airports in the US with Airport Improvement Program grants to conduct Part 150 studies. These airports are using this funding to understand the impacts of noise and provide mitigation measures to communities living in the 65+ DNL contours. Some facilities have even taken this step further to provide mitigation to communities living in the 60+ DNL zones. The only mitigation measures for noise the PANYNJ has performed were to insulate a handful of schools in Queens in 2001. None of the schools in the 65+ DNL zone north of runway 4L/22R and no homes have been insulated by the PANYNJ. (See Appendix A)

While, it is understood that the EA is not intended to be a lengthy document, it must at minimum address the considerations relevant to determining whether an EIS is required. NEPA regulations require that an agency consider cumulative impacts, and the EA fails to address the total noise impact that will result from the runway expansion. Indeed, the FAA's own NEPA policy calls for meaningful consideration of cumulative impact, parroting the language of the NEPA regulations to include proposed projects and past, present, and reasonably foreseeable future actions. Comments submitted by individual community members on the draft EA will call the FAA's attention to the need to consider mitigation measures in view of perceived noise-annoyance levels to persons near the runway. These submitted comments will also express concern about the total impacts of noise on the area, yet the EA contains no analysis of the foreseeable increase of take-offs, landings, and over flights from a more efficient runway system. EQA maintains that each flight may be responsible for a noise level of 55 to 75 dBA and that an increase of 10 dBA correlates to a doubling of loudness such that a commercial jet taking-off or landing may be 4 to 23 times as loud as the natural soundscape. Even in the absence of the regulatory definitions it would be difficult to understand how an agency could determine that an EIS is not required if it had not evaluated actual existing noise impacts as well as those planned impacts that will exist in the foreseeable future. From the case law it is clear that:

> a meaningful cumulative impact analysis must identify (1) the area in which the effects of the proposed project will be felt; (2) the impacts that are expected in that area from the proposed project; (3) other actions--past, present, and proposed, and reasonably foreseeable--that have had or are expected to have impacts in the same area; (4) the impacts or expected impacts from these other actions; and (5) the overall impact that can be expected if the individual impacts are allowed to accumulate. (Fritiofson v. Alexander, 772 F.2d 1225, 1245 (5th Cir. 1985) (citing Cabinet Mtns. Wilderness/Scotchman's Peak

[18] 717 F.2d at 1415

[19] Natural Resources Defense Council v. Hodel, 275 U.S. App. D.C. 69, 296, 865 F.2d 288 (D.C. Cir. 1988)

[20] Id. at 297-99, 865 F.2d 288

Grizzly Bears v. Peterson, 222 U.S. App. D.C. 228, 685 F.2d 678, 683-84 (D.C. Cir. 1982)); *see also Hodel*, Natural Resources Defense Council v. Hodel, 865 F.2d 288, 297-99 (1988); City of Carmel-by-the-Sea v. U.S. DOT, 123 F.3d 1142, 1160 (9th Cir. 1997)).

The EA, quoting CEQ guidance on preparation of an EIS, may assume that the no-action alternative is properly viewed as a "benchmark against which decision makers may compare the magnitude of environmental effects" of actions. However, neither the guidance nor the case law relieves the FAA of the duty to meaningfully consider cumulative impact in the EA. The EA has impermissibly taken a foreshortened view of the impacts which could result from the act of constructing and operating the runway expansion[21].

The city of New York has already drawn up recommendations in a report to reduce sound levels related to airports under NYC Administrative Code 40 C.F.R. pts. 24-205. The recommendations are steps that would be beneficial to this community and would show that the PANYNJ has good will to its surrounding neighbors. The report, including the recommendations can be found at the following address: *www.nyc.gov/html/dep/pdf/**noise/airport-noise**-study.pdf*

We would also request the PANYNJ ensure better compliance and lighter planes during nighttime hours (10pm-7am). This should be enforced by increasing the current noise violation fee from $250 to an amount that will make an airline reevaluate their practices. Some airports charge upwards of $5,000 for these violations.

Our request to the PANYNJ is similar to many airport communities around the county – address the noise effects the community is already facing before extending a runway closer to the community. This runway extension could add unknown changes that will affect the health and peace of mind of the neighborhood's community members. The analysis in the EA, in other words, cannot treat the identified environmental concern in a vacuum, as an incremental approach attempts. Without analyzing the total noise impact on the area as a result of the construction and operation of the runway expansion, as of this EA, the FAA is not in a position to determine whether the additional noise that is projected to come from the expansion of the runway would cause a significant environmental impact on the area and, thus, requires preparation of an EIS.

Environmental Justice

The CEQ has promulgated regulations implementing NEPA[22]. Under these regulations, an agency is required to prepare an EA in order to determine whether to prepare an EIS or a FONSI[23].

Eastern Queens Alliance contends that the preparation of a FONSI by the FAA will violate NEPA, a Department of Transportation ("DOT") Environmental Justice Order, and Executive Order No. 12898 by failing to evaluate or develop alternative plans which do not have adverse impacts which weigh disproportionately high on minority or low-income populations. The EA position on impacts to the minority population does not take into consideration the cumulative

[21] *Peterson*, Sierra Club v. Peterson, 717 F.2d 1409, 1413 (1983)
[22] Id. § 1500.1
[23] Id. § 1501.4; 1508.9

effects of the runway expansion on a "79.5% to 80.0%[24]" minority population and only look at the incremental increase of adverse effects. As will be stated infra, in more depth, this is faulty logic and violates the good faith embodied in the aforementioned acts, regulations and orders. Even though both the Environmental Justice Order and Executive Order specifically state that they do not create any right to judicial review for alleged noncompliance this lack of an evaluation and development of alternatives as well as the incremental approach to environmental justice will negate any FAA claim of giving the EA a 'hard look' under NEPA and allow potential challenges under the APA for a violation of the NEPA, having exhausted available administrative remedies prior to bringing an action[25].

NEPA's regulations require agencies to "rigorously explore and objectively evaluate all reasonable alternatives.[26]" "The 'existence of a viable but unexamined alternative renders an environmental assessment inadequate.[27]'" The touchstone for an EA's selection and discussion of alternatives fosters informed decision-making and informed public participation.[28]" The EA has failed to give specifics of any alternative, except for a No Build/No Action, that may help to inform the public and allow them to participate in a meaningful fashion. The only mention of an alternative is Proposal 16, which is summarily discounted without detailed discussion and only mentions the invasion of wetlands, which the current plan proposes as well. A certification of FONSI by the FAA would conclude to the community that the FAA arbitrarily and capriciously reviewed the EA in order to reach a predetermined result[29].

It is also the duty of the FAA to "study, develop, and describe appropriate alternatives.[30]" If the certification of FONSI is granted by the FAA, it has not then fulfilled that requirement and need to develop and discuss a number of alternatives. In City of Angoon, the courts stated that the parties claiming a NEPA violation "had not offered a specific, detailed counterproposal that had a chance of success [and that] those who challenge an EIS bear a responsibility 'to structure their participation so that it is meaningful, so that it alerts the agency to the intervenors' position and contentions.[31]'" It is our desire to effectuate a structure so that the community, Eastern Queens Alliance, the PANYNJ, FAA, and all other parties can develop a meaningful plan that satisfies all stakeholders without the costly delay of protracted litigation.

Therefore, even though an agency is required to examine only those alternatives necessary to permit a reasoned choice,[32]" by granting a FONSI in light of this EA, the FAA will not be able to fulfill its obligation under NEPA to "rigorously explore and objectively evaluate all reasonable alternatives.[33]" Eastern Queens Alliance asserts that the preparers of the EA arbitrarily chose the

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[24] Landrum & Brown. (2012). Draft Environmental Assessment: Runway 4L/22R Improvements, John F. Kennedy International Airport. Unpublished manuscript.
[25] Winnemem Wintu Tribe v. U.S. DOI, 725 F. Supp. 2d 1119, 1139 (E.D. Cal. 2010)
[26] 40 C.F.R. § 1502.14
[27] Res. Ltd. v. Robertson, 35 F.3d 1300, 1307 (9th Cir. 1994) (quoting Idaho Conserv. League v. Mumma, 956 F.2d 1508, 1519 (9th Cir. 1992)
[28] Angoon v. Hodel, 803 F.2d 1016, 1020 (9th Cir. 1986)
[29] 40 C.F.R. § 1502.14
[30] 42 U.S.C. § 4332(2)(E)
[31] Angoon, 803 F.2d at 1022 (quoting Vt. Yankee Nuclear Power Corp. v. Natural Resources Defense Council, 435 U.S. 519, 553, 55 L. Ed. 2d 460, 98 S. Ct. 1197 (1978))
[32] Ass'n of Pub. Agency Customers v. Bonneville Power Admin., 126 F.3d 1158, 1185 (9th Cir. 1997)
[33] 40 C.F.R. § 1502.14

plan submitted in the EA and ignored potential alternative(s) which do not infringe upon the population of Eastern Queens and Nassau County. The Eastern Queens Alliance propose the FAA require an EIS and mandate the contracting company to work directly with Eastern Queens Alliance and other community groups to create specific and feasible alternatives that would reduce the burden of adverse effects on the minority community while still allowing runway improvements.

Children's Environmental Health and Safety

An area of great concern is the health and well-being of children living in the community north of runway 4L/22R. With little mitigation in place for noise, a specific worry is what impact this chronic exposure has on children currently and in the long-term.

Most studies on airport impacts to children have reviewed school-related achievement. These are highly useful in linking detrimental effects aircraft noise has on children's reading skills, attention spans, cognitive functions, and overall school failure rates[34 35 36]. Studies that produce such findings are the motivation behind airports' mitigation plans to insulate schools. However, our concern is that children don't spend all their time at school. Young children of pre-school age or children home after school are still susceptible to aircraft impacts even if their school has been insulated.

Studies conducted to understand the impacts of noise at home find that young children whom live or play in noisy environments may never develop listening skills necessary at the point they reach school age. Chronic noise exposure has also need linked to high levels of annoyance in children which is generally defined as "a mixture of anger, fear, and mild irritation." With the long-term health effects of such mental states unknown, we urge the PANYNJ and the FAA to initiate further studies with an EIS of this proposed project and make more of an effort to mitigate the impacts aircrafts have on this community before exposing the community youth to increased disruptions at school and home.

Air Quality

JFK and its surrounding neighborhoods are in an air quality region of non-attainment for Ozone (8hr), $PM_{2.5}$, and until recently CO which is now in maintenance status. All of these pollutants have an impact on human and environmental health. Ozone has direct effects on respiratory tracts and can lead to diseases such as asthma or bronchitis. On average New York City residents have consistently higher asthma rates that the rest of the state. These health effects can be compounded with the regions non-attainment for $PM_{2.5}$ which is produced by vehicle combustion and reactions with Volatile Organic Compounds and SOx and NOx. Currently there is no air quality monitoring stations in Queens County near JFK to verify the emission levels produced by the airport.

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[34] Evans, G., & Maxwell, L. (1997). Chronic Noise Exposure and Reading Deficits: The Mediation Effects of Language Aquisition. Environment and Behavior, 638.

[35] Haines, M., Stansfield, S., Job, R., Berglund, B., & Head, J. (2001). Chronic Aircraft Noise Exposure, Stress Responses, Mental Health and Cognitive Performance in School Children. *Psychological Medicine*, 265-277.

[36] Federal Interagency Committee on Aviation Noise. (2007). Findings of the FICAN Pilot Study on the Relationship Between Aircraft Noise Reduction and Changes in Standardized Test Scores. Washington, DC: FICAN.

Carbon dioxides, volatile organic compounds (VOCs) and nitrogen oxides (NOx)-- the air pollutants emitted by aircraft and airport-related industry—release a variety of toxic chemicals such a benzene and formaldehyde. A 1993 EPA health risk assessment concluded that aircraft engines were responsible for approximately 10.5 percent of the cancer cases within a 16-square-mile area surrounding Chicago's Midway airport. The National Resources Defense Council warns"the same conclusion might apply to people living immediately adjacent to airports all over the country.[37]"

The proposed action presented in the EA states there will be an improvement in air quality because of the potential for reduced taxi time. However, the proposal also shows a foreseeable increase of over 250 aircrafts per day using the airport. The effect of the runway extension on the number of aircraft that can use JFK is significant, at a foreseeable increase of approximately 25%. The proposed action should take into account these increases as a result of increased runway usage and any shifts in emissions that would potentially be directed over the neighborhood north of 4L/22R.

In addition to the omission of foreseeable increases in airport traffic, the GHG measurements and modeling used by L&B are in conflict with a 2009 PANYNJ study on Greenhouse gasses.[38] The PANYNJ study places total GHG emissions from JFK airport and operations at 1,570,818 metric tons CO_2 equivalent; whereas the figures provided by L&B show only 460,669 annual metric tons of CO_2. This purported decrease of 79% is either (1) erroneous, or (2) represents a drastic decrease in emissions that should be carried over into the 2015 No-Build/No-Action plan.

Because of the non-attainment status of the air quality region JFK is located in, the airport is eligible for funding through the Voluntary Airport Low Emissions (VALE) program. The FAA program helps airports reduce all sources of ground emissions and meet state air quality requirements of the Clean Air Act. Through the program Airport Improvement Program funding would cover 75% of costs to JFK for such a program. The remaining 25% could be covered by Passenger Facility Charge funding. The Eastern Queens Alliance requests the PANYNJ further evaluates the impact this proposed project will have on the air quality in the areas of South East Queens through an EIS. We also request the PANYNJ take advantage of available funds from the FAA for establishing a VALE program at JFK airport.

Land Use

Impact to Wetlands and Idlewild Park Preserve

An EA should analyze both the direct and indirect impacts of a proposed action[39]. Indirect impacts are defined as being caused by the action and are later in time or farther removed in distance but still reasonably foreseeable[40]. Eastern Queens Alliance believes that in granting a FONSI the FAA will have violated NEPA by their inadequate analysis of impacts on wetlands at the north of the runway expansion, both direct and indirect. After reviewing the EA, especially chapters 4 and 5, we believe that the indirect impact on wetlands analysis is not adequate to the

[37] Skolnick, Sharon. (2001). *Exposing Airports' Poison Circles.* Earth Island Journal. 15, 4.
[38] Southern Research Institute. (2009). Greenhouse Gas Emissions Inventory for the Port Authority of New York and New Jersey. (Prepared for the Port Authority of New York & New Jersey).
[39] Custer Cnty. Action Ass'n v. Garvey, 256 F.3d 1024, 1035 (10th Cir. 2001)
[40] 40 C.F.R. § 1508.8(b)

point of being arbitrary and capricious. In addition, we contend that NEPA will be violated because the EA: (1) failed to identify and classify into subcategories the wetlands located between Rockaway Blvd., and the current airport property boundary, (2) failed to take actual field data relating to environmental impacts of the proposed runway project, and (3) failed to disclose the necessity of removing and/or 'topping' trees in Idlewild Park Preserve in the EA.

We argue that the EA erred by failing to consider the environmental impacts of cumulative or induced growth, thereby precluding a true comparison of alternatives. The EA shows conflicting data in regards to the destruction or filling of wetlands towards the north end of the runway and summarily and without discussion dismisses or disregards the foreseeable increase in air traffic, and thus noise, pollution, and vibrations related to the increased efficiency of the runway and the airport as a whole. In addition, the EA does not validate reasoning why one wetland is more important than another. The proposed plan impacts wetlands at the head of Jamaica Bay and by association could potentially do significant harm to the Bay itself.

We further allege that the EA improperly omitted from its analysis the impact to Idlewild Park Preserve. In a public hearing on October 4, 2012 to discuss the impacts of the proposed runway expansion the issue of tree-tops in Idlewild Park Preserve were mentioned. The PANYNJ representative noted that the trees would have to be removed, cut down, or topped to meet FAA safety standards. There is no mention of this significant impact in the EA nor is there a discussion of the impact this will have to the Peregrine Falcon (*Falco peregrinus)*, a New York State Endangered Species, that may nest in the tops of trees of the height in Idlewild Park Preserve. The Preserve, as designated by New York City, is a wildlife refuge officially part of New York City's Forever Wild Program (See Appendix B) and therefore, is entitled to § 4(f) protections[41]. § 4(f) requires, in part, that the Secretary of Transportation not approve any project which requires the use of *publicly* owned land from a park, recreation area, or wildlife and waterfowl refuge of national, state, or local significance or *any land* from an historic site of national, state, or local significance *unless* the Secretary *finds there is no feasible and prudent alternative* to the use of such land (see comments supra for discussion of alternatives), and that all possible planning has been done to minimize harm to that protected area. According to the EA representative, the trees are obstructions to air navigation under the United States Federal Aviation Administration regulations, making them potential hazards to aeronautical safety that they will be obligated to remediate. However, we assert that because the trees are located in wetlands, protected by the Tidal Wetlands Enforcement Policy[42], the FAA will need to obtain permission from multiple state and local organizations before trimming or removing trees and thus making the runway safe under FAA Regulations. The federal regulation of airport safety does not preempt state and local environmental laws which were created because any impact to tidal wetlands can be significant. Yet, there is no discussion of how this hurdle will be handled nor that the hurdle even exists, once again showing that the EA is incomplete, based on poor data, and does not allow the community an adequate opportunity to evaluate and improve the proposal.

In continuing with the inadequacy of the EA in relation to land use, the preparers analysis on Idlewild Park Preserve, all 346 acres is required, yet omitted. The uninterrupted and purposeful use by the public of the property for almost thirty years and a New York City designation of

[41] Nat'l Wildlife Fed'n v. Coleman, 529 F.2d 359, 370 (5th Cir. 1976)
[42] NYS N.Y. Envtl. Conserv. Law, 42 U.S.C. §§ 1-0101, 3-0301, 25-0302

Forever Wild makes these lands a public park and recreation area of state and local significance within the meaning of § 4(f). There is no mention of the increases in noise and pollution from Rockaway Blvd., and the airport which will occur once trees from this historical wetland have been removed, cut down, or topped. Accordingly, an EIS is required, and will have to determine whether (1) there are no prudent and feasible alternatives to using the Idlewild Park Preserve and the NYSEDC land for the project, and (2) whether the project includes all possible planning to minimize whatever harms will result to the Idlewild Park Preserve and the NYSEDC property. If a FONSI is granted, the omittance of the use of publicly owned land from Idlewild Park Preserve for this runway expansion would violate the CEQ guidelines that suggest an EIS be prepared when the impacts are controversial [substantial dispute] as to the size, nature, and effect of the major federal action[43].

Land Use

Construction of New Interchange

An issue related to land use that is only briefly mentioned is the construction of a new interchange from Rockaway Blvd., to the airport access roads. In section 5.3.3, the discussion of a new public access road to JFK airport is summarily dismissed as there is currently little traffic on North Boundary Road. However, the EA does not take into account the foreseeable effects of having a new public access point to the airport from a major thoroughfare.
NEPA requires federal agencies contemplating major action to follow a procedure -- preparing and considering an EIS -- whenever the proposed action may significantly affect the quality of the human environment. 42 U.S.C. § 4332(2)(C). Failing to follow this procedure creates a risk that serious and avoidable environmental consequences of the action, which an EIS would reveal, will not be brought to the attention of agency decision makers. Thus, if a particular project does in fact entail serious but nonobvious environmental impacts, agency failure to prepare an EIS may mean that the last opportunity to eliminate or minimize these impacts, in accordance with NEPA's broad objectives, has been lost. The interchange alone is grounds for requiring an EIS, as can be seen in *Davis v. Coleman,* "an interchange on a major highway in an area where no connecting road currently exists will have a substantial impact on a number of environmental factors.[44]" That this is so is recognized in the Department of Transportation's own PPM 90-1, August 24, 1971, 2 Env. L. Rep. 46106, which governs preparation of impact statements for federal-aid highway projects:

> The improved access and transportation afforded by a highway may generate other related actions that could reach major proportion and which would be difficult to rescind. An example would be a highway improvement which provides access to a non-accessible area, acting as a catalyst for industrial, commercial, or residential development of the area. Id., Appendix E, para. 2f, 2 Env. L. Rep. at 46110.

The impact this new interchange will have on the communities in the area once completed and the foreseeable impacts must be evaluated under an EIS in order to measure these unknowns properly.

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[43] Hanly v. Kleindienst, 471 F.2d 823 (2d Cir. 1972)
[44] Davis v. Coleman, 521 F.2d 661 (9th Cir. 1975)

Land Use

Value of Homes

In 1994 the consulting firm of Booz-Allen & Hamilton, Inc. prepared a report titled *The Effect of Airport Noise on Housing Values: A Summary Report* for the Federal Aviation Administration[45]. The report describes a methodology for evaluating the impact of noise on housing values. The methodology essentially compares market prices in similar neighborhoods that differ only in the level of airport-related noise. In pilot studies using this method, Booz-Allen found that the effect of noise on prices was highest in moderately priced and expensive neighborhoods. In two paired moderately priced neighborhoods north of Los Angeles International Airport, the study found "an average **18.6 percent** higher property value in the quiet neighborhood, or **1.33 percent per dB of additional quiet**.

A 1996 study funded by the Legislature of the State of Washington[46] used a somewhat similar methodology and found that the proposed expansion of Seattle-Tacoma Airport would cost five nearby cities $500 million in property values and $22 million in real-estate tax revenue. The study of single-family homes -- all in "very good" condition, with three or more bedrooms and two or more baths, and excluding the most expensive and inexpensive units to provide more representative comparisons -- found that "a housing unit in the immediate vicinity of the airport would sell for **10.1 percent** more -- if it were located elsewhere." The Washington study also concluded: "all other things remaining equal, the value of a house and lot increases by about 3.4% for every quarter of a mile the house is farther away from being directly underneath the flight track of departing/approaching jet aircraft."

In 1997 Randall Bell, MAI, Certified General Real Estate Appraiser, licensed real estate broker, and instructor for the Appraisal Institute, provided the results of his own professional analysis to the Orange County Board of Supervisors[47]. Comparing sales of 190 comparable properties over six months in communities near Los Angeles International Airport, John Wayne Airport, and Ontario Airport, Bell found a diminution in value due to airport proximity averaging **27.4 percent**. Bell has also developed a list of over 200 conditions that impact real estate values -- airport proximity is categorized as a "detrimental condition. In addition, the EA does not take into consideration all of the impacted communities in south eastern Queens. It specifically ignored the communities of Springfield Gardens, Rosedale, and Laurelton. The omission of a discussion of communities directly around the affected area is a significant omission that further establishes the inadequacy of the EA and the need for an EIS[48]. "The Secretary shall designate critical habitat, and make revisions thereto, . . . on the basis of the best scientific data available and after taking into consideration the economic impact, and any other relevant impact, of specifying any particular area as critical habitat." (Emphasis added.) It is rudimentary administrative law that discretion as to the substance of the ultimate decision does not confer

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[45] Booz-Allen & Hamilton, Inc. (1994). *Effect of Airport Noise on Housing Values: A Summary Report.* (Prepared for the Federal Aviation Administration, Office of Environment and Energy.)

[46] Helmuth, Obata, & Kassabaum, Inc. (1997) *SEA-TAC International Airport Impact Mitigation Study.* (Prepared for the Wasington State Department of Community, Trade and Economic Development.)

[47] Bell, Randall. (1999). "The Impact of Airport Noise on Residential Property Values." PriceWaterhouseCoopers (unpublished paper).

[48] SEC v. Chenery Corp., 318 U.S. 80, 94-95, 87 L. Ed. 626, 63 S. Ct. 454 (1943)

discretion to ignore the required procedures of decision making. And any omission of this nature is reviewable under 40 C.F.R. pt. 1540 (g).

In addition, a special set of takings problems has resulted from airplane flights, including problems of overflights, pollution, noise and nuisance[49]. The traditional theory that a landowner has rights in the space above the land has resulted in compensation when low flights interfered with those rights. This theory has been extended to the problems on nearby lands, not directly under the flight approaches, which have suffered from noise and fumes of the airplanes. Low-flying aircraft have been held to have taken an easement, or to have constituted a trespass, for which compensation must be given. Airflights even within navigable airspace have been held to be takings, and the prohibition of building structures above a certain height when within certain proximity to the airport has also been held to be a taking.

Therefore, by expanding the runway to the north, this, in essence, places planes, the flight paths and the noise/vibration closer to homes, decreasing their value and possibly creating a nuisance or "taking". From the draft EA provided and the lack of calculations and real data used in noise levels it is impossible to determine the exact decrease in land value and an EIS which utilizes actual data should be implemented to avoid future issues with the runway expansion.

Conclusion

The Airport and Airway Improvement Act of 1982 (AAIA) does not permit the FAA to approve an airport development project that has a significant adverse effect on natural resources unless there is no possible and prudent alternative to the project and every reasonable effort to mitigate the adverse effect has been taken[50]. As noted extensively in this comment, there are several significant adverse effects on natural resources and the population around the proposed runway expansion; however, there is no plan put forth to mitigate these effects. We request that further studies, such as a Part 150 study, a VALE Program Evaluation and a formal Environmental Impact Statement be undertaken with the advice and consent of community organizations so as to properly and meaningfully inform the FAA of the adverse effects and how to properly mitigate them, to the satisfaction of all parties.

As stated earlier NEPA requires a federal agency to prepare an EIS before taking any major action "significantly affecting the quality of the human environment.[51]" The purpose of an EIS is to "provide full and fair discussion of significant environmental impacts and [to] inform decision makers and the public of the reasonable alternatives which would avoid or minimize adverse impacts or enhance the quality of the human environment.[52]" The agency's overall EIS-related obligation is to "take a 'hard look' at the environmental consequences before taking a major action.[53]" At present the EA does not satisfy the 'hard look' obligation and an EIS is required.

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[49] Gardner v. Cnty. of Allegheny, 114 A.2d 491 (Pa. 1955); Ackerman v. Port of Seattle, 348 P.2d 664 (Wash. 1960)
[50] 49 U.S.C. § 47106(c)(1)(B) (2006)
[51] 42 U.S.C. § 4332(2)(C); see Stewart Park & Reserve Coal. v. Slater, 352 F.3d 545, 557 (2d Cir. 2003); Citizens against Burlington, Inc. v. Busey, 290 U.S. App. D.C. 371, 938 F.2d 190, 193 (D.C. Cir. 1991)
[52] 40 C.F.R. § 1502.1
[53] Balt. Gas & Elec. Co. v. Natural Resources Defense Council, 462 U.S. 87, 97, 103 S. Ct. 2246, 76 L. Ed. 2d 437 (1983)

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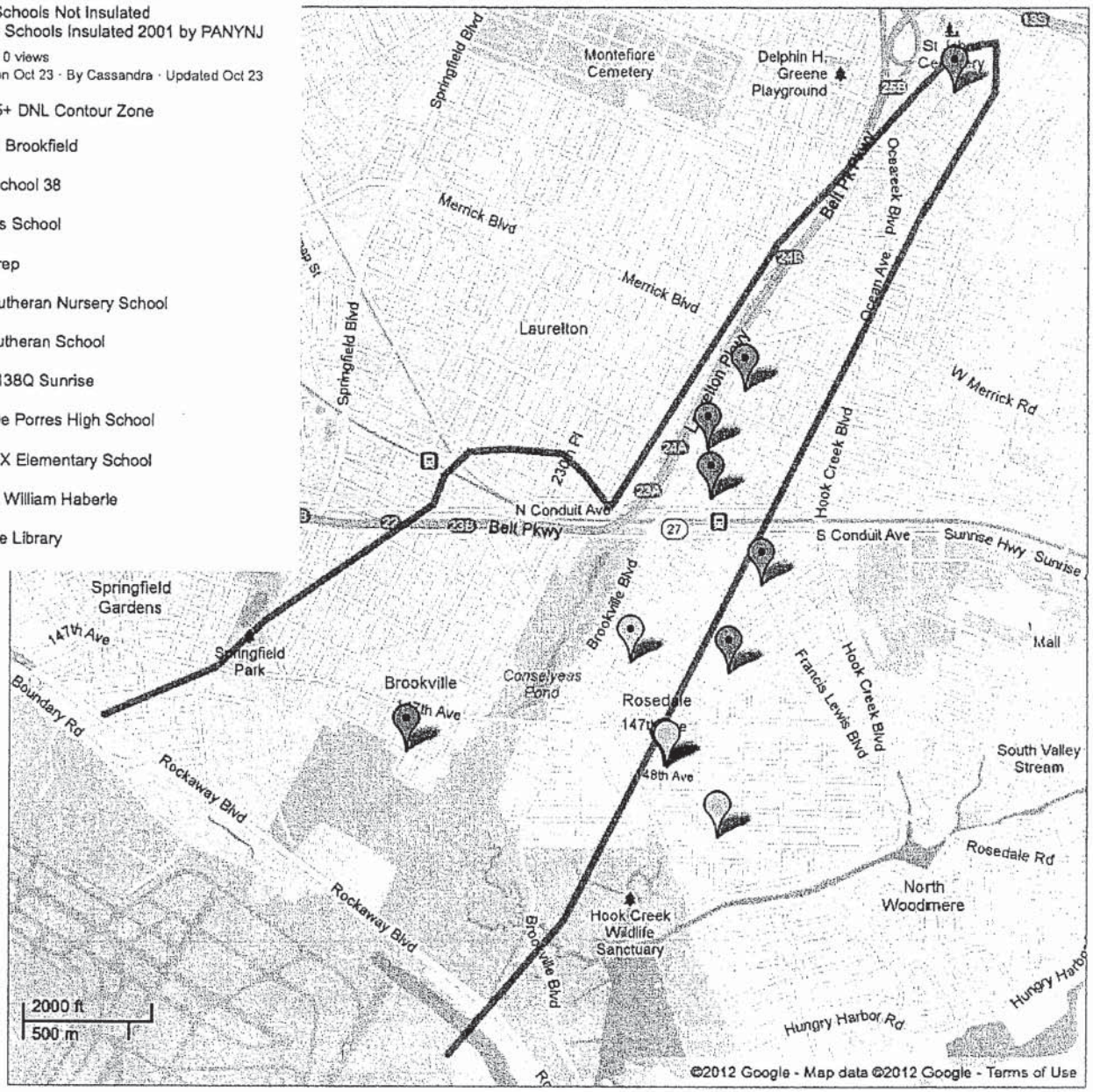
Appendix A – Contour Map with Schools North of Runway 4L/22R

Contour Map - Schools

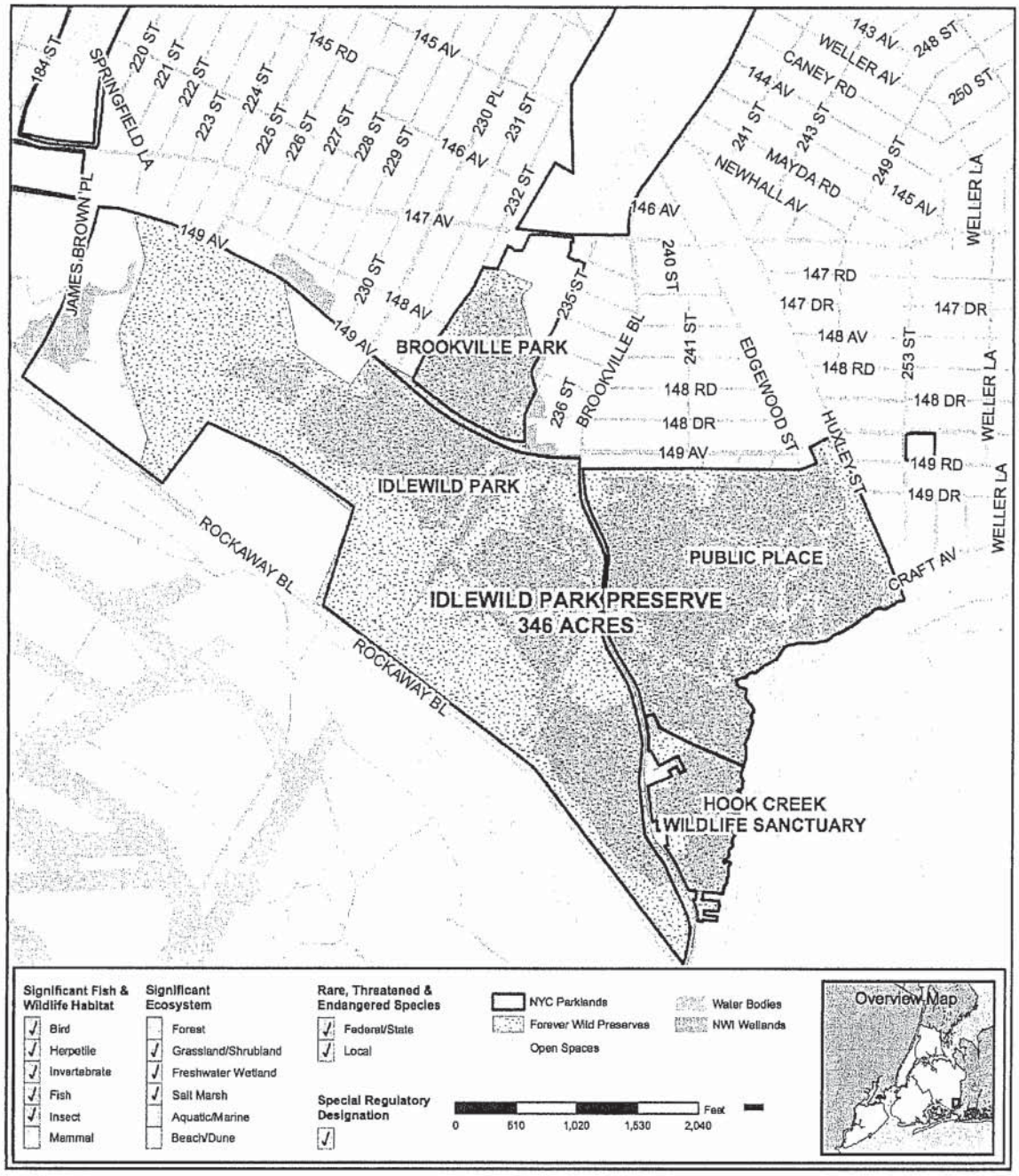
Blue = Schools Not Insulated
Green = Schools Insulated 2001 by PANYNJ

Unlisted · 0 views
Created on Oct 23 · By Cassandra · Updated Oct 23

- North 65+ DNL Contour Zone
- P.S. 181 Brookfield
- Public School 38
- St Clares School
- Mona Prep
- Trinity Lutheran Nursery School
- Christ Lutheran School
- PS / IS 138Q Sunrise
- Martin De Porres High School
- St. Pius X Elementary School
- P.S. 195 William Haberle
- Rosedale Library



Appendix B – Idlewild Park Preserve



City of New York
Parks & Recreation
Natural Resources Group
Arsenal North, 1234 Fifth Avenue, New York, NY 10029

Michael R. Bloomberg, Mayor
Adrian Benepe, Commissioner
Bill Tai, Director
Craig Mandel, GIS/Data Manager

February 2008

FOREVER WILD
IDLEWILD PARK PRESERVE
IDLEWILD PARK (Q392)
HOOK CREEK WILDLIFE SANCTUARY (Q466)
BROOKVILLE PARK (Q008)
PUBLIC PLACE (Q454)
QUEENS, NY

This map is limited by the accuracy of its source data and is intended for illustrative use only.

Spring-Gar Community Civic Association, Inc.
P.O. Box 300283
Jamaica, New York 11430-0283

October 16, 2012

Port Authority of New York & New Jersey
Aviation Department
225 Park Avenue South, 9th Floor
New York, New York 10003
Attention: Mr. Edward Knoesel

RE: Runway 4L/22R Improvements – Public Comments

Dear Mr. Knoesel,

The purpose of this letter is to provide the Port Authority of NY/NJ with comments being submitted on behalf of Spring-Gar Community Civic Association, residents and members, which is the community immediately adjacent to the North of the proposed runway expansions at JFK International Airport.

Although Spring-Gar recognizes JFK International Airport as a major gateway to domestic and International destinations, we feel several environmental assessment issues, specifically related to the increased flights anticipated with NextGen, have not been taken into account related to negative community impact.

Spring-Gar is against the Runway 4L/22R Improvements in its current form for the following reasons:

1. **Aircraft noise** is this most critical issue with Springfield Garden residents surrounding JFK, and the proposed runway extensions to the North will only make noise an even bigger issue for residents and children in our community. The runway extensions at JFK Airport is only the current aviation effort to meet the demands for NextGen, within the next 20 years. Extending and or widening the runway safety zone will only result in the increase of noise, already deafening the community with low flying aircraft at takeoffs and landings.
    - Requirement: Noise studies conducted report the average DNL. The average DNL and the expected DNL increase is not an accurate depiction of the noise level. Additional studies should be done to quantify the existing and anticipated DNL. The new studies should report DNL utilizing XmR Charts to accurately reflect its moving average and range.
2. **Fuel emissions** by airport aircraft and the surrounding air cargo facilities vehicles in the immediate area, have a long term impact on the health and well being of the Springfield Garden residents. Currently, there is no environmental monitor to measure air quality anywhere in close proximity of this or other runways. How can the Port Authority of NY/NJ state there is NO environmental impact to the health of the adjacent community, when there are no monitors to measure current air quality. Not to mention the impact that NextGen will add to this health problem with the planned increase in flights and reduce delays.

I agree with this letter.

Mr. Florence David
178-34 146 Rd.
Jamaica New York 11434

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Emailing: What are the Health Effects of Airport Noise and Airport Pollution.h Hide Details

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TO: 'Florence David'

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What are the Health Effects of Airport Noise and Airport Pollution?

Airport noise and pollution linked to increased health problems

From Larry West, former About.com Guide

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- environment and health

Dear EarthTalk: What are the health and environmental issues associated with the airport noise and air pollution at airports?

-- John Cermak, via e-mail

Researchers have known for years that exposure to excessively-loud noise can cause changes in blood pressure as well as changes in sleep and digestive patterns -- all signs of stress on the human body. The very word "noise" itself derives from the Latin word "noxia," which means injury or hurt.

Airport Noise and Pollution Increases Risk for Illness

On a 1997 questionnaire distributed to two groups--one living near a major airport, and the other in a quiet neighborhood--two-thirds of those living near the airport indicated they were bothered by aircraft noise, and most said that it interfered with their daily activities. The same

178-34 146 Rd
Jamaica New York 11434

I agree with this artical Ms Florence David

two-thirds complained more than the other group of sleep difficulties, and also perceived themselves as being in poorer health.

Perhaps even more alarming, the European Commission, which governs the European Union (E.U.), considers living near an airport to be a risk factor for coronary heart disease and stroke, as increased blood pressure from noise pollution can trigger these more serious maladies. The E.U. estimates that 20 percent of Europe's population -- or about 80 million people -- are exposed to airport noise levels it considers unhealthy and unacceptable.

Airport Noise Affects Children

Airport noise can also have negative effects on children's health and development. A 1980 study examining the impact of airport noise on children's health found higher blood pressure in kids living near Los Angeles' LAX airport than in those living farther away. A 1995 German study found a link between chronic noise exposure at Munich's International Airport and elevated nervous system activity and cardiovascular levels in children living nearby. And a 2005 study published in the prestigious British medical journal, *The Lancet*, found that kids living near airports in Britain, Holland and Spain lagged behind their classmates in reading by two months for every five decibel increase above average noise levels in their surroundings. The study also associated aircraft noise with lowered reading comprehension, even after socio-economic differences were considered.

Citizen Groups Concerned About Effects of Airport Noise and Pollution

Living near an airport also means facing significant exposure to air pollution. Jack Saporito of the U.S. Citizens Aviation Watch Association (CAW), a coalition of concerned municipalities and advocacy groups, cites several studies linking pollutants common around airports--such as diesel exhaust, carbon monoxide and leaked chemicals--to cancer, asthma, liver damage, lung disease, lymphoma, myeloid leukemia, and even depression. CAW is lobbying for the clean up of jet engine exhaust as well as the scrapping or modification of airport expansion plans across the country.

Another group working on this issue is Chicago's Alliance of Residents Concerning O'Hare, which lobbies and conducts extensive public education campaigns in an effort to cut noise and pollution and rein in expansion plans at the world's busiest airport. According to the group, five million area residents may be suffering adverse health effects as a result of O'Hare, only one of four major airports in the region.

GOT AN ENVIRONMENTAL QUESTION? Send it to: EarthTalk, c/o E/The Environmental Magazine, P.O. Box 5098, Westport, CT 06881; submit it at: www.emagazine.com/earthtalk/thisweek or e-mail: *earthtalk@emagazine.com.*

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- Information about Airport Noise Law

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Ms Florence Darrell
178-34 146 Rd
Jamaica New-York 11434

I. agree with these articals

10-24-2012

Dear Mr. Knoesel.

As a member of Spring-Gar Civic Association and a home owner at The same address for over 45 years I would like to add a few more coments about this problem with nois and pollution. There should be a fund set up for the homes and the people in them that will be affected by the airport expansion and should include the damage that has already been done to all the people who still have medical problems. There should also be a mention of property damage when These planes fly so low the dishes break and I am not sure but it must do damage to the foundion of these homes. For any improvement the people should always come first before the almighty dollar.

Yours Truly:
Ms Florence David

145-69 225th Street
Springfield Gardens, N.Y. 11413-3521
October 31, 2012

Port Authority of New York & New Jersey
Attention: Mr. Edward Knoesel
Aviation Department
225 Park Avenue South
9th Floor
New York, N.Y. 10003

Re: Runway 4L/22R Improvements

Dear Mr. Knoesel:

The purpose of this letter is to provide my comments regarding the proposed runway improvements at JFK International Airport.

I am against Runway 4l/22R Improvements in its current form for the following reasons:

Allowing planes to land lower/closer to the community will exacerbate my wife's pulmonary hypertension condition.. Concentrating airplane pollutants closer to the ground will make her breathing more and more difficult. There is the potential for the airplane emissions and deteriorating air quality to affect many others within the community who have other medical conditions such as asthma which is becoming increasingly common among young school children. It can even potentially affect future generations.

Your report does not take into account the effects of noise vibration on home structures. Vibrations from Overhead landings/takeoffs have produced cracks in my bedroom ceiling and upstairs hallway in front of bedroom which I have had repaired several times over my thirty-six (36) years of living here. Closer landings/takeoffs will create even more destructive vibrations and result in more cracks. This will result in more costly repairs during my upcoming retirement years.

Idlewild Park is a part of the Jamaica Bay Water Shed Protection Plan and deserves the same protection as Gateway National Park. The park is a critical stopover area along the Atlantic Flyway Migration Route.
Increased noise/vibrations, closer landings, and more concentrated pollutants will disrupt natural wildlife in their living and mating habitats. This affects many more species than your report mentions. In addition to Pergrine Falcons, Osprey and Diamond back Terrapin Turtles, the DEP Jamaica Bay Watershed Protection Plan Report (October 2007) mentions many more species such as the following: Short eared/long eared Owls, Piping Plover, Snowy Egret, Least Bittern, Pied-billed Grebe, Roseate Tern, Common Tern and many others. Also mentioned are threatened trees and plants. Mayor Bloomberg signed New York City "Local Law 71" on July 20, 2005 to protect this area. As a community of amateur gardeners and birdwatchers, we have seen changes over the years from the construction in the area. Many species, like Cranes, have not returned in the numbers we are accustomed to seeing.

These are just a few of the issues that we suggest you consider when making decisions that can affect the quality of life and health of the members of the community living near the airport. Think also of the impact on the plants and animals that have been adversely affected by the changes in their environment.

Sincerely,

John P. Besant
Member, Springfield/Rosedale Community Action Association

St. Peter's Lutheran Church
224-04 147th Avenue
Springfield Gardens, New York 11413
718-481-7240

Mr. Edward Knoesel
Port Authority of NewYork/New Jersey
225 Park Avenue South 9th Floor
New York, New York 10003

November 1, 2012

Dear Mr. Knoesel,

I am surprised and appalled to learn that the Port Authority is planning new arrangements for air traffic at John F. Kennedy Airport which will result in planes flying more frequently and at lower altitudes over our community. We can already stand on our church steps and read the writing on planes flying overhead. We can clearly see their landing gear in action.

At a recent civic association meeting, Port Authority officials said that the plan includes cutting many of our nearby trees. If our trees are blocking the flight path of planes, the solution is not to cut the trees but rather to raise the altitude of the planes and change their path to the JFK runways.

It is simply an accepted fact in our community that whether you are indoors or outside, any conversation is going to be punctuated every ten or fifteen minutes by silence as planes roar overhead. In our church, speakers must constantly pause for the same reason, even though they use a microphone.

In short, bringing planes overhead more often and at lower altitudes is totally unacceptable in our area where most residents are striving to build a quiet, decent, peaceful, harmonious community. The plan as it was presented at the civic meeting seems to show callousness, mean-spiritedness, and ill-will on the part of the Port Authority and the airport. I urge you to put the present plans aside and consider other alternatives.

Sincerely,

Rev. Joy P. Clarke

Rev. Joy P. Clarke, Senior Pastor

Keith and Mary Wingfield
182-05 147th ave Jamaica
New York 11413

October 17, 2012

The Port Authority of NY & NJ
225 Park Avenue South, 9th Floor
New York, NY 10003

Attention: Edward Knoesel

Subject: Draft Environmental Assessment prepared for the Runway 4L/22R Improvements Project at John F. Kennedy International Airport

Dear Sir or Madam,

"Daddy look! Do you see how low that plane is?" Those are the words from my sixteen year old daughter. I took notice on how low that plane was from take off. I guess some pilots use more runway than others when taking off. My wife and I lived at 182-05 147th ave for over twenty two years and became comfortable with the noise over the years. Now we are in our late forties and we have out grown the neighborhood. The noise, traffic, pollution and planes are increasingly starting to bother us. I guess that's why I've been putting in complaints about the noise and traffic coming from the commercial buildings right across form us.

I had a vision, a plan to move our family to a more peaceful and quiet neighborhood sometime in the near future. We are in a position in paying off our mortgages in a few years and would like to take that opportunity to sell our home a little under market value. Take that money and purchase our new home which would become my wife and I retirement home. But our dream are now in jeopardy. Thanks to your new state of the art; wider and longer runway. If my daughter has been noticing how low some planes are flying now. It would be very difficult to sell my home after this extended runway is built. At least I have a selling pitch for the commercial noise and traffic; *What I love about this house is its easy to get and keep tenants. The house is located on a busy street where mass transit is just a step* away. *.A little busy in the day (Traffic) while you're at work and quiet in the evening and weekends when you're home with the family. Also There are new and wider sidewalk and street.* What selling pitch do I have for the incredibly low flying loud planes? Not to mention, the new Airbus which is bigger, louder and capable of landing at JFK airport once the extended runway is completed.

The big picture is; **This extended runway will significantly decrease the value of our home in the near future.** If we were to sell our home after the extension is completed. We would hope that the buyer would not notice the low, loud flying planes by sealing all windows, closing the curtains, turning up the volume on the stereo and TV as the buyer tours the house. When the buyer steps outside, all we can do is hope for a miracle that the pilots suddenly decide to go on strike. If none of this happens, then our dream of moving into our retirement home has been shattered by JFK selfishness.

After the meeting took place at the church, I felt that we had no other alternative but to stand with the community to have this project stopped in its tracks. In addition I will try to become a active member to help and save our community

from this disastrous extension that will destroy the value of our homes that JFK tried so desperately hard to keep under the radar. I just hope you can find some other alternative to accomplish this project then to degrade our community if this project was to continue.

I will also keep in close contact with *Natalia Nkozikowska from the Queens Tribune* and continue to update her and *The Eastern Queens Alliance, Inc* regarding result from this letter. If you would like to contact me! you can in several ways: you can write us or Email us at wingdog2@verizon.net, Call 718-341-2707 or 914-879-5438.

Thank You

Keith and Mary Wingfield

Marie Adam-Ovide
121-12 234th Street
Laurelton, NY 11422

October 25, 2012

The Port Authority of NY and NJ
225 Park Avenue South, 9th Floor
New York, NY 10003
Attn.: Edward Knoesel

Subject: ***Draft Environmental Assessment Prepared for Runway 4L/22R Improvements Project at John F. Kennedy International Airport***

Dear Sir or Madam:

A meeting was held at St. Peter's Church in Rosedale on October 4, 2012, under the auspices of Eastern Queens Alliance, to address concerns over the proposed expansion runways at JFK. One of the representatives of the Port Authority stated that a study was conducted whereby a simulation of the flight patterns showed only a change of .7 decibel; therefore, there was no adverse impact. There would only be a negative impact if the decibel level was to reach 1.5 or over.
The problem is an unknown number of trees would be removed. I questioned him as to whether or not he took into account that the study was conducted while the trees were still there. Once the trees that act as noise buffers are removed the results of the study would be different. He stated that the removal of the trees was not taken into account in the study. He claims there would not be a change from .7 decibel to 1.5 decibel based on his knowledge of the way noise travels.

Are we, the residents of Laurelton, Rosedale and Springfield Gardens to take him at his word? I think not. According to Earl L. Buts, of ***healthguidance.com***, findings show that reduction of sound values in the order of **5 to 10 decibels** are not unusual for wide belts of tall, dense trees. Granted, we are not talking about wide belts of tall trees in the size mentioned by the study; however, if an increase of .8 decibel is possible, the study is rendered null and void. The representative from the Port Authority could not state with certainty that the removal of the trees would not make such a change. Another source, ***agroforestry.net*** stated that planting "noise buffers" composed of trees and shrubs can reduce noise by five (5) to ten (10) decibels. We can then presume that the removal of trees would create the reverse – it can increase the noise level by 5 to 10 decibels.

In light of this, I am calling on the FAA to order the Port Authority to conduct an Environmental Impact Study (EIS), as the community may be negatively impacted by the expansion.

Sincerely,

Marie Adam-Ovide

Marie Adam-Ovide
Laurelton Resident

The Port Authority of NY &NJ
225 Park Avenue South, 9th Floor
New York, NY 10003

Attention Edward Knoesel:

Subject: Draft Environment Assessment prepared for the Runway 4L/22R Improvements Project at John F. Kennedy International Airport

Dear Mr. Knoesel,

My name is Michael Pinckney and I've been a resident of Springfield Gardens since 1986. I have two children who attend public school in the area. I believe expanding the runway 4L/22R will have adverse affects on their learning and academic performance. My children undergo a rigorous academic program that includes weekly exams and testing. They, along with their peers, take state mandated exams that affect their promotion on a yearly basis. As a parent who monitor my children when they do homework and study at home, I have noticed that they are distracted by the noise and vibrations caused in my home by overhead flights.

I believe bringing bigger planes closer to residential schools would increase distractibility to the students and negatively impact their learning. It is unclear from your study what the true noise impact would be on the children in the community because your noise model does not include all of the constantly changing variables in the environment and at the airport, which affect our community. Exhibit 4.2 Existing (2010-2011) Noise Exposure Contour shows two public schools within the 65 DNL zone and 8 public schools on the border of the zone. It does not include private and parochial schools nor does it include the Birch School for special needs children located on Farmers Blvd and South Conduit Ave. My children along with thousands of their peers would be subjected to an average of 65 decibels of noise according to your assessment chart. This level of sound is equivalent to "laughter".

As you know, Mr. Knoesel, young children are extremely susceptible to noise and distractions that will undoubtly hinder them in the learning process. You are also aware that the FAA Integrated Noise Model (INM), used in this assessment, is an average-value model and is designed to estimate long-term average effects using average annual input conditions. Because of this, differences between predicted and measured values can occur because certain local acoustical variables are not averaged, or because they may not be explicitly modeled in INM. Examples of detailed local acoustical variables include temperature profiles, wind gradients, humidity effects, ground absorption, individual aircraft directivity patterns and sound diffraction around terrain, buildings, barriers, etc. Differences may also occur due to errors or improper procedures employed during the collection of the measured data. (http://airportnoiselaw.org/inm.html.)

Your model fails to address the effects of climate change on the noise now and in the future. It does not account for changes in plane departure/arrival pathways that occur

in times of airport congestion and bad weather. Your proposal does not put into safeguards that protect or insulate our schools and children from the increased noise and distractions that will subsequently result from the roadway expansion project. I would seriously urge you to conduct an impact study that includes input from other parents, school administrators, teachers and students.

Sincerely,

Michael Pinckney
184-274 145th Avenue
Springfield Gardens, NY 11413
347-661-2646

October 28, 2012

The Port Authority of NY & NJ
225 Park Avenue South, 9th Floor
New York, NY 10003

Attention: Edward Knoesel

Subject: Draft Environmental Assessment Prepared for the Runway 4L/22R Improve
ments Project at John F. Kennedy International Airport.

This petition letter is to express our legitimate concerns vis-à-vis the proposed extension of the aforementioned runway at the said airport. Apart from an increase in the noise and pollution level, such project would alter our lives negatively altogether.

Starting with section **5.1 Noise** impact, among others, we can say the study seems so inaccurate. That is because right now we already have a hard time enjoying quality time inside of our home and in our backyard due to the noise from the planes, the frequency at which they come around and the low height they maintain as they fly by. A perfect example is that since Wednesday, October 24, 2012, our community has been enduring greater hardship due to a reroute of the planes. Throughout the day, it seemed the planes were rerouted. They departed from the route where they usually arrive. The switch from departure to arrival made the noise level even more unbearable. As the social worker at PS195Q, it was so hard for me to make outside calls to parents as well as in-house calls to teachers. Please bear in mind that the windows to my office were closed. In addition, book shelves, and other furniture were shaking as a result of the same. Colleagues were looking at each other in silence, wondering why things were shaking, until the planes flew so low over the school building. Then everyone realized what was happening. The rerouting continues to date, causing residents to get even less sleep now. Also, please be aware that our home and furniture shake as well as these planes fly by. We constantly have to dust off our furniture due the vibration from the planes. .

Further, in regards to 5.5.3 & 5.5.4 Greeenhouse Gas Emissions/Summary of Impacts, we can tell you that at night especially, the strong smell of the fuel chemical cannot be ignored. It is disheartening to read from the assessment for this proposed project that it will not contribute to an escalation of pollutant in the air, affecting the residents of the said community as well as the wild life the vicinity. Residents' complaints range from and not limited to heart palpitation, headaches and insomnia. How can our students perform at school and the residents be productive at work if they are not able to have a good night sleep? Certainly, we worry about our health and our lives; the current and future impact on our educational and recreational resources. Idlewild is the only environmental resource in our community which contributes a great deal to our children's education. It is alarming to anticipate any harm can come to it. The implementation in route this week alone is a horrible nightmare. Imagine what the proposed project would do.

We know there are other options you can consider for this project that can prevent current and future damages to our community and we encourage you to consider them. Thank you.

Sincerely,

Mimose Nelson, Commutity Social Worker

Cc: The Eastern Queens Alliance, Inc.

Encl.

Community Residents Concerned About The Proposed Runway 4L/22R Improvements Project at John F. Kennedy International Airport

Name	Address
1. [illegible]	245-10 147th Ave 11422
2. Evelyn McCulpin	249-17 147TH ROAD 11422
3. Diana Jackman	253-03 147 Rd Rosa
4. [illegible]	147-25 240 ST Rosedale
5. Velia Garcia	249-46 145th Ave.
6. [illegible]	238-39 149 Ave Rosedale
7. [illegible] Benton	139-40 250th St Rosedale NY 11422
8. [illegible]	144-24 247th Rosedale NY 11422
9. Kathleen [illegible]	245-28 148th Rosedale NY 11422
10. [illegible] HORACE	245-17 Linnehall AVE
11. Cherlotte Veronique	240-18 Edgewood St, Rosedale, NY
12. Cyril Veronique	240-18 Edgewood St Rosedale, NY
13. [illegible]	148-66 Hillcrest ST Rosedale N.Y 11422
14. Rick Jean-Marie	145-45 228 St Rosedale NY 11413
15. Randy Innocent	145-24 Francis St Rosedale NY 11422
16. Tonas [illegible]	159-02 148th Ave
17. Clara Pecoraro	243-26 145th Ave Rosedale, NY 11422
18. Ifechi Akorom	257-17 145th Ave
19. Amarachi Okorom	257-17 145th Ave
20. MARIATE [illegible]	241-06 140th Ave Rosedale 11422
21. KINGSLEY VIGET	" " " "
22. Marie C. Bolidor	244-19 149th Ave Rosedale 11422
23. Jean Denis	" " " "
24. Jean Claude Bolidor	" " " "
25. Nadaipa Denis	" " " "
26. Jean Denis	" " " "
27. Marie Joseph	237 St 147 Ave 11413
28. Marie Mondy	238 St Edgewood Ave.
29. Arnold Nelson	217-06 136 Rd Laurelton NY 11413
30. Claude Ariste	253-14 Craft Ave Rosedale 11422
31. Lilia Ariste	253-14 Craft Ave Rosedale 11422
32. Edith Ariste	253-11 Craft Ave, Rosedale 11422
33. Odelmat Conard	253-11 Craft Ave Rosedale 11422
34. Josette Cadichon	253-26 148th Rd Rosedale 11422
35. Marie Exilie	245-20 148th Rd Rosedale, NY 11422
36. Marie Exilie	245-20 148th Rd Rosedale, NY 11422
37. ROMAIN Ginette	144-26 Weller Lane Rosedale, NY 11422

Community Residents Concerned About The Proposed Runway 4L/22R Improvements Project at John F. Kennedy International Airport

Name	Address
1. Sandra Chase	22517 139 Laurelton NY
2. Ingrid Sabbe Boyd	21919 74th Rd Springfield Gdns
3. Lorne Myers	130-55 223rd St, Laurelton NY 11413
4. Talitha Kelly	220-04-137-Doeno Laurelton NY 11413
5. Christina Montreau	136-49 225th St. Laurelton, NY 11413
6. Bryce Aguilera	148-45 Brookville Blvd Rosedale Queens, NY 11422
7. Renold Joy	144-18 253 St Rosedale, NY 11422
8. Claudel Moise	240-23 Newhall Ave Rosedale NY 11422
9. Carole Moise	240-23 Newhall, Rosedale NY 11422
10. Marie Bazelais	240-23 Newhall Ave, Rosedale NY 11422
11. Gladys Cantave	241-30 Maida Rd Rosedale NY 11422
12. Velia Jean	139-41 264 St Rosedale NY 11422
13. Erwing Armand	241-22 Weller Ave Rosedale NY 11422
14. Sylia Laurence	255-10 149th Ave Rosedale NY 11422
15. Bieteguel, Pierre	Edgewood St NY 11422
16. Maud, Pierre	Edgewood St NY 11422
17. C. Buteau Pierre	Edgewood St NY 11422
18. Marie Lunsean	245-04 147th Ave Rosedale NY 11422
19. Robert Francois	245-04 147th Ave Rosedale NY 11422
20. Robert Francois	245-04 Rosedale NY 11422
21. Samuel Francois	245-04 147th Ave NY 11422
22. Darrella Kim Fyffe	245-14 147th ave Rosedale NY 11422
23. Hilda Jamison	245-14 147th ave Rosedale, NY 11422
24. Caroline Johnson	245-07 147 Ave Rosedale NY 11422
25. Kay-Ann Montague	245-07 147 Ave Rosedale NY 11422
26. Sydney Johnson	245-07 147 Ave Rosedale NY 11422
27. Norma Montague	24507 147 Ave Rosedale NY 11422
28. Antaony Grizzle	24507 147 Ave Rosedale NY 11422
29. Michelle CRANN	255-12 149AVE Rosedale Queens NY 11422
30. Delaneau Eloi	245-26 147th Rosedale NY 11422
31. Marie C Eloi	245-26 147th Rosedale NY 11422
32. Donald Eloi	245-26 147th Ave Rosedale NY 11422
33. Felicia Eloi	245-26 147th Rosedale NY 11422
34. R Jindal	245-30 147th Ave N.Y. 11422
35. Mia Nils	243 18 Newhall Ave 11422
36. Lera Brunot	241-30 145th ave 11422
37. Stephanie Alexandre	241-30 145th AVE 11422

Community Residents Concerned About The Proposed Runway 4L/22R Improvements Project at John F. Kennedy International Airport

1. DAPHNE VANCE 181-46 144 AVE 11413
2. JOSEPH Gilles 145-76 176th St S Gardens 11413
3. EDNA EDWARDS 168-10 127 AVE (3G) JAMAICA NY 11434
4. SIMONA FRANCIS 145-31 177th ST, JAMAICA NY 1143
5. Marie Noel 144-79 176th Jamaica NY 1143 4
6. MARie JOSEPH 168-24, 127 AVE JAM
7. EMILY TYLER 172-34 133rd Ave #3A JAMAICA NY 11434
8. Christine Gilles 145-76 176th St, Springfield Gdns, NY 11413
9. FABLIN LANG 172-14 133rd ave Jam NY 11434
10. Cordy Nwozuzu 255-18 147th Dr. NY 11422
11. Judith A. Bryan 184-46 Edgewood Ave Springfield Gdns NY 11413
12. Marie Dupre 184-14 159th Street Jamaica, NY 11434
13. Colona Chandler 134-15 166 PL. JOE N.Y. 11434
14. Danielle Gilles 145-76 176th St JAMAICA NY 11434
15. THERESA DINNU 145-60 221 ST SP Queens NY 11413
16. Marie Y Saint Victor 175-13 138th Ave Jamaica NY 11434
17. EMMANUEL B AWKU 175-13 138th Rochdale NY 11434
18. Josette Mortel 218-26 Queens Village
19. Joyce Devarieux 147-29 Farmers Blvd Springfield Gdns 11434
20. Julienne Burton 110-15 Elder St St Albans
21. Yves St Victor 139-19 Springfield Gdns NY 11434
22. Adwoa Awku 175-13 138th Springfield Gdns 11413
23. Kwabena Awku 175-13 138th Springfield Gdns 11413
24. Andre Reid 245-15 147th Rosedale 11422
25. Zellet Pusey 245-19 147th Ave Rosedale 11422
26. Anthony Reid 245-19 147th ave Rosedale 11422
27. Hakim Callender 245-19 147th ave Rosedale 11422
28. Shomari Callender 245-15 147th ave Rosedale 11422
29. Paula Goodgee 245-15 147th ave Rosedale 11422
30. Dia Reid-Vicars 245-15 147th ave Rosedale 11422
31. Tiffany Sampson 144-50 168th St
32. Emily Dangerfield 253-18 148th Rd Rosedale NY 11422
33. Giselle Dangerfield 253-15 148th Rd Rosedale, NY 422
34. Marlene Josue 139-41 254th St Rosedale, NY 11422
35. Mark Daniel Josue 139-41 254th St Rosedale NY 11422
36. Sabreena Knight 167-07 North Conduit Blvd NY 11434
37. Randy Alexander 145th 241-30 Rosedale, NY 11422

Community Residents Concerned About The Proposed Runway 4L/22R Improvements Project at John F. Kennedy International Airport

	Name	Address
1.	Juana Vasquez	147-20 235 St Rosedale NY 11422
2.	Alejandro Veras	147-20 235 St Rosedale NY 11422
3.	Antis Veras	147-20 235 St Rosedale NY 11422
4.	Balli Nadia	253-15 149 Ave Rosedale NY 11422
5.	Cox Orin	259-67 149 Ave Rosedale NY 11422
6.	Gibson Daniel	149-54 256 St Rosedale NY 11422
7.	David Cawiree	149-54 257 St Rosedale NY 11422
8.	L Pyce	255-10 149 Ave "
9.	Saud Tanveema	253-18 148 Ave "
10.	Marsha McFlorede	245-20 149 DR "
11.	Debby Chambers Guile	256-24 Cuff Ave " "
12.	Marbella Ellis	255-35 149 DR
13.	Crafty Jer Crystal	245-37 148 DR " "
14.	Marelli John	259-10 148 RD " "
15.	Ali Shamila	147-71 Haxley St
16.	Jennifer Cuder	254-05 Travis Lewis
17.	Debora Ross	149-53 257 St " "
18.	Kia Watson	137-32 249 St
19.	Adam Fabisha	249-27 148 Ave " "
20.	Nepp Rangu NN	257-20 Cuff Ave
21.	William J Danera	149-55 256 St
22.	Cheryl Sourives	145-68 225 St
23.	Masaku Onoyemi	241-04 148 RD " "
24.	MC Farlane Partia	245-20 149 RD " "
25.	Gesse Sonia	234-22 148 Ave " "
26.	Cheng Fenene	255-19 148 Ave
27.	Grantley Keisha	257-32 148 Ave " "
28.	Prewitt Ronada	145-68 224 St " "
29.	Thama Paul	237-18 Cuff Ave
30.	Abdulles Fatian	257-10 148 Ave
31.	Webb Rogann	257-20 Cuff Ave
32.	Buzmon Anthony	253-31 149 Ave
33.	Ricketts Soniat	159-49 149 RD
34.	Chin Mesha	238-31 148 RD
35.	Hagery Natasha	253-03 149 Ave
36.	Indira Dittorimore	241-21 149 Ave
37.	WADD Falkerse	249-09 149 Ave

Springfield Gardens Taxpayers and Citizens Association
Post Office Box 130099
Springfield Gardens, New York 11413

November 1, 2012

Mr. Edward Knoesel
The Port Authority of NY & NJ
225 Park Avenue South 9th Floor
New York, NY 10003

President
Patrick Evans

Vice-President
Arthur Heard

Secretary
Jacqueline Kellum-Foster

Treasurer
William Molette

Oliver Babb
Sergeant at Arms

Chaplain
Rev. David Brunswick

Re: Draft Environmental Assessment – Runway 4L/22R Extension Project at JFK International Airport.

Dear Sir,

Please accept this letter on behalf of the Springfield Gardens Taxpayers & Citizens Association (The Taxpayers Civic) as official comment on the proposed draft environmental assessment of runway 4L/22R at John F. Kennedy International Airport. The Taxpayers Civic would like to take exception with and argue against the findings of the draft Environmental Assessment report on the following grounds:

- Increased Noise Impact
- Aggregate Levels of Air Pollution
- Diminished Quality of Life/ Health Impact
- Compromised Building Structures and Property Values
- Failure of due diligence in analyzing completely the "Alternatives."

The Taxpayers Civic rejects the Port Authority of NY & NJ's draft Environmental Assessment report findings of "No Cumulative Impact." We are hereby requesting that the Port Authority of NY & NJ perform a comprehensive Environmental Impact Statement (EIS) that rely upon data culled from the community's directly neighboring JFK airport. The Taxpayers Civic further request that all preliminary construction and bid considerations be placed on perpetual hold until said EIS report is filed with the Federal Aviation Administration (FAA.)

Noise Impact:

The Taxpayers Civic take exception with the PANY&NJ draft Environmental Assessment finding that a 1.5 db increase in air traffic noise would not have a noticeable impact upon the communities adjacent to JFK airport. The Taxpayers Civic take the position that any noise decibel increase resulting from the extension of runway 4L/22R would exacerbate the already intolerable air traffic noise levels of the existing 65 – 75db noise exposure contours of runway 4L/22R. The draft finding of a mere 0.70 db of increased air traffic noise is unacceptable to our communities. At current noise levels, The Taxpayers Civic have gotten numerous complaints over the years of residents being abruptly awaken, disturbed in normal speaking and telephone conversations, and interrupted in mental concentration in myriad of tasks.

Furthermore, the draft EA state that the proposed runway extension would affect the arrivals and departures on runway 4L/22R at JFK, by decreasing the existing distance of the air traffic between the surrounding communities homes and the airplanes by forty to seventy feet (40 - 70ft.) The Taxpayers Civic finds that the proposed decreased distance between the homes, schools, medical centers, etc. and the air traffic is wholly unacceptable. Our membership take exception with any action on the part of the PANY&NJ that would result in decreasing the already too close for comfort landing and take-off zone at JFK International Airport. The main objective of the proposed runway extension and improvements for 4L/22R as detailed in the draft EA is to conform to FAA standards imposed vis-à-vis Runway Safety Areas (RSA.) The Taxpayers Civic find that the PANY&NJ would rather conform to FAA standards and create improved RSA's at the expense of human life and comfort. Airline industry standards governing human comfort zones indicate that air traffic operate outside of one thousand feet (1,000 ft.) air zone of people. However, on any given day the communities of Springfield Gardens, Rochdale Village, Rosedale, Laurelton, et 'al experience airplanes operating within five hundred feet (500 ft.) of our homes, schools, medical centers, etc. Therefore, The Taxpayers Civic reiterates our rejection of any plan, proposal, and or professional opinion that seek to decrease air safety zones over our community.

The noise analysis provided in Appendix B, *Noise,* describes the methodology, assumptions, and results of aircraft noise analysis that was conducted to assess the effects that the Proposed Action would have on noise exposure in the communities surrounding JFK. A significant noise impact would be considered if there were an increase of 1.5 decibel (dB) or more over noise-sensitive facilities within the 65 DNL noise contour.1

The following elements of the Proposed Action would result in a change in the noise exposure at JFK. However as stated previously these changes would not result in a significant noise impact over noise sensitive areas.

- *Relocating the Runway 4L threshold 460 feet to the north* – This would result in departing aircraft being lower over areas to the north of the runway.
- *Moving the arrival threshold on Runway 22R 3,316 feet to the north* – This would result in aircraft landing on Runway 22R being lower over areas to the north of the runway.
- *Extending the runway 728 feet to the north* – This would result in aircraft departing to the south on Runway 22R being closer to areas to the north of the runway.

Landrum & Brown Chapter 5 – Environmental Consequences
May 2012 Page 5-2

Air Pollution:

The Taxpayers Civic object to the PANY&NJ's draft proposal EA on the 4L/22R runway extension and improvements on the grounds that the proposed action would generate increased levels of air pollution in our community. At present, John F. Kennedy International Airport spews jet fuel throughout

Southeast Queens; thus, creating and aggravating various health concerns amongst its residents. On a busy day lines of aircraft approaches and departures at JFK International Airport within one minute intervals produce streams of hazardous airplane exhaust. Our community understands that this constant flow of air traffic into and out of said airport creates enormous air pollution and health concerns for our residents. We believe that much of our home's roofs currently reveal discoloration from settled jet fuel pollution and rainfall patterns. At present, runway 4L/22R operate group VI aircraft (Airbus A380) via FAA waiver. The waiver would no longer be necessary upon implementation of the draft proposal; however, The Taxpayers Civic request the PANY&NJ perform the necessary air quality studies to determine the increase in air traffic emissions resulting from increased Airbus A380 accommodation.

The existing dimensions of Runway 4L/22R designate it as a Group V runway (aircraft with wingspans up to 213 feet). However, JFK operates Runway 4L/22R under a Modification of Standard that allows this runway to accommodate Group VI aircraft (aircraft with wingspans of 214 feet, but less than 262 feet). To comply with standards for Group VI aircraft and eliminate the Modification of Standard, Runway 4L/22R would need to be widened to 200 feet from the present 150 feet.
Landrum & Brown Chapter 2 - Purpose and Need
May 2012 Page 2-2

Health & Quality of Life:

The Springfield Gardens Taxpayers & Citizens Association strongly request that the PANY&NJ halt all plans as proposed in the draft Environmental Assessment for runway extension and improvements on 4L/22R at John F. Kennedy International Airport on the basis of detrimental effect upon our communities health and quality of life concerns; thus, greatly overburdening a thriving and upwardly mobile minority community. The Taxpayers Civic thoroughly disagrees with the draft EA findings on the matter of health, Quality of Life, and Minority populations.

The Port Authority of NY & NJ's draft EA finding that relocation housing is currently insufficient and that homes would have to be relocated due to the proposed action – are succinctly rejected by The Taxpayers Civic. We believe the draft EA does not thoroughly address this matter and thus, don't merit such a finding. Our community believe that the expansion of JFK operations in Southeast Queens amounts to in effect "a taking" of our property rights. It is our position that lower flying aircraft within the one thousand feet human to air traffic zone, increased aircraft noise exposure, and added air pollution levels buttress our argument.

The Taxpayers Civic take offense to the PANY&NJ's proposed action to bypass the U.L.U.R.P. process established by the City of New York in the Authority's attempt to acquire a parcel of property outside the airport boundary north of JFK airport. PANY&NJ's action is a deliberate attempt to avoid public scrutiny, comment, and impute. The proposed action is deemed a "business taking" from the local community that have an impact therein.

The Taxpayers Civic has the opinion that the Springfield Gardens community tax basis would be adversely affected if the draft EA as presented by the PANY&NJ concerning the runway extension and improvements on 4L/22R is adopted. We understand that our home values would take an additional negative decline in market value based upon implementation of said proposal. The Taxpayers Civic

believes that lower flying aircraft, increased noise exposure, and added home vibrations would impede current and future sales of the property. The Authority's proposed action would conversely result in a lower property tax assessment by the City of NY and a resulting diminished tax base. Furthermore, we believe the PANY&NJ has not performed a thorough analysis that such a finding would warrant.

The Springfield Gardens Taxpayers & Citizens Association maintain the argument that The Port Authority of NY & NJ draft environmental assessment on JFK's runway extension and improvements on 4L/22R is in fact in violation of president William Jefferson Clinton's ***Executive Order 12898, Federal Actions to Address Environmental Justice in Minority and Low-Income Populations.*** The Springfield Gardens community is an overwhelmingly majority minority neighborhood. The communities directly adjacent to JFK International Airport constitute upwards of one million people – of which eighty/eighty-five percent consist of people of color. The Taxpayers Civic finds that this minority population is presently over-taxed via. JFK's aggregate pollution – noise and air, thus, correlating to Southeast Queens' increased health risks, and diminished property values. The Port Authority's draft EA does not cite any sources that indicate conclusively that the affected communities would not be increasingly adversely harmed by implementation of the proposed runway extension of 4L/22R. The Taxpayers Civic understand that though the PANY&NJ's assessment correctly state that the proposed action does not unduly fall upon any minority population at the benefit of a particular majority population; yet, we believe the draft EA fail to address the negative effects of continued airport sprawl in relation to the Southeast Queens minority community. The Authority's draft EA neglect to consider the environmental injustice damage caused by decisions made by PANY&NJ executives that don't reside in proximity to and work at JFK. The Authority's executive decisions are made by persons and group of persons that by and large overwhelmingly don't reflect the racial/ ethnic makeup of the affected population. Hence, The Taxpayers Civic argue that the PANY&NJ cumulative effect vis-à-vis the draft EA proposals amount to a net increase in negative health concerns, quality of life matters, compromised building structures, and damaged economic activity. We understand that the draft EA proposals are tantamount to callous environmental injustice pile on with disregard for this overwhelmingly minority community. Therefore, we reject The Port Authority of NY & NJ finding of "No disproportionate impact."

The Taxpayers Civic strongly disagrees with the PANY&NJ's draft environmental assessment of "No Significant Impact" pertaining to health risks as reported therein. It is our understanding that there are an untold number of collateral effects resulting from airport operations existing too close to residential neighborhoods. It is The Taxpayers opinion that air traffic noise and exhaust cause the following:

1) **HEALTH CONCERNS – NOISE**
    a. **Changes in blood pressure**
    b. **Sleep disorders**
    c. **Shifts in digestive patterns**
    d. **Children's Health/Development**
        1. **High blood pressure**
        2. **Elevated nervous system activity and cardiovascular levels**
        3. **Educational lag of two months for every 5 decibel increase above the average noise level (Math & Writing)**

(The above ailments are outward signs of stress – resulting in increased risks of coronary heart disease and strokes)

2) **HEALTH CONCERNS – AIR POLLUTION**
   a. **Diesel Exhaust (Jet Fuel)**
   b. **Carbon Monoxide**
   c. **Leaked Chemicals**

(These pollutants are linked to Cancer, Asthma, Liver damage, Lung disease, Lymphoma, Myeloid Leukemia, and depression)

It is the belief of The Springfield Gardens Taxpayers & Citizens Association that the PANY&NJ draft EA finding of "No Significant Impact" intentionally ignored the above captioned health risks associated with airport sprawl. The draft EA failed to mention and cite any relevant study that was performed to demonstrate the conclusion therein. Therefore, The Taxpayers Civic request that PANY&NJ perform a comprehensive EIS with relevant data collection garnered from the communities directly adjacent to JFK International Airport.

To further our cause, The Taxpayers Civic requires of the Port Authority of NY & NJ the performance of a comprehensive Part 150 study. It is our position that said study would go a very long way in addressing many if not all of the collateral effects bourn upon the Southeast Queens community via JFK international Airport operations. We call upon PANY&NJ to start the Part 150 process prior to moving forward with the draft EA proposed recommendations. It is our understanding that JFK/Idle wild Airport never engaged an environmental impact study – and we believe such a study is long overdue. The Springfield Gardens Taxpayers & Citizens Association holds the position that life in Southeast Queens has grown by leaps and bounds since the establishment of Idle wild Airport circa 1948. It is our belief that JFK/ Idle wild Airport has not kept pace with the developments of the surrounding community. We the residents of Springfield Gardens and Southeast Queens at large demand a more responsible neighbor in John F. Kennedy International Airport and the Port Authority of NY & NJ.

5.3 SOCIOECONOMIC IMPACTS, ENVIRONMENTAL JUSTICE, AND CHILDREN'S ENVIRONMENTAL HEALTH AND SAFETY RISKS

Social impacts have been assessed to determine the effect, if any, that implementation of the Proposed Action would have on the social fabric of the surrounding communities. The types of social impacts that typically arise from airport development are:

- *Relocation of residences, but sufficient replacement housing is unavailable*
- *Relocation of community businesses, that would create extensive hardship for the affected communities*
- *Disruption of planned development*
- *Substantial loss in the community tax base*
- *Environmental Justice issues*
- *Children's Environmental Health and Safety Risks*

5.3.1 RELOCATION OF RESIDENCES

No residences would need to be relocated as part of the Proposed Action.

5.3.2 RELOCATION OF BUSINESSES

The Proposed Action would require the PAPD Motor Vehicle Unit, PAPD Impound Lot, and PAPD K9 unit be relocated as described under Section 5.2, Compatible Land Use. However, these facilities would be relocated to an area on Airport property, thereby creating no extensive hardship to the surrounding communities.

5.3.4 LOSS IN COMMUNITY TAX BASE

There would be no change in the community tax base from the Proposed Action.

5.3.5 ENVIRONMENTAL JUSTICE

Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority and Low-Income Populations,* requires all Federal agencies to identify and address disproportionate and adverse human health or environmental effects of their programs, policies, and activities on minority and low-income populations. The Executive Order also directs Federal agencies to incorporate environmental justice into their overall missions by conducting their programs and activities in a manner that provides minority and low-income populations an opportunity to participate in agency programs and activities. Executive Order 12898 relates to requirements in Title VI of the Civil Rights Act of 1964 (Title VI), the National Environmental Policy Act (NEPA), the Uniform Relocation Assistance and Real Property Acquisition Act (49 CFR Part 24), and other applicable statutes and regulations. Title VI of the *Civil Rights Act of 1964* provides that no person will, on the grounds of race, color, religion, sex, national origin, marital status, disability, or family composition, be excluded from participation in,

be denied the benefits of, or be otherwise subject to discrimination under any program of the Federal, state, or local government. Title VIII of the *1968 Civil Rights Act* guarantees each person equal opportunity in housing. U.S. Department of Transportation (DOT) Order 5610.2, *Environmental Justice in Minority Populations and Low-Income Populations,* was issued to implement Executive Order 12898.2 DOT Order 5610.2 defines minorities as people who are Black, Hispanic, Asian American, American Indian, or Alaskan Native. Minority populations are defined as "any readily identifiable groups of minority persons who live in geographic proximity, and if circumstances warrant, geographically dispersed/transient persons (such as migrant workers or Native Americans) who will be similarly affected by a proposed DOT program, policy or activity." The DOT Order defines a low-income population as "any readily identifiable group" of persons whose median household income is at or below the poverty guidelines of the U.S. Department of Health and Human Services, "who live in geographic proximity, and if circumstances warrant, geographically dispersed/transient persons (such as migrant workers or Native Americans) who will be similarly affected by a proposed DOT program, policy or activity."
2 62 CFR 72, *Department of Transportation Order to Address Environmental Justice in Minority Populations and Low-Income Populations*.

In determining whether a proposed project or activity is in compliance with Executive Order 12898, two factors must be considered. The first is whether the proposal is likely to have adverse effects on minority or low-income populations. The second is to determine whether the adverse impacts are disproportionately high on minority or low-income populations. The DOT Order defines "adverse effects" as "...the totality of significant individual or cumulative human health or environmental effects, including interrelated social and economic effects..." The DOT Order defines "disproportionately high and adverse effects" as those that are "predominately borne by a minority population and/or a low-income population, or will be suffered by the minority population and/or low-income population and is appreciably more severe or greater in magnitude than the adverse effect that will be suffered by the non-minority population and/or non-low-income population." The increase in the noise level, deemed by FAA guidance as not a significant impact, would occur to the north of the Airport primarily over minority populations. However, no non-minority populations are benefiting from this increase in noise to the north or receiving a decrease in noise levels due to the Proposed Action. Further analysis shows that within the 65 DNL noise contour of the 2015 No-Build/No-Action approximately 79.5 percent of the population is minority. Similarly, in the Proposed Action approximately 80.0 percent of the population within the 65 DNL noise contour is minority, a difference of only 0.5 percent.
Table 5-1, Noise Impacts to Minority Population Households, summarizes the percentage of minority population within the 65 DNL for the No-Build/No-Action and the Proposed Action in both 2015 and 2020. Therefore as demonstrated, the Proposed Action would not disproportionately impact any minority populations.

Landrum & Brown Chapter 5 – Environmental Consequences
May 2012 Page 5-13

Notwithstanding, The Taxpayers Civic require of the PANY&NJ a retreat to the ***"Alternatives Considered But Eliminated from Further Consideration."*** It is the opinion of The Taxpayers Civic that the Authority did not adequately address the alternatives to the draft EA proposals. We believe the alternative benefits were treated with a light brush and conversely the draft's findings were falsely supported with inadequate conclusions. For example, the draft EA states that the runway length analysis requires at least 11,219 feet to accommodate Group VI aircraft (A380.) However, it is The Taxpayers Civic position of the FAA's RSA requirement should not and does not necessarily equate to 4L/22R's runway extension. It is our belief that the FAA's Runway Safety Area criteria could be met within the existing runway length. Also, we believe the Port Authority never considered repositioning 4L/22R such that it would not create such an additional burden upon the neighboring community of Springfield Gardens. The Taxpayers Civic is of the understanding that the draft EA proposal was chosen because it presented the least avenue of opposition and the least costly venture – all at the expense of the neighboring communities of Springfield Gardens, Rochdale Village, Rosedale, Laurelton et 'al.

(1) Runway Length Requirements - As a result of the runway length analysis, it was determined a takeoff distance of at least 11,219 feet would be required to accommodate the existing and future fleet without causing additional delays.

Landrum & Brown Chapter 3 - Alternatives
May 2012 Page 3-11

In conclusion, it is the position of the Springfield Gardens Taxpayers & Citizens Association that the Port Authority of NY & NJ add this comment to the final draft EA along with all comments submitted in May/June of 2012. Also, it is The Taxpayers Civic request that all preliminary plans and bids be placed on perpetual hold until the aforementioned EIS is performed. We further require that PANY&NJ show good faith and start the process of ordering a Part 150 Study for its jurisdiction and JFK specifically.

Sincerely,

Patrick Evans, Pres.

Cc: **Eastern Queens Alliance, Inc.**
P. O. Box 300818
Jamaica, NY 11430

Residents of Springfield Gardens
Springfield Gardens, NY 11413

October 25, 2012

The Port Authority of NY & NJ
225 Park Avenue South – 9th Floor
New York, NY 10003
Attention: Edward Knoesel

Dear Mr. Knoesel:

We are long-time residents of Springfield Gardens, New York some of us have been residing in Springfield Gardens for approximately 35 – 40 years respectively. We are writing to the Port Authority of New York and New Jersey to express our concern about the recent discussion and pending decision to expand an additional 728 feet to runway 4L/22R, one of JFK's four runaways, 460 feet of which would relocated north toward residential neighborhood in the areas of Springfield Gardens, Laurelton and Rosedale. We understand that the decision is being considered and the project is scheduled to be completed by November 15, 2014.

However, we do believe that it appears that aircrafts will be flying lower and closer to homes and parks in our area. The analysis of noise created currently or in the future does not use any data from our neighborhoods that will be a devastating impact on the residents but have used a model that does not take into consideration the unique community and landscape. The information within EA doesn't indicate how much lower planes would fly over our community. The impact of widening the runways does not benefit the residents of our community and we object to all the noise pollution that is being dumped upon the community.

- Consider: Trees make for a more natural, less artificial, and therefore less stressful, environment. The sight and sound of aircrafts, on the other hand, are not pleasant, and can leave us feeling more stressed. Furthermore, it is well known that trees improve air quality; leaves filter the air we breathe, absorb pollution, and give off oxygen. It is also well known that airplanes give off myriad pollutants that decrease air quality.

- Most of the residents are of the "baby boomer" age and lack of sleep from those aircrafts has a great impact on our health.

- These aircrafts fly over the homes at least one plane every two minutes and they often fly in the early morning hours until very late at night. We are also concerned about the security risk of these low flying aircrafts.

It would seem that widening these runways would bring increased growth, and thus a better economy to our city. However, consider that trees bring energy savings by moderating heat in commercial areas, and that landscaping with trees increases property values. Aircrafts flying every few seconds overhead, on the other hand, will increase noise and air pollution, and will decrease surrounding property values.

As life-long residents of Springfield Gardens, we feel it is important that the above concerns be adequately addressed before **ANY** construction is commenced. Failure to address these issues and others may create cumulative adverse impacts that will harm the community for generations.

Sincerely,

Name	Address	E-mail address (if any)
Fay D Hill	182 05 145th Drive	Fay231hill@yahoo
Ann Donough	182-01 145DR. Springfield Gdn 11413	
Louis Barnes	144-34 184 St Springfield 11413	
Alex Lowry	145-41 182ND ST. 11413	
Bonty Defoe	178-41 145 Drive 11434	
John Knight	178-48 145 Drive 11434	
Ann Marie Osman	178-16 145 Ave Jam. 11434	
Sonia Demorest	181-14 145th Dr 11413	
Lyellington Diamond	181 14 145 Drive 11413	
Emmanuel Inwalis	146-19 183rd St Springfield Gardens 11413	
Lisa Van Putten	145-64 182 St., Springfield Gdns, NY 11413	LIVANPUTTEN@YAHOO.COM
Jean Melvin	182-05 145TH DRIVE, SPRINGFIELD GARDENS, N.Y. 11413-3512	

Springfield/Rosedale Community Action Association, Inc.

PO Box 300165
Jamaica, New York
Email: SRCAAINC@aol.com

Barbara E. Brown,
President

Crystal Brown,
1st Vice President

Louis KilKenny,
2nd Vice President

October 27, 2012

Comments: Draft Environmental Assessment
Runway 4L/22R Improvements
John F. Kennedy International Airport
Prepare for US Department of Transportation
Federal Aviation Administration
The Prot Authority of NY & NJ
May 2012
Prepared by Landrum & Brown

To: *Port Authority of NY & NJ*
225 Park Avenue South
9th Floor
New York, NY 10003
Attention: Edward Knoesel

The Springfield/Rosedale Community Action Association, Inc., the civic association that covers the Brookville Community, is adamantly opposed to the proposed action listed as runway improvements that would:

- Relocate the Runway 4L end 460 feet to the north.
- Construct 728 feet of new runway pavement on the north side of Runway 4L/22R.
- Relocate the displaced landing threshold on Runway 22R 3,316 feet to the north.

The finding of "no significant impact" for all of the required categories is flawed particularly as it pertains to the following categories: noise, compatible land use, socio economic impacts; environmental justice, children's health and safety risks, as well as secondary (induced) impacts such as air quality, water quality, fish, wildlife and plants, wetlands, It also appears to use the terms *rehabilitation* and *improvements* as euphemisms for accommodating the ever longer and wider commercial jets that the Port Authority believes it is important to accommodate.

Page 1 of Chapter 2 of the Draft of The Environmental Assessment (EA) states that the Proposed Action would serve the following needs of the Port Authority, airlines, airline passengers, and the general public:

- Need to rehabilitate and widen Runway 4L/22R,
- Need to comply with FAA RSA standards while maintaining sufficient runway length to accommodate current and projected fleet; and

• Need to reduce delays and increase airport safety and operational efficiency.
The report takes note of an FAA circular that addresses compliance standards for Runway Safety Areas. It is also pertinent to note that representatives of the Port Authority have identified actions related to compliance with FAA's advisory circular as the primary reason for their actions related to Runway 4L/22R. Runway Safety Areas are critical to the departure and landing of aircraft as well as providing accessibility for emergency vehicles. The report concludes that present RSA operations are deficient and that runway 4L is limited at both ends by natural circumstances and manmade facilities.

According to the Port Authority, proposed solutions for improving the RSA's will result in a loss of runway length and force greater use of Runway 22L. Thus the Port Authority notes that RSA improvements must be combined with additional lengthening of the Runway. However, lengthening of the runway is not required; it is apparent that this is an option that the PA is choosing. In fact, Runway 4R/22L is actually shorter than the resultant shorter length of Runway 4L/22R if only the required improvements are implemented.

The EA also cites the need to widen the runway to accommodate Group VI aircraft. But the EA fails to explain what constitutes Group VI aircraft including size, passenger capacity and noise differential from Group V aircraft for which the runway is presently designated. It needs to clearly outline why it believes it is essential to accommodate Group VI aircraft, especially to the detrimental effects that such action will have on the human environment.

The EA seems to imply the lengthening of the runway is a consequence of its safety actions rather than the reason for their action, but it fails to adequately evaluate the specific effects of moving the runway closer to the community to restore length when the resultant action will be aircraft flying at a lower levels, with greater noise, landscape alterations and point source emissions. Instead, without real depth of analysis, they easily find "no significant impact."

As one reads the Environmental Assessment it seems clear that runway operational efficiency, accommodation of the requirements of future aircraft and reducing delays are major goals of the project. And the report notes that improvements in runway design and taxiways namely smoothness, width and length affect the ability of aircraft to occupy and leave the various terminals as well as the Air Traffic Controller's ability to direct planes. While this can result in reducing delays on the ground it could also result in more flights into and out of JFK, particularly with the advent of NextGen. This consideration is important to community residents and a strong argument for the requirement of an EIS for further study of the proposed action.

We believe that the finding of no significant impact (FONSI) for the following categories is not based on deep analysis and research and is, therefore, spurious:

Noise Pollution—Acknowledging that "the following elements of the Proposed Action would result in a change in the noise exposure at JFK," the EA states "However, as stated previously these changes would not result in a significant noise impact over noise sensitive areas." The authors of the draft admit "Relocating the Runway 4L threshold 460 feet to the north," would "result in departing aircraft being lower over areas to the north of the runway, that "moving the arrival threshold on Runway 22R 3,316 feet to the north…would result in aircraft landing on

Runway 22R being lower over areas to the north of the runway;" and that "extending the runway 728 feet to the north…would result in aircraft departing to the south on Runway 22R being closer to areas to the north of the runway." However, inconceivably, they conclude that there is no significant noise impact.

The Brookville Community, the community between Springfield Park and Brookville Park, South of the Belt Parkway, is the community immediately north of JFK Airport and specifically Runway 4L/22R. Arriving aircraft are already flying very low, disappearing below the tree line and roofs of some of the two family homes even before they start flying over Idlewild Park Preserve. Residents are definitely impacted by the noise from these aircraft coming in for a landing. Departing aircraft roar over our community, sometime every minute to a minute and a half all day long. They are also very low, because they are just starting to climb. In addition to the noise, the attending low frequency noise (LFN) are vibrations that rattle windows, sometimes cause pictures to fall off of walls, and set off car alarms. Some residents have claimed that these LFN vibrations have caused cracks in their walls. The noise interferes with communication both within one's home and during telephone calls. The already low flying planes interfere with basic, non-cable TV reception and cordless telephone reception. The airport-related noise we currently experience definitely lowers one's quality of life. To move the runway closer to the community would be unconscionable. To cause aircraft to fly lower over our community without having determined how much lower the aircraft will be flying shows that the PANYNJ has not done the detailed analysis that it needs to do before assessing impact.

The literature on airport noise indicates that:

- Residences located near run ways can experience high levels of LFN,
- LFN can induce "feelable" vibrations,"
- Standard sound insulation does not sufficiently reduce LFN.
- LFN levels may produce perceptible vibrations at considerable distances from the runway end only in limited directions due to the directional sound pattern produced by jet engines,
- Vibrations could occur 7,000 to 8,000 feet from the start-of-takeoff-roll, well outside the 65 DNL (CNEL) contour

While the EA contends that the increase in noise would not be detectable by the human ear, the noise is already intolerable and unhealthy. The EA shows that our community is completely in the 65DNL contour, which means that at least half of the noise is already above the levels of noise to which human beings should be subjected. In fact, data collected by the PANYNJ from the Springfield Gardens Noise Monitor did not show a reading below 67 for the last few years, indicating that the DNL is higher than 65. Just because one might not consciously perceive an increase in noise does not make the noise any less significant or dangerous to one's health and well being.

It has been noted by several sources "aircraft noise interferes with the enjoyment of our residential property and with sleep, and detracts from the general physiological and psychological well-being of the community. …It goes without saying that no new source of environmental noise, whether it be associated with the expansion of an existing facility, or an

entirely new facility, should be approved by local jurisdictions without an adequate review of its environmental impacts and the serious consideration of alternatives."

Studies show that:

- Night-time noise from aircraft or traffic can increase a person's blood pressure even if it does not wake them, according to a new study published in the European Heart Journal.... The researchers found that volunteers' blood pressure increased noticeably after they experienced a 'noise event' -- a noise louder than 35 decibels -- such as aircraft travelling overhead ... This effect could be seen even if the volunteer remained asleep and so was not consciously disturbed. ...Aircraft noise events caused an average increase in systolic blood pressure of 6.2 mmHg and an average increase in diastolic blood pressure of 7.4 mmHg. ...Aircraft noise events caused an average increase in systolic blood pressure of 6.2 mmHg and an average increase in diastolic blood pressure of 7.4 mmHg.

Health data for our community shows a high incidence of high-blood pressure, stroke, heart disease and diabetes. Research shows that all of these can be caused and/or exacerbated by airport-related noise. It is logical to conclude that the health of our community is being negatively impacted the low-flying aircraft.

- Airport noise can seriously affect the health and psychological well–being of children. ...The health problems resulting from chronic airport noise include higher blood pressure and boosted levels of stress hormones. Increases in blood pressure in childhood may predict a greater likelihood of having higher blood pressure throughout adulthood.
    - In 1998, it was reported that New York children living near an international airport tended to be poor listeners and do not read as well as matched children in quiet schools
    - A1980 study found higher blood pressure in kids living near Los Angeles' LAX airport than in those living farther away.
    - A 1995 German study found a link between chronic noise exposure at Munich's International Airport and elevated nervous system activity and cardiovascular levels in children living nearby
    - A 2005 study found that kids living near airports in Britain, Holland and Spain lagged behind their classmates in reading by two months for every five decibel increase above average noise levels in their surroundings. The study associated aircraft noise with lowered reading comprehension even after socio-economic differences were considered.

Many of the children in the community are suffering from low achievement levels. Schools in the affected communities are in danger of closing because of this. In addition, many of our children are diagnosed with ADD, ADHD and other developmental problems. It is our contention that the constant drone of aircraft noise overhead is possibly a strong contributor to this. Much further study is needed. Noise mitigation with a no build action is definitely needed.

As stated in a 2012 GAO report, "While airports provide access to transportation for millions of people each day, **airport noise—by, for example, interfering with speech, sleep, and student learning—can severely diminish quality of life in communities around airports ...** FAA has an ongoing responsibility to balance the growing demand for aviation capacity against the environmental concerns and effects on communities caused by airport noise. Aircraft technology, the number of aircraft operations, and noise levels have changed markedly... Moreover, the implementation of and the growth in aircraft operations that NextGen investments could spur may lead to new demand for airport noise mitigation or new noise challenges.

The community requests that the increase in noise that will result from the proposed action of moving take-offs and landings lower over the community be further evaluated through an in-depth study before any decision is made to actualize the proposal. We believe that there will be a significant impact on the quality of life and health of the residential communities to the north of the airport, including its children.

Air Pollution-- Environmental Pollution (Noise and toxic emissions) from the airport is a problem for any community in close proximity to an airport. The PANYNJ Assessment study, suggests that there will be no significant impact on the community from the additional pollutants. Experiences in the community suggest otherwise in that planes are already louder, and odors from emissions (fuel dross) emanating from the airport are more frequent, residents have witnessed aircraft dumping fuel over the neighborhood and Idlewild Park Preserve, and that moving the point source of pollution closer to the community results in an increase in the pollution to which residents are exposed. It is our opinion that the model used in making the no significant impact prediction cannot be accurate in that there are no monitoring sites in the community that may have been used as part of the data from which the model was developed. In addition, the model discusses the green house gases or criteria air pollutants such as ozone. The monitors that measure the criteria air pollutants are miles away from our community and, therefore, do not adequately measure the higher concentrations of such pollutants nearer to the pollutant source. In addition, the EA does not take into account nor propose to evaluate the health or other impacts caused by toxins classified as hazardous air pollutants (HAPs) that are emitted by aircraft and other sources at the airport. The community requests that emissions, particularly those labeled as Hazardous Air Pollutants resulting from the aircraft and other sources be brought closer to the community be studied. Such will allow an accurate determination of the impact of these environmental factors on air quality on the community resulting from the proposed action.

The U.S. EPA has listed the following 14 HAPs (12 individual substances and two select groups of complex organic compounds) they believe are present in the exhaust of aircraft and/or their ground support equipment (GSE):

- 1,3-Butadiene
- Acetaldehyde
- Acrolein
- Benzene
- Ethylbenzene
- nHexane
- Xylene
- Propionaldehyde
- Styrene
- Toluene

- Formaldehyde
- Lead compounds
- Polycyclic Organic Matter (POM) as 7 Polycyclic Organic Hydrocarbons (PAH)
- POM as 16 PAH

- Formaldehyde appears to be the most prevalent HAP in aircraft exhaust followed by acetaldehyde, benzene, and toluene.
- Ten individual HAPs comprise the vast majority of HAPS that are reported to occur in aircraft and/or GSE exhaust:
  - Formaldehyde
  - Acetaldehyde
  - Benzene
  - Toluene
  - Acrolein
  - 1,3-Butadiene
  - Xylene
  - Lead
  - Naphthalene
  - Propionaldehyde

An October 12, 2012 recent article in the London Guardian on the Health consequences of aircraft fumes from major airports in Britain, highlighted that surrounding air quality is not only degraded by take offs and landings but by taxiing of aircraft, and the other airport support equipment. According to the proposed plan, all of this will now take place several hundred feet closer to our community. The US Citizens Aviation Watch Association, a coalition of concerned municipalities and advocacy groups, has cited several studies linking pollutants common to the air around airports to cancer, asthma and lung disease. Surely if the PANYNJ is taking any action which will bring aircraft closer to the community in the air and on the ground, it should be able to provide assurances of consideration of these concerns.

Idlewild Park Preserve--Idlewild Park Preserve is a 346-acre salt marsh and upland area just north of JFK airport. In fact it is the salt marsh area remaining after 5000 square acres of the Jamaica Bay salt marshes were filled in to build JFK airport. It constitutes the headwaters to Jamaica bay. The EA does not take into account the significance of Idlewild. It even understates the size of the park and refers merely to a few of the ball fields on the northern edge of the preserve. The park is not only a significant ecological area, it is a community resource for environmental education as well as a recreational resource and an oasis where people can go to enjoy and soak up nature. It also serves as an environmental buffer to flooding and the air pollution that emanates from the airport. It is the home of the precursor of the soon-to-be-home of a full-fledged Idlewild Park Preserve Environmental Science Learning Center sponsored and run by the Eastern Queens Alliance. For the last several years, schools have been bringing children to Idlewild for field trips.

While the EA neglects to discuss or even mention it, the proposed plan calls for the removal and/or topping of the taller trees in the preserve. This is a serious omission from the EA. The removal of trees was only mentioned as an aside at the October 4th Public Meeting during which the PANYNJ answered questions about the proposed plans. It is important to note that the PA has already conducted a tree survey and has flagged many trees as being too tall for the lower flying planes that will result from extending and moving the runway closer to the north; this before the proposed plan has been approved by the FAA.

According to Michael Feller, Chief Naturalist of NRA of NYCDPR,

> "The scant attention given to Idlewild Park is entirely out of proportion relative to its size and ecological function. First, the park ...almost 150 acres of salt marsh: pristine and plentiful enough for nesting sharp-tailed and seaside sparrows, clapper rail, oyster catcher, and willet. The park's marshes and waterways are frequently used by foraging osprey nesting in North Woodmere Park; northern harrier nesting in or around JFK airport; and, also near the airport, perhaps the last short-eared owls known to nest in the city.
> The salt marsh here is the confluence of the four most extensive fresh water streams tributary to Jamaica Bay: 1) Springfield Pond's outlet stream in Springfield Park to the west; 2) Conselyea's Pond's outlet stream in Brookville Park to the north; and 3) Hook Creek and 4) Valley Stream to the east. Big cordgrass (Spartina cynosuroides), salt marsh bulrush (Scirpus robustus), and water hemp (Amaranthus cannibinum)--three salt marsh plants adapted to lower salinities make their only Jamaica Bay showing here. The potential fish habitat represented by these freshwater tributaries is as yet unplumbed. We are hopeful that future studies will determine what if any role the streams play as breeding sites for anadramous fish like gizzard shad and catadramous fish like American eel...
> Since 1993, NYC's DPR and Department of Environmental Protection (DEP) have been working together to restore wetlands in the park ... Significant improvement to the local environment and the larger Jamaica Bay ecosystem has been provided... Even before the restoration was completed, muskrats, Fowler's toads, marsh hawks, tiger beetles, and more than fifteen species of dragonfly and damselfly were cavorting in the new wetland. Many of the plant species used in the restoration had been entirely extirpated or were largely absent from the Jamaica Bay area. With their return to Idlewild Park, this site is now an important nucleus for dissemination throughout the region of species such as serviceberry, butterflyweed, swamp milkweed, New York ironweed, American holly, turtlehead, and others."

In summary, Idlewild Park Preserve is a significant part of the New York/New Jersey Harbor Estuary and the headwaters to Jamaica Bay. It is included in the Jamaica Bay Water Shed Protection Plan and deserves the same protections as Gateway National Park. The PANYNJ states that it cannot touch Gateway National Park, which is a significant ecological resource. Similarly, it should not touch Idlewild Park Preserve. The park is a critical stopover area along the Atlantic Flyway Migration Route. Increased Noise, closer landings and more concentrated pollutants will disrupt the natural Wildlife living and mating habitats of many more species than the flawed report mentions. In addition to Peregrine falcons, Osprey and Diamond back Terrapin Turtles, the DEP Jamaica Bay Watershed Protection Plan Report (Oct 2007) mentions many more species, i.e., Short eared /Long eared Owls; Piping Plover; Snowy Egret; Least bittern; Pied-billed Grebe; Roseate Tern; Common Tern and many others. Also mentioned are threatened Trees and Plants.) Mayor Bloomberg signed New York City "Local Law 71", July 20th, 2005, to protect this area. As a community of amateur Gardeners and Bird watchers we have seen changes over the years from other construction in the area that impacted the park. We are calling on the FAA to require an EIS that will do an in-depth analysis of the impact of the proposed action on Idlewild Park Preserve and the many vital functions that it provides to the human and natural environment.

Land Use--We contend that property values and the ability of homeowners to sell their property will be negatively impacted by the proposed action. The low flying aircraft with the attendant noise already serves to discourage buyers. Lower flying aircraft will be an additional detriment. This constitutes a theft of property due to the proposed action. This issue has not been mentioned or analyzed in the EA. Further evaluation through an EIS is needed.

Environmental Justice—The EA notes,

> "Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority and Low-Income Populations,* requires all Federal agencies to identify and address disproportionate and adverse human health or environmental effects of their programs, policies, and activities on minority and low-income populations. The Executive Order also directs Federal agencies to incorporate environmental justice into their overall missions by conducting their programs and activities in a manner that provides minority and low-income populations an opportunity to participate in agency programs and activities.
>
> "... Minority populations are defined as "any readily identifiable groups of minority persons who live in geographic proximity, and if circumstances warrant, geographically dispersed/transient persons (such as migrant workers or Native Americans) who will be similarly affected by a proposed DOT program, policy or activity. ...
>
> "In determining whether a proposed project or activity is in compliance with Executive Order 12898, two factors must be considered. The first is whether the proposal is likely to have adverse effects on minority or low-income populations. The second is to determine whether the adverse impacts are disproportionately high on minority or low-income populations. The DOT Order defines "adverse effects" as "...the totality of significant individual or cumulative human health or environmental effects, including interrelated social and economic effects..." The DOT Order defines "disproportionately high and adverse effects" as those that are "predominately borne by a minority population and/or a low-income population, or will be suffered by the minority population and/or low-income population and is appreciably more severe or greater in magnitude than the adverse effect that will be suffered by the non-minority population and/or non-low-income population."
>
> "The Proposed Action would result in an increase to the number of noise-sensitive land uses located within the 65 DNL noise contour (see Appendix B, Noise, Table B-10); however there would not be a 1.5 dB increase within the 65 DNL over noise-sensitive land uses (see Section 5.1 and Appendix B). The increase in the noise level, deemed by FAA guidance as not a significant impact, would occur to the north of the Airport primarily over minority populations. However, no non-minority populations are benefiting from this increase in noise to the north or receiving a decrease in noise levels due to the Proposed Action."

As cited above, the Proposed Action would result in an increase to the number of noise sensitive land uses located within the 65 DNL noise contour. This increase in the noise level would occur to the north of the Airport primarily over minority populations. Contrary to the conclusion in the EA, the proposed action is definitely "likely to have adverse effects, effects that we believe will have "significant individual or cumulative human health or environmental effects, including interrelated social and economic effects." We maintain that these effects will be disproportionately high and adverse on the minority…populations living in the Southeast Queens communities of Brookville, Laurelton, Rosedale, and Springfield Gardens. If one examines the 65 DNL contours for JFK Airport, the heavily minority populations of Southeast Queens bear the lions share of the noise impacts from JFK Airport. It is clear from the DNL noise contour maps that much smaller numbers of non-minority populations are within the 65+ DNL contour.

The EA states:

> "Further analysis shows that within the 65 DNL noise contour of the 2015 No-Build/No-Action approximately 79.5 percent of the population is minority. Similarly, in the Proposed Action approximately 80.0 percent of the population within the 65 DNL noise contour is minority, a difference of only 0.5 percent."

The Proposed Action is a violation of the Environmental Justice Policies set forth by the US DOT. The adverse effects of the Proposed Action will be predominately borne by the minority population; it will be suffered disproportionately by the minority population; the effects from flights out of JFK airport are and will be appreciably more severe or greater in magnitude than the adverse effects suffered by the non-minority population. The FONSI stated in the EA is, therefore, invalid. It is important that an EIS be completed to analyze in-depth the social, economic, and environmental effects of the proposed action on the minority population and determine an alternative to the proposed action that will not further adversely impact disproportionately the minority communities of Southeast Queens.

In summary, the Springfield/Rosedale Community Action Association, Inc. is convinced that there will be significant negative impacts on the quality of the human environment. The validity and interpretation of the data cited in the EA are seem shallow and flawed and we are, therefore, requesting that an Environmental Impact Statement be completed for the Proposed Action on Runway 4L/22R at JFK airport. We are further requesting that if additional runway length is absolutely necessary, that all possible alternatives to the lengthening of the runway on the Northern end be critically explored and considered before any decision is made. In fact, we question the wisdom of unbridled airport expansion and growth, which seems equivalent to airport sprawl. How big is big enough? Is there or should there be a finite limit to the size of an airport? Should there be a limit on the size of commercial jets, or should they continue to get bigger and bigger and runways continue to get wider and longer to accommodate them? Finally,

we are demanding that before any further airport-related negative impacts on the Brookville community are envisioned or planned, that the PANYNJ do a Part 150 Plan to provide mitigation for the already horrendous noise that impacts our community. We are also demanding that cumulative risks assessments be completed for all of the projects planned by the PANYNJ and related airport businesses in the JFK vicinity before any approvals are given. This we have been demanding for years.

Very truly yours,

Barbara E. Brown,
President

Crystal Brown
1st Vice President

Louis KilKenny
2nd Vice President

John Besant
Treasurer

Jessie Herriott
Financial Secretary

Greta Salsbury
Parliamentarian

Cecil Dixon
Member-at-Large

Calvin Morgan
Member-at-Large

Derrick Warmington
Community Board 13 Rep

Spring-Gar Community Civic Association, Inc.
P.O. Box 300283
Jamaica, New York 11430-0283

October 28, 2012

Port Authority of New York & New Jersey
Aviation Department
225 Park Avenue South, 9th Floor
New York, New York 10003
Attention: Mr. Edward Knoesel

RE: Runway 4L/22R Improvements – Public Comments

Dear Mr. Knoesel,

The purpose of this letter is to provide the Port Authority of NY/NJ with comments being submitted on behalf of Spring-Gar Community Civic Association, residents and members, which is the community immediately adjacent to the North of the proposed runway expansions at JFK International Airport.

Although Spring-Gar recognizes JFK International Airport as a major gateway to domestic and International destinations, we feel several environmental assessment issues have not been taken into account related to negative community impact.

Spring-Gar is against the Runway 4L/22R Improvements in its current form for the following reasons:

1. **Aircraft noise** is this most critical issue with Springfield Garden residents surrounding JFK, and the proposed runway extensions to the North. It will only make noise an even bigger issue for residents and children in our community. The runway extension at JFK Airport is only the current aviation effort to meet the demands for **NextGen**, within the next 20 years. Extending and widening the runway safety zone to the North, will only result in an increase of noise and damaging foundation infrastructure to houses and already deafening the residential communities with low flying aircraft, particularly at takeoffs rather than landings.

- Extension of runway is being considered North of the airport rather than South. Jamaica Bay to the South, is Federally protected from any runway expansion, which is mostly over water. Expansion to the North is immediately over residential areas and not protected over State and privately owned related properties.

2. **Fuel emissions** by airport aircraft and the surrounding air cargo facilities vehicles in the immediate area, have had a long term impact on the health and well being of the Springfield Garden residents. Currently, there is no environmental monitor to measure air quality anywhere in close proximity of this or other runways. How can the Port Authority of NY/NJ state there is **NO** environmental impact to the health of the adjacent communities, when there are no monitors immediate to this runway to measure current air quality? Not to mention the impact **NextGen** will add to this health problem with the planned increase in flights in order to reduce delays.

The long term health statistics support a high numbers of health issues directly related to toxins attributed with airport emissions. As the airport continues to expand, those numbers are only certain to grow. Asthma, stress and other conditions directly related to our children's educational impacts, will continue to have a negative impact on our children and adults.

3. Statements have been made by The Port Authority that **ALL** schools in the DNL related area around JFK Airport have been soundproofed to reduce aircraft noise. We have made inquiries with several of the neighboring schools and confirmed they have **NOT** been soundproofed. Another issue of importance is children are not in school and adults are not at work **all day.** Yet airport traffic is performing takeoffs and landings, bombarding noise and jet fuel emissions around the clock. In view of the inevitable implementation of **NextGen,** airports will only be increasing traffic, noise and toxins into the air that surrounding communities will breathe, affecting our long term health.

Another long term goal that should be considered to minimize the impact on our residential communities is the conversion to more efficient jet engines by the air carriers. In addition, air cargo facility vehicles supporting the airport carriers, should be mandated to convert to electric or other fuel efficient engines, to help in the reduction of toxins we breathe. The immediate area North of JFK Airport has already become the focus of many fuel emitting establishments adding to the air cargos, like the NYPD Tow Pound and MTA (JFK) Bus Depot.

Please take our comments provided into account prior to your decision on the proposed expansion of Runway 4L/22R Improvements.

Respectfully submitted,

Mr. Lonnie W. Glover,
President, Spring-Gar Comm. Civic

cc: Eastern Queens Alliance Chair, Barbara E. Brown
Hon. U.S. Congressman, Gregory W. Meeks
Hon. U.S. Senator, Charles E. Schumer
Hon. U.S. Senator, Kristen Gillibrand
Hon. Queens Borough President, Helen Marshall
Hon. City Council Member, James Sanders, Jr.
Community Board 13 Queens Chair, Brian Block
Spring-Gar Community Civic Association, Inc.

The Port Authority of NY/NJ
225 Park Avenue
NY, NY 10003

137-35 Brookville Blvd.
Rosedale, NY 11422
October 21, 2012

Dear Sir/Madam,
Attn: Edward Knoesel

Re: Draft Environmental Assessment prepared for the Runway 4L/22R Improvements Project at JFK International Airport

We the members of St. Clare Church Choir have recently been made aware of the proposed extension of Runway 4L/22R which will run north towards the communities of Rosedale, Laurelton and Springfield Gardens. As it now stands, this zone is already impacted by noise and air pollution created by low flying aircraft in the following ways:

- vibrating windows
- triggered car alarms
- disturbed sleep in the middle of the night (even with closed windows), when the roar of engines can sometimes be heard at two minute intervals between take-offs
- very poor air quality, especially on humid days; and Brookville Park, an outdoor venue for many sporting and recreational events for all ages, has been bearing the brunt as it lies directly below a flight path
- inability to effectively conduct meetings, church services, etc., without interference from aircraft noise

It was also disheartening to learn that trees in Idlewild Park, a nature preserve which abuts many homes in Springfield Gardens, have been identified for topping in order to facilitate pilot visibility. This not only means that residents will be exposed to increased noise but their homes will be dangerously closer to an aircraft's path, not to mention that these very trees which serve as buffers and filters of toxic emissions will be in jeopardy.

We are fully aware that this airport is an important hub which generates much revenue and provides many jobs, but we do ask for wisdom in choosing an environmentally friendlier alternative to your proposed project.

Your kind understanding and cooperation would be greatly appreciated.

Yours sincerely,

St. Clare Church Choir

Sharon Chang | Veronica Mastell | [illegible]
Mary Ann Pratt Curry | Margaret Thomas Henry | Gloria G. Jones
Lauretta Irvin | [illegible] | Suzette Reine-Francis
[illegible] | [illegible] | [illegible]
[illegible] | George Minna | [illegible]

cc. Rev. Andrew. Struzzieri
Rev. Alonzo Cox

St. Peter's Lutheran Church
224-04 147th Avenue
Springfield Gardens, New York 11413
718-481-7240

Mr. Edward Knoesel
Port Authority of NewYork/New Jersey
225 Park Avenue South 9th Floor
New York, New York 10003

November 1, 2012

Dear Mr. Knoesel,

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At a recent civic association meeting, Port Authority officials said that the plan includes cutting many of our nearby trees. If our trees are blocking the flight path of planes, the solution is not to cut the trees but rather to raise the altitude of the planes and change their path to the JFK runways.

It is simply an accepted fact in our community that whether you are indoors or outside, any conversation is going to be punctuated every ten or fifteen minutes by silence as planes roar overhead. In our church, speakers must constantly pause for the same reason, even though they use a microphone.

In short, bringing planes overhead more often and at lower altitudes is totally unacceptable in our area where most residents are striving to build a quiet, decent, peaceful, harmonious community. The plan as it was presented at the civic meeting seems to show callousness, mean-spiritedness, and ill-will on the part of the Port Authority and the airport. I urge you to put the present plans aside and consider other alternatives.

Sincerely,

Deverdah Smith

224-04 147th Avenue, Springfield Gardens, N.Y. 11413

St. Peter's Lutheran Church
224-04 147th Avenue
Springfield Gardens, New York 11413
718-481-7240

Mr. Edward Knoesel
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New York, New York 10003

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Sincerely,

Brenda C. White

224-04 147th Avenue, Springfield Gardens, N.Y. 11413

St. Peter's Lutheran Church
224-04 147th Avenue
Springfield Gardens, New York 11413
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Sincerely,

Cynthia Griffith

224-04 147th Avenue, Springfield Gardens, N.Y. 11413

St. Peter's Lutheran Church
224-04 147th Avenue
Springfield Gardens, New York 11413
718-481-7240

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Sincerely, Edward Dugan

224-04 147th Avenue, Springfield Gardens, N.Y. 11413

St. Peter's Lutheran Church
224-04 147th Avenue
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Sincerely, Daphne Jane

224-04 147th Avenue, Springfield Gardens, N.Y. 11413

St. Peter's Lutheran Church
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Springfield Gardens, New York 11413
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Sincerely,

George A. Bruff

224-04 147th Avenue, Springfield Gardens, N.Y. 11413

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Sincerely,

Darmin Lane

224-04 147th Avenue, Springfield Gardens, N.Y. 11413

St. Peter's Lutheran Church
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Sincerely,

Norma McGregor

224-04 147th Avenue, Springfield Gardens, N.Y. 11413

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Sincerely,

Irene Ritter, Jelani Ritter

224-04 147th Avenue, Springfield Gardens, N.Y. 11413

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Sincerely,

224-04 147th Avenue, Springfield Gardens, N.Y. 11413

St. Peter's Lutheran Church
224-04 147th Avenue
Springfield Gardens, New York 11413
718-481-7240

Mr. Edward Knoesel
Port Authority of NewYork/New Jersey
225 Park Avenue South 9th Floor
New York, New York 10003

November 1, 2012

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Sincerely, Ruth Williams

224-04 147th Avenue, Springfield Gardens, N.Y. 11413

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Springfield Gardens, New York 11413
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Sincerely,

224-04 147th Avenue, Springfield Gardens, N.Y. 11413
Brenda Davis

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Springfield Gardens, New York 11413
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Elsie J Henry

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Sincerely,

MRS Barbara Flowers

224-04 147th Avenue, Springfield Gardens, N.Y. 11413 BARBARA Flowers

St. Peter's Lutheran Church
224-04 147th Avenue
Springfield Gardens, New York 11413
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Sincerely,

Theresa R Williams

224-04 147th Avenue, Springfield Gardens, N.Y. 11413

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Sincerely,
Christene Washington

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Sincerely,

Ina Thompson

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D Kidd

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Sincerely, Nadine V. Coates

224-04 147th Avenue, Springfield Gardens, N.Y. 11413

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224-04 147th Avenue
Springfield Gardens, New York 11413
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Sincerely,

Emile F. Kelly

224-04 147th Avenue, Springfield Gardens, N.Y. 11413

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Sincerely, Jacqueline Francis

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Sincerely,

Norma Hyer

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Sincerely,

Jane Devore

224-04 147th Avenue, Springfield Gardens, N.Y. 11413

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Sincerely,

224-04 147th Avenue, Springfield Gardens, N.Y. 11413

St. Peter's Lutheran Church
224-04 147th Avenue
Springfield Gardens, New York 11413
718-481-7240

Mr. Edward Knoesel
Port Authority of NewYork/New Jersey
225 Park Avenue South 9th Floor
New York, New York 10003

November 1, 2012

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Sincerely,

RICHARD ANGLIN

224-04 147th Avenue, Springfield Gardens, N.Y. 11413

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718-481-7240

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Sincerely,
Elizabeth Samuel

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Sincerely, Janicka Grant

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Caroline Heilke

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Matthew Rusbrook M C Taggart

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MAYOR
THOMAS J. TWEEDY

TRUSTEE
JAMES E. RHATIGAN

TRUSTEE
MARY-GRACE TOMECKI

TRUSTEE
DOMINICK A. LONGOBARDI

TRUSTEE
KEVIN M. FITZGERALD

Incorporated Village of Floral Park

ONE FLORAL BOULEVARD, P.O. BOX 27, FLORAL PARK, N.Y. 11002
TELEPHONE 516-326-6300 VILLAGE HALL FAX 516-326-2734
BUILDING DEPARTMENT FAX 516-326-2751 PUBLIC WORKS FAX 516-326-6435
WEB FPVILLAGE.ORG

VILLAGE ADMINISTRATOR
PATRICK E. FARRELL

VILLAGE CLERK
SUSAN E. WALSH

SUPERINTENDENT PUBLIC WORKS
STEPHEN L. SIWINSKI

SUPERINTENDENT BUILDINGS
STEPHEN L. SIWINSKI

ASSESSOR
GAY TAFFEL

June 13, 2012

Ed Knoesel
Manager, Environmental Programs
Aviation Department
The Port Authority of NY & NJ
225 Park Avenue South, 9th Floor
New York, NY 10003

Dear Mr. Knoesel:

The Village of Floral Park is in receipt of the Draft Environmental Assessment for the Runway 4L/22R Improvements Project at John F. Kennedy International Airport. As a Trustee in the Village of Floral Park and her mayoral-appointed Noise Abatement Officer, thank you for the opportunity to comment on the proposed initiative. We welcome your response to our concerns and questions.

The Village of Floral Park is geographically located 7 miles from Kennedy International Airport and situated directly under the flight paths of the ILS approach to Runways 22L and 22R. Estimates reveal that approximately 75% of the 4,407 residential properties that constitute Floral Park are adversely affected by air traffic noise. In this vein, Floral Park has concerns and in turn, questions related to the short-term, as well as the long-term impact of the project proposed by the Draft Environmental Assessment (DEA), on our community's quality of life. These concerns and questions are outlined below for your consideration and response:

1. Given the current nature of the glide slope that dictates the ILS flight path, Floral Park is consistently affected by arriving airplanes located at 1,600 feet. According to Page I-21 of the DEA, when the threshold is extended and the localizer is moved for Runway 22R, "the relocation would allow for reduced visibility minimums on the Runway 22R approach." According to Page B-25 of Appendix B, "as the landing threshold is shifted to the north, the arriving aircraft would be at a lower altitude over a given point on the ground to the north of the Airport and thus would be slightly louder." A) What is the proposed new altitude over the Village of Floral Park, of aircraft

arriving on Runway 22R? B) Will the change in altitude be mirrored by aircraft arriving on the ILS approach to Runway 22L?

2. According to Appendix C, Page C-18, "Construction of the Proposed Action is planned to occur between July 2013 and November 2014. The construction is planned to occur in five stages which would allow at least three runways to remain operational at all times during construction." The Village of Floral Park bore a significant increase in air traffic noise when Runway 31L was closed for four months to accommodate Phase 2 of its rehabilitation in 2010. The Village of Floral Park continues to experience the adverse effects of high levels of air traffic as the concrete punch-list for Runway 31L is completed, which was not part of any phase, but still requires Runway 31L to be closed regularly during the overnight hours. A) During what phase of the proposed rehabilitation and for how long will Runway 4L/22R be closed? B) Will Runway 4L/22R be closed for a set period of time, i.e. 24 hours a day, 7 days a week? C) Will the concrete punch-list that has caused the continual closures of Runway 31L during the months of September 2011 to the present time continue to be addressed during the time frame proposed for the rehabilitation of Runway 4L/22R? E) How does the Port Authority's plan to address air traffic when Runway 4L/22R is not in service? F) Does the Port Authority plan on asking the Federal Aviation Administration or any other relative agency to speak to the airlines and/or the airline industry about voluntarily reducing their number of operations to minimize the potential for delays when Runway 4L/22R is out of service? G) Will the Port Authority engage the airlines and/or the airline industry in a discussion about voluntarily reducing their number of operations to minimize the potential for delays when Runway 4L/22R is out of service?

3. Arrivals into Runway 22R that utilize the ILS approach are typically part of two unique runway configuration management models. The first configuration is as follows: 22L (ILS approach) is used for arrivals - 22R captures the overflow from 22L for arrivals – 22R is used for departures. The second configuration is as follows: 22L (ILS approach) is used for arrivals – 22R captures the overflow from 22L for arrivals – 31R is used for departures. A) If 22R is not available for arrivals during any phase of the proposed rehabilitation, what runway will be used to capture the overflow from Runway 22L? B) Are there plans to work with TRACON to encourage the use of the VOR/DME approach to Runway 22L when Runway 22R is out-of-service to allow for a more equitable distribution of air traffic during any phase of the proposed rehabilitation?

4. Appendix B, Page B-2 of the DEA reads "a significant noise impact would occur if analysis shows that the proposed action will cause noise sensitive areas to experience an increase in noise of DNL 1.5 dB or more at or above DNL 65 dB when compared to the no action alternative for the

same timeframe." A) Where are the "noise sensitive areas" located and which communities are deemed "noise sensitive"? B) How and by whom are the "noise sensitive areas" determined?

5. Figures supplied by the Aeronautical and Technical Services Division of the Aviation Department of the Port Authority of New York and New Jersey for the noise monitor positioned directly under the flight path for Runway 22L, in Floral Park confirms that in the last two years, noise levels have actually increased. More disturbing is that the numbers reported hover within the range of the 65 DNL, often exceeding numbers reported by monitors located in closer proximity to Kennedy, i.e. Inwood – Runway 13R and Howard Beach – Runway 31L. For example, in December 2011, the Floral Park noise monitor registered a reading of 63.2, compared to December 2010, when the noise monitor registered a reading of only 58.5. A) Does the Port Authority anticipate the noise monitor readings for the Floral Park noise monitor to increase during the proposed construction period, i.e. July 2013 to November 2014? B) Does the Port Authority anticipate the noise monitor readings for the Floral Park noise monitor to increase after the completion of the proposed rehabilitation of Runway 4L/22R and/or due to the rehabilitation of Runway 4L/22R?

6. Appendix B, Page B-4, Table B-2 references an increase of 50,782 operations projected for 2015 over the number of operations in the one-year period, ending in September 2011. A) What will be done to prevent significant increases to DNL levels?

7. Appendix B, Page B-3, Table B-1 denotes that the proposed construction will result in a decrease of 132 feet of takeoff and landing distance available on Runway 4L and a decrease of 132 feet of takeoff distance available on Runway 22R. A) Does this change in the infrastructure of Runway 4L/22R compromise the ability of either runway to accommodate certain aircraft for landing? B) Will the aforementioned change in infrastructure require Runway 22L to be used more frequently as an arrival runway?

8. According Appendix B, Pages B-17 and 19, Tables B-8 and B-9 respectively, arrivals on 22L for both day and night in 2015 and 2020 are projected to absorb 31% and 30% of overall operations at Kennedy. However, the number of operations is expected to increase by 50,782 in 2015 and 92,036 in 2020. Will this increase in volume not create "a significant noise impact" as outlined in the FAA's own INM criteria?

9. A) Will the proposed project described in the DEA result in any new runway configurations? B) Will the proposed project described in the DEA change any existing runway configurations and if so, which ones and how?

10. Is any aspect of the proposed rehabilitation of Runway 4L/22R designed to facilitate the use of RNAV technology in airport operations at Kennedy Airport?

11. According to Chapter 5, Page 5-36 of the DEA, with respect to the ***"Delay Reduction Program – New Taxiways, Improvements to Existing Taxiways and Runway 13R Threshold Relocation,"*** "major elements of the project were completed in November 2010; however, a few punch list items remain outstanding and the project is not scheduled to be completely finished until the second quarter of 2012." A) Have any of the punch list items required the closure of Runway 31L on the overnight hours? B) What is the month and year that the Port Authority anticipates the punch list to be completed? C) Will the punch list be completed by the time the proposed project is scheduled to begin, i.e. July 2013?

On behalf of the Village of Floral Park, thank you again for the opportunity to share our comments and questions with regards to the DEA for the proposed rehabilitation of Runway 4L/22R at Kennedy International Airport. We look forward to your response in the near future.

Sincerely,

Mary-Grace Tomecki

Mary-Grace Tomecki
Trustee
Village of Floral Park

Appendix E

APPENDIX E
PUBLIC INVOLVEMENT

To satisfy requirements for public involvement, the following is a copy of the Local Notice of Availability and Request for Comment published in the *Daily News (Queens edition), Queens Courier (Sun Courier), Queens Chronicle, South East Queens Press, Queens Times Ledger, Queens Ledger, Newsday (Long Island), LI Herald, Long Island Press, El Diaro*, and the *Sing Tao Daily* newspapers.

Throughout the development of the Draft EA, the Port Authority of New York and New Jersey held briefings to discuss the Runway 4L/22R project at John F. Kennedy International Airport (JFK) with the following local and state elected officials:

- August 20: QBP Helen Marshall's staff and Deputy Borough President: Hugh Weinberg and Deputy Borough President Barry Grondenchik
- September 13: State Senator James Sanders, Jr.
- September 18: Community Board #13
- September 20: State Senator Joseph Addabbo, Jr.
- September 20: NYC Council Member Erich Ulrich
- September 20: NYC Council Member, Deputy Majority Leader Leroy Comrie
- September 20: State Senator James Sanders, Jr.
- September 23: NYC Council Member Donovan Richards
- October 9: Assemblyman Goldfeder
- Rep. Meeks – To be scheduled
- Rep. McCarthy – To be scheduled
- Rep. Israel – To be scheduled
- Assemblywoman Titus – To be scheduled

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THE PORT AUTHORITY OF NEW YORK & NEW JERSEY

NOTICE OF AVAILABILITY and REQUEST FOR COMMENT and

NOTICE OF PUBLIC INFORMATION MEETING

Revised Draft Environmental Assessment
Runway 4L/22R Improvements Project
John F. Kennedy International Airport, Jamaica, New York

In accordance with the National Environmental Policy Act (NEPA), notice is hereby given that copies of a Revised Draft Environmental Assessment (EA) for the Runway 4L/22R Improvements Project at John F. Kennedy International Airport are available for public review and at the following locations:

The Port Authority of NY & NJ
John F. Kennedy International Airport
General Manager's Office
Building 14, 2nd Floor
Jamaica, NY 11430
Attn: Jerry Spampanato
Hours: 08:00 am to 04:00 pm

The Port Authority of NY & NJ
Aviation Department
Aviation Technical Services
225 Park Avenue South, 9th Floor
New York, NY 10003
Attn: Edward Knoesel
Hours: 09:00 am to 05:00 pm

The Revised Draft EA document for this project will be available at these locations until November 18, 2013. In addition, a copy of this document may be viewed online at: http://www.panynj.gov/about/pdf/JFK-Runway-4L-22R-EA.pdf

The EA responds to all of the requirements of the Federal Aviation Administration (FAA) for preparation of an Environmental Assessment under NEPA and also documents compliance with Federal Executive Order 11988, Floodplain Management. In accordance with NEPA, The Port Authority is inviting the Public to submit, in writing, comments on the Revised Draft Environmental Assessment prepared for the Runway 4L/22R Improvements Project at John F. Kennedy International Airport. This EA is a revision of the Draft EA that initially advertised for public comment in May, 2012. The Port Authority is accepting comment on this Revised Draft EA document until the official comment period for this document closes on November 18, 2013. Comments must be received by close of business on November 18, 2013 in order to be considered.

Comments on this EA should be sent to: The Port Authority of NY & NJ, 225 Park Avenue South, 9th Floor, New York, NY 10003, Attn: Edward Knoesel.

In addition, comments may be emailed to JFKRWYEA@panynj.gov with the subject heading "JFK RWY 4L-22R EA COMMENT." If you have any questions on this notice please contact Edward Knoesel at address above.

PUBLIC INFORMATION MEETING
The Port Authority will hold a public information meeting to highlight modifications in the revised EA document. The meeting will be held on October 24 at St. Peter's Church at 7:30 p.m. in collaboration with Eastern Queens Alliance. The church is located at 224-04 147th Avenue, Queens, New York 11413.

THE PORT AUTHORITY OF NY & NJ

Revised Draft Environmental Assessment
Runway 4L/22R Improvements Project
John F. Kennedy International Airport,
Jamaica, New York

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