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Subject: Freedom of Information Online Request Form

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Required copies of the records: Yes

List of specific record(s):

Kindly provide any and all Environmental Impact Statements EIS, either Draft DEIS or Final FEIS or Environmental Assessments EA pertaining to the Terminal 3 Redevelopment Project Project A03-591.

THE PORT AUTHORITY OF NY & NJ

FOI Administrator

June 10, 2013

Mr. Anthony Stramaglia
SaveTheWorldport.org
P.O. Box 1126
Madison, NJ 07940

Re: Freedom of Information Reference No. 14013

Dear Mr. Stramaglia:

This is a response to your May 22, 2013 request, which has been processed under the Port Authority's Freedom of Information Code (the "Code", copy attached) for copies of Environmental Impact Statements EIS, either Draft DEIS or Final FEIS or Environmental Assessments EA pertaining to the Terminal 3 Redevelopment Project A03-591.

Material responsive to your request and available under the Code can be found on the Port Authority's website at <http://www.panynj.gov/corporate-information/foi/14013-O.pdf>. Paper copies of the available records are available upon request.

Please refer to the above FOI reference number in any future correspondence relating to your request.

Very truly yours,


Daniel D. Duffy
FOI Administrator

Attachment

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Final

Environmental Assessment

Terminals 3 and 4 Redevelopment Project John F. Kennedy International Airport

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



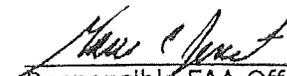
**THE PORT AUTHORITY
OF NY & NJ**

June 2010

**Prepared by
Landrum & Brown**



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



Responsible FAA Official

7/19/10

Date

Table of Contents

Table of Contents

1.0	Introduction and Background.....	1-1
1.1	Background and Description of the Proposed Action	1-1
1.2	Document Content and Organization	1-11
2.0	Purpose and Need	2-1
2.1	Purpose	2-1
2.2	Need	2-1
2.3	Description of the Proposed Action.....	2-8
2.4	Implementation Phasing.....	2-9
2.5	Required Land Use/Environmental Permits	2-10
3.0	Alternatives.....	3-1
3.1	Proposed Action Alternative	3-1
3.2	No-Build/No-Action Alternative.....	3-3
3.3	Alternatives Considered but Eliminated from Further Consideration	3-4
3.4	Alternatives Selected for Further Evaluation in this EA	3-6
4.0	Affected Environment.....	4-1
4.1	Environmental Setting	4-1
4.2	Resources Potentially Affected.....	4-2
5.0	Environmental Consequences.....	5-1
5.1	Noise.....	5-2
5.2	Compatible Land Use	5-2
5.3	Socioeconomic Impacts, Environmental Justice, and Children’s Environmental Health and Safety Risks.....	5-5
5.4	Secondary (Induced) Impacts	5-8
5.5	Air Quality	5-8
5.6	Water Quality	5-10
5.7	Section 303c Resources	5-13
5.8	Historical, Architectural, Archaeological, and Cultural Resources.....	5-13
5.9	Fish, Wildlife, and Plants	5-14
5.10	Wetlands	5-15
5.11	Floodplains	5-15
5.12	Coastal Resources	5-19
5.13	Wild and Scenic Rivers	5-19
5.14	Farmland	5-19
5.15	Energy Supply and Natural Resources	5-20
5.16	Light Emissions and Visual Impacts.....	5-22
5.17	Hazardous Materials, Pollution Prevention, and Solid Waste	5-23
5.18	Construction Impacts.....	5-24
5.19	Other Considerations	5-29
5.20	Cumulative Impacts.....	5-30
5.21	Adverse Impacts That Cannot be Avoided if the Proposed Action is Implemented.....	5-40

Table of Contents, (Continued)

6.0	Mitigation.....	6-1
7.0	Public Involvement	7-1
8.0	Prepares	8-1
9.0	References	9-1

Tables

2-1	Passenger and Aviation Activity	2-2
5-1	General Conformity Evaluation	5-9
5-2	Projected Annual Energy Demand – No-Build/No-Action vs. Proposed Action	5-21
5-3	Construction Equipment Noise.....	5-26

Exhibits

1-1	Airport Environs	1-3
1-2	Existing Terminal Layout	1-5
1-3	Proposed Terminal Redevelopment	1-7
4-1	Outfalls.....	4-7
5-1	Land Use.....	5-3
5-2	Floodplains.....	5-17

Appendices

A	Agency Coordination.....	A-1
B	Surface Transportation.....	B-1
C	Air Quality.....	C-1
D	Public Involvement	D-1

Acronyms

Acronyms

µg/m ³	micrograms per cubic meter
AC	Advisory Circular
ALP	Airport Layout Plan
APU	Auxiliary Power Units
AQCR	Air Quality Control Region
ATA	Air Transport Association
BMP	Best Management Practices
BOD	Biological Oxygen Demand
CAA	Clean Air Act (as amended in 1990)
CBD	Central Business District
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
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
GSE	Ground Support Equipment
HDR	High Density Rule
HVAC	Heating, Ventilating, and Air Conditioning
INM	Integrated Noise Model
ISR	Indirect Source Reviews
JFK	John F. Kennedy International Airport
JFKE	John F. Kennedy Expressway
JFKIAT	John F. Kennedy International Air Terminal
L _{dn}	Day-Night Average Noise Level
LIRR	Long Island Railroad
LOS	Level of Service
LPG	Liquid Propane Gas
LRS	Light Rail System
LTO	Landing and Take-Off Cycle
mg/m ³	milligrams per cubic meter

Acronyms, (Continued)

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
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
PCA	Pre-Conditioned Air
PCB	Polychlorinated Biphenyl
PM ₁₀	inhalable particulate matter less than 10 microns in diameter
Port Authority	Port Authority of New York and New Jersey
ppm	parts per million
SHPO	Station Historic Preservation Officer
SIP	State Implementation Plan
SO ₂	Sulfur Dioxide
SO _x	Sulfur Oxides
SPDES	State Pollution Discharge Elimination System
SWPPP	Storm Water Pollution Prevention Plan
TSA	Transportation Security Administration
TSP	Total Suspended Particulate
UTB	Unit Terminal Building
USACOE	U.S. Army Corps of Engineers
U.S.C.	U.S. Code
USDOT	United States Department of Transportation
USFWS	U.S. Fish and Wildlife Service
V/C	Volume-to-Capacity
VOC	Volatile Organic Compound
VWE	Van Wyck Expressway
WPCF	Water Pollution Control Facility
WRCRA	Waterfront Revitalization and Coastal Resources Act

Chapter 1

1.0 Introduction and Background

This Environmental Assessment (EA), required by the National Environmental Policy Act of 1969 (NEPA), as amended (40 CFR 1500-1508)¹ analyzes the potential environmental effects of a Proposed Action involving an airport terminal modernization and redevelopment program for Delta Air Lines at John F. Kennedy International Airport (JFK or Airport) – the “Proposed Action”. The EA is required under NEPA because the project will require the Federal Aviation Administration (FAA) to approve a change to the Airport Layout Plan (ALP) for JFK, which is a Federal action.

1.1 Background and Description of the Proposed Action

Background

JFK is located in the southeastern section of Queens County, New York City, on Jamaica Bay (**Exhibit 1-1**). It is 15 miles by highway from midtown Manhattan. The Airport consists of 4,930 acres, including 880 acres in the central terminal area. The Port Authority of New York and New Jersey (Port Authority) has operated JFK under the terms of a lease with the City of New York since June 1, 1947. Today, JFK serves as the premier international gateway in the United States, with non-stop service to more foreign cities than any other airport in the U.S. JFK also serves the largest domestic markets in the U.S. The Airport handles more than 46 million domestic and international passengers annually and accommodates more than 432,000 flights per year.² There are eight airline passenger terminals at JFK. Each terminal serves one or more airlines, with the exception of Terminal 6, which is currently vacant and scheduled for demolition in 2012. **Exhibit 1-2** shows the existing terminal layout at JFK.

Over the last 15 years, a significant emphasis has been placed on modernizing and redeveloping the passenger terminals to respond to the current needs of airlines and passengers. Terminal 1 was completed in 1998, Terminal 2 was completed in 1994, Terminal 4 was constructed in 2002, Terminal 5 was redeveloped in 2009, Terminal 7 was constructed in 2003, and in 2007 the second phase of the new Terminal 8 (which combined Terminal 8 and 9) was completed. Through these modernization and redevelopment programs, airlines have benefited by being able to expand their operations and passengers have benefited through more efficient and comfortable travel experiences.

Terminal 3 at JFK, built in 1960, serves as a principal international gateway for Delta Air Lines and has 16 aircraft gates. Due to the irregular shape of the building and site constraints, efforts to refurbish and modernize Terminal 3 have been constrained within its walls. As a result, the terminal does not meet modern airline requirements and does not offer passengers the amenities they have come to expect at airports. Delta Air Lines and its alliance partners completely occupy Terminals 2 and 3, and utilize three gates at Terminal 4. Terminal 3 is connected Terminal 2 via a secure walkway/bridge with moving sidewalks, but no secure

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

² Long Range Forecast and Key Assumptions, 2010-2019, Kennedy, LaGuardia, Newark, Stewart. Industry Forecasting and Traffic Statistics, November 2009.

connection links Terminal 3 to Terminal 4. Passengers connecting between Terminal 4 and the other terminals are required to exit the building and pass through security prior to boarding their next flight. This is inconvenient for the passengers and increases the need for shuttle bus service between the terminals.

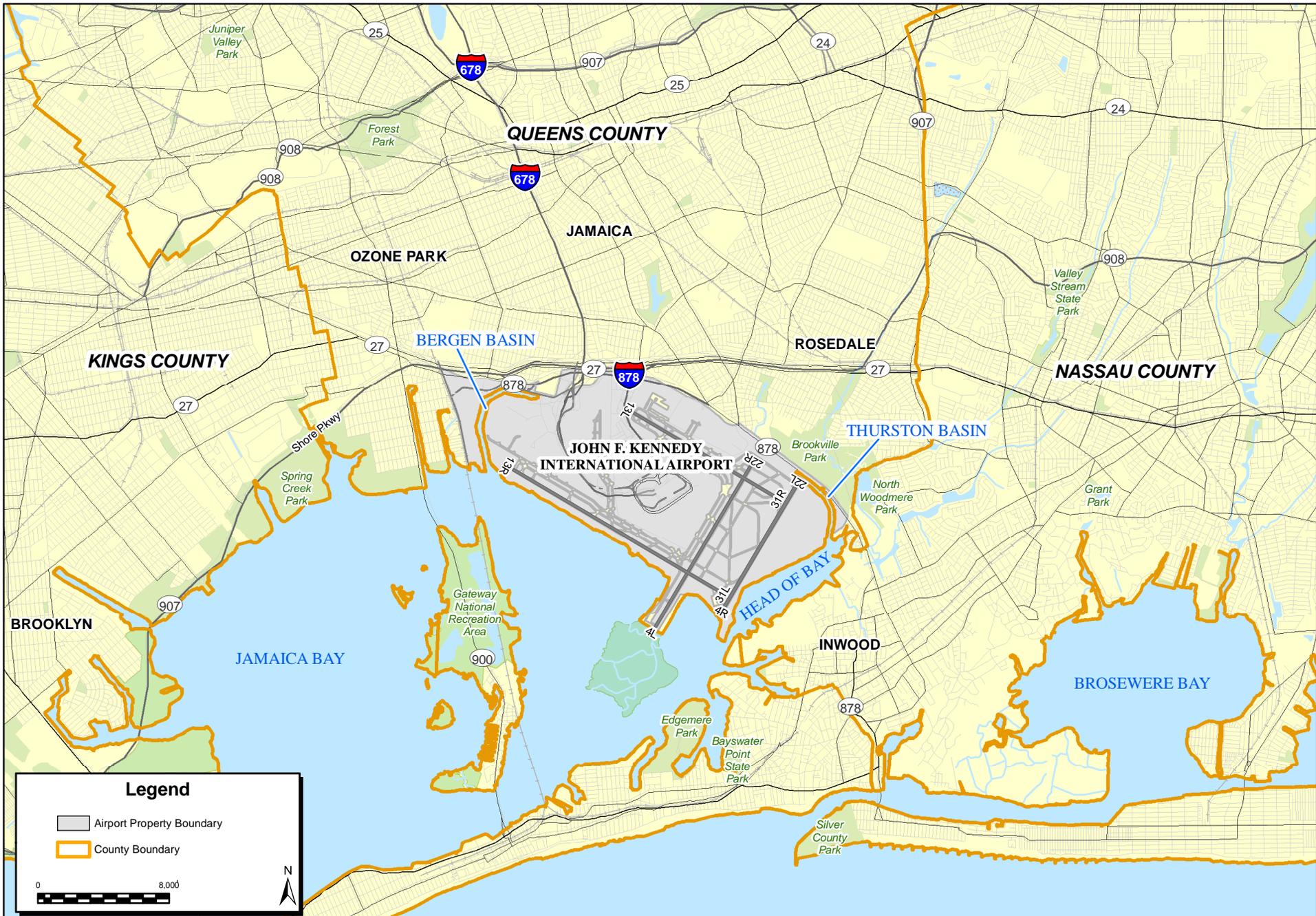
Description of the Proposed Action

Although the economy is currently recovering from a recession, it is generally accepted that previous levels of travel and airline activity will return as the economy stabilizes. Moreover, even with reduced activity, Delta Air Lines has an acute need to improve the level of service and efficiency of operation in the outdated and inefficient existing Terminal 3 facility. In order to accomplish this goal, Delta Air Lines has developed a modernization and redevelopment program for Terminal 3 and 4 that would provide the necessary infrastructure to continue to efficiently offer passengers a comfortable traveling experience that is consistent with the experience passengers have at the other terminals at JFK. The Proposed Action includes the following elements and is shown on **Exhibit 1-3**:

- Relocate 16 Delta Air Lines aircraft gates from Terminal 3 to Terminal 4³
 - Expand Concourse B of Terminal 4 by nine gates
 - Maintain the three existing Delta Air Lines gates at Terminal 4
 - Redesignate four existing gates at Terminal 4 as Delta Air Lines gates
 - Develop additional passenger processing facilities at Terminal 4 to accommodate the additional passengers
 - Install water quality treatment devices
- Extend a secure pedestrian walkway/bridge from Terminal 2 to Terminal 4
- Demolish existing Terminal 3 and its 16 gates now currently occupied by Delta Air Lines; including ancillary facilities
- Redevelop the area where Terminal 3 was located to accommodate aircraft parking positions
- Reconfigure taxiways and connections to existing taxiways between Terminals 2, 3, and 4
- Relocate ground service equipment fueling facility at Terminal 3 and 4 to a more efficient location south of existing Concourse B at Terminal 4
- As a result of redesignating four existing gates at Terminal 4 to Delta Air Lines' gates, Terminal 8 would be expanded by three additional gates and the passenger processing building at Terminal 8 would be expanded to accommodate the carriers displaced by the redevelopment and reconfiguration of Terminal 4. The displaced carriers would utilize up to four existing Terminal 8 gates and the three new gates. This expansion is consistent with the original plans for Terminal 8.⁴

³ The 16 Delta Air Lines gates at Terminal 4 would be a combination of the nine newly constructed gates, the three existing Delta Air Lines gates at Terminal 4, and Delta Air Lines utilizing four existing gates currently occupied by other International Arrivals Terminal (IAT) airlines.

⁴ Terminal 8 opened in August 2005 and Phase 2 was completed in April 2007. It is the newest terminal and the largest facility at the Airport hosting a single airline, American Airlines. This terminal was designed for 57 total gates in two structures. To date, 36 gates and approximately 75 percent of the passenger processing building have been constructed.

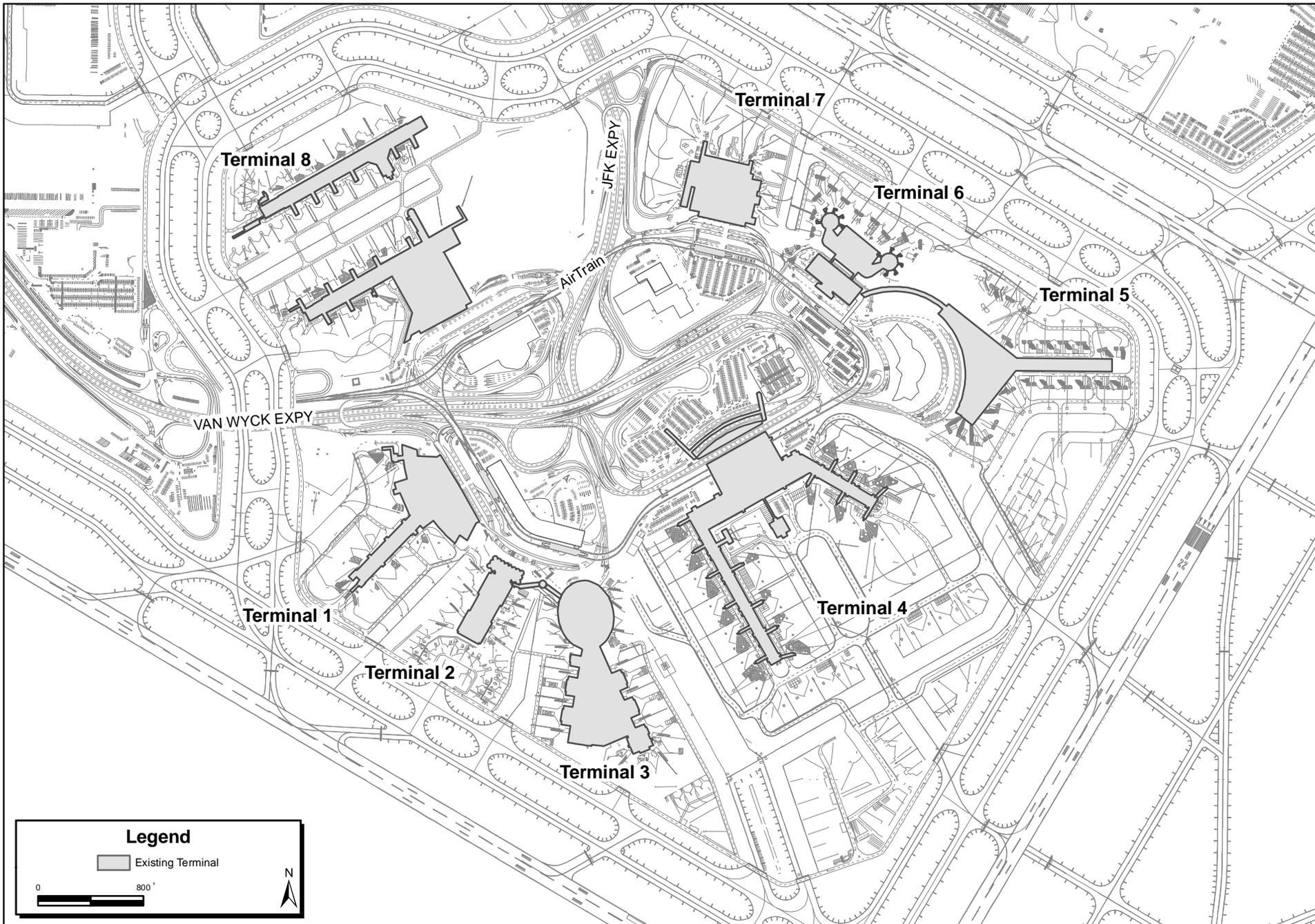


Legend

- Airport Property Boundary
- County Boundary

0 8,000

N

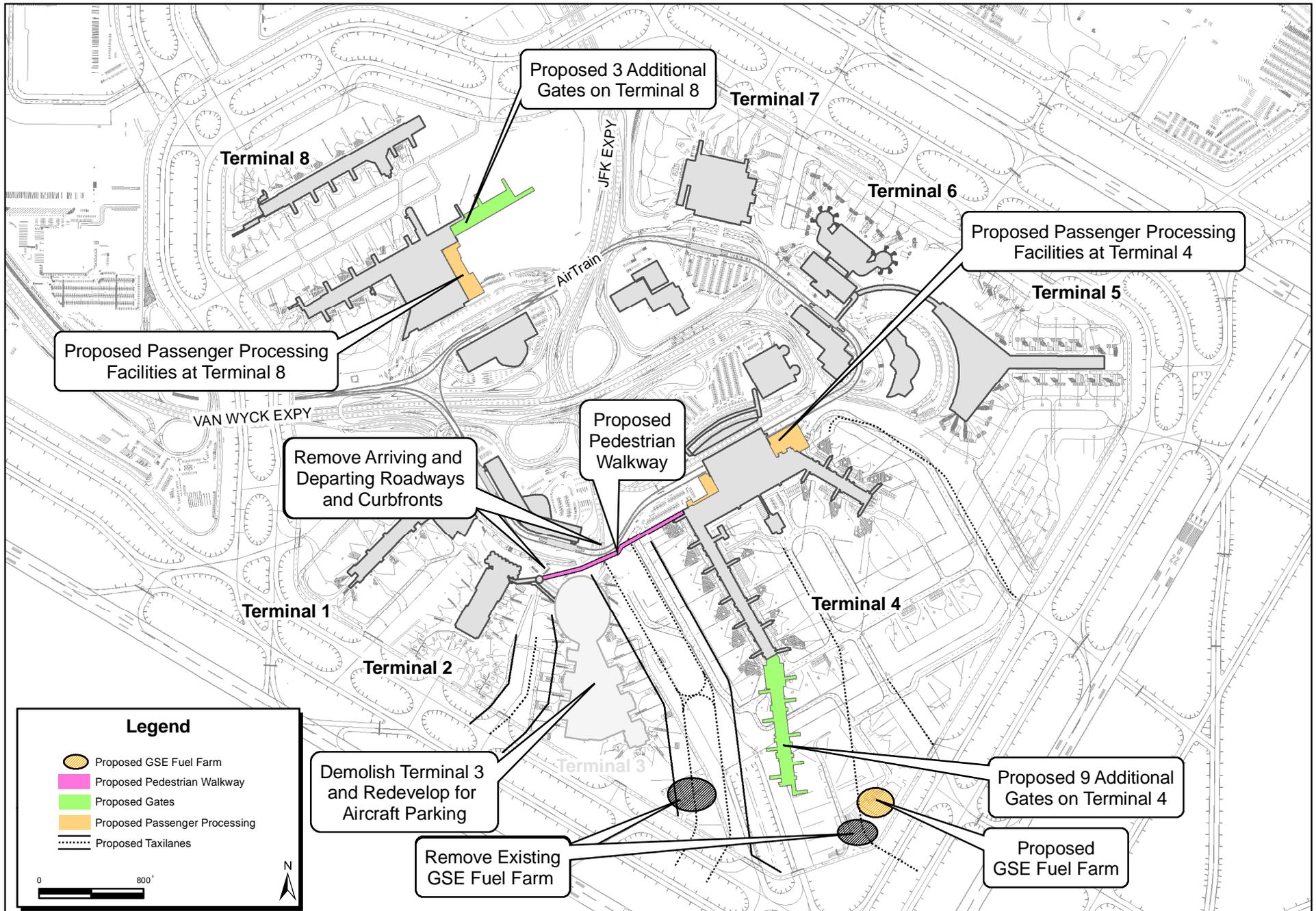


Legend

Existing Terminal

0 800'

N



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

Expand Terminal 4

Concourse B of Terminal 4 would be expanded by nine additional gates and the 16 Delta Air Lines aircraft gates on Terminal 3 would be relocated to Terminal 4. The 16 gates would be a combination of the nine newly constructed gates, the three Delta Air Lines gates at Terminal 4, and Delta Air Lines utilizing four existing Terminal 4 gates currently occupied by other International Arrivals Terminal (IAT) airlines. The IAT airlines currently utilizing the four gates that Delta Air Lines would occupy with the Proposed Action would be relocated to Terminal 8 (see below for more on the Terminal 8 redevelopment).

The Proposed Action would increase the square footage of the Terminal 4 passenger processing facility from approximately 1.5 million square feet to just over 2.0 million square feet. This increase in space is necessary to replace the outdated gates from Terminal 3 and provide the necessary space for modern ticketing and baggage systems. The expanded Terminal 4 passenger processing facility would be similar in design to the existing facilities with multiple levels for accommodating the varied passenger functions. The existing Terminal 4 curbside would be reorganized to accommodate increased passenger pick-up and drop-off activities. Any modifications needed at the curbside would be accommodated through signage changes.

The Proposed Action also includes the extension of a pedestrian walkway/bridge from Terminal 2 to Terminal 4. This 1,465-foot long walkway would have moving sidewalks and would allow passengers using Delta facilities in either Terminal 2 or 4 to travel between the terminals for connecting flights or other purposes. This pedestrian connection between Terminals 2 and 4 would allow passengers to move between the two terminals without exiting to the outdoors and passing through another security checkpoint.

Additionally, 11 hardstand parking positions would be reconfigured in the Terminal 4 envelope and adjacent apron, three of which would be hydrant fueled through a connection to the existing hydrant fuel distribution system. Ground service equipment (GSE) and other ancillary equipment and vehicles would be reoriented to service the gated and hardstand parked aircraft more efficiently. Similarly, the GSE fueling facility located south of Terminal 4 would be relocated to a more efficient position within the apron area. As part of the relocation, a total of nine underground storage tanks would be removed and replaced with new tanks within the Terminal 4 site. The nine underground storage tanks consist of six 4,000 gallon diesel tanks, one 2,000 diesel tank, and two 2,000 gallon gasoline tanks. The Port Authority's Best Management Practices requires that facilities with petroleum and/or chemical bulk storage areas to comply with all applicable regulations including those involving releases, registration, handling, and storage. The Port Authority currently has a Spill Prevention, Control and Countermeasure (SPCC) Plan for JFK. The plan contains appropriate spill prevention and clean up measures. Tenants that store chemicals also must comply with all applicable regulations and prepare and maintain a SPCC Plan. In addition, a fire suppression system would be installed at the new GSE fueling facility.

Demolish Terminal 3

The Proposed Action would include demolition of the entire Terminal 3 building, including 16 gates and the passenger arriving and departing roadways/curbfronts that are wrapped around the Terminal 3 passenger processing facility, as well as the GSE fueling facility located southeast of the terminal. Four underground gasoline and diesel storage tanks, with a combined capacity of 12,000 gallons, would be removed.

The demolition of Terminal 3 would allow the area where the building, roadways, and curbfronts were located to be reconfigured. The space would provide a minimum of 15 aircraft hardstand parking positions, reconfigured taxilanes to accommodate efficient jet movements in and out of the terminal/gate environment, and location for the secure pedestrian walkway/bridge from Terminal 2 to Terminal 4. In addition, GSE and other ancillary equipment and vehicles would be more efficiently accommodated to service the hardstand parked aircraft.

Expand Terminal 8

As a result of the Proposed Action, Terminal 8 would be expanded by three additional gates to accommodate the airlines displaced by the redevelopment and reconfiguration of Terminal 4. Terminal 8 was originally designed for 57 gates and a larger passenger processing facility. This would increase the total gates at Terminal 8 from 36 to 39. The airlines displaced from Terminal 4 would utilize a combination of up to four existing gates at Terminal 8 and the three new gates. The specific airlines to be relocated would be determined based on the codeshare and alliance agreements at the time Terminal 8 is expanded.

In addition, the passenger processing facilities at Terminal 8 would be expanded to accommodate additional screening and check-in facilities for the new gates. Overall, the Proposed Action would increase the square footage of the Terminal 8 passenger processing facility by approximately 200,000 square feet. The existing terminal, which is approximately 1.5 million square feet, would be increased to approximately 1.7 million square feet.

While the full number of gates and passenger processing facilities were not constructed at Terminal 8 originally, the full curbfront and roadways were constructed. Both the proposed expansion of three gates and the passenger processing facilities at Terminal 8 are consistent with the original design of the terminal. Furthermore, because the full curbfront and roadways were constructed, the additional automobile demand can be accommodated without the need for new construction. Any modifications needed at the curbfront would be accommodated through signage changes.

1.2 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 action required to implement the redevelopment of Terminals 3, 4, and 8 is the approval by the Federal Aviation Administration (FAA) of a revised JFK ALP showing the Proposed Action described in Section 1.1.

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

Notice about the subject project was published in the New York Newsday. Copies of this document were made available at John F. Kennedy International Airport, at the Port Authority of New York and New Jersey (Port Authority) offices, and online at <http://www.airportsites.net/JFK-Delta-EA>. A 15-day public comment period was held, ending on (June 15, 2010). No comments were received on the Draft EA document.

Chapter 2

2.0 Purpose and Need

2.1 Purpose

The purpose of the Proposed Action is to modernize and redevelop the Terminal 3 and 4 envelope to allow Delta Air Lines to more efficiently utilize the space available for the safety, comfort, and convenience of passengers traveling at John F. Kennedy International Airport (JFK or Airport).

2.2 Need

The Proposed Action would serve the following needs of Delta Air Lines, the Port Authority of New York and New Jersey (Port Authority), airline passengers, and the general public:

- Need to accommodate existing and forecast aviation demand at an acceptable level of service; and
- Need to modernize and optimize the Terminal 3 and 4 envelope; including managing and alleviating airside, terminal, and landside congestion and enhancing safety.

Each of these needs is discussed below.

2.2.1 The Need to Accommodate Existing and Forecast Aviation Demand at an Acceptable Level of Service

Airport infrastructure improvements at a mature airport in an established market do not stimulate aviation demand; they are a response to existing or anticipated demand. As such, infrastructure improvements and airport redevelopment projects at JFK serve to improve the efficiency and comfort of the traveling public, but do not have an effect on overall airport demand. Demand for air transportation is a function of the economic performance and the attractiveness of the region served by the Airport. Population, business, tourism, educational facilities, medical facilities, and other factors are all drivers of passenger demand. The New York/New Jersey metropolitan area is the one of the most populated regions in the U.S., one of the world's top financial and entertainment centers, a popular tourist destination, home to numerous colleges and universities, and has several of the top medical institutions in the world. Consequently, the demand for air travel in New York is significant and diverse.

The globalization of air travel has created airline alliances and codeshare partnerships that have greatly increased the passenger and cargo service options through the availability of seamless connections to world markets via U.S. gateways. This global network operates at a high level of efficiency with frequent service to many locations. The globalization of air travel, combined with the economics and population of the New York/New Jersey region, contributes to the historical and projected increase in demand.

The Port Authority independently prepares forecasts for the region and the five airports they manage. The forecasts are prepared for optimistic, moderate, and pessimistic outlooks. Of the three forecasts prepared by the Port Authority, the optimistic forecast is the closest to the 2009 Terminal Area Forecast (TAF) prepared by the Federal Aviation Administration (FAA). As shown in **Table 2-1**, the FAA's TAF aircraft operations forecast for the year 2015 is 1.5 percent lower than the Port Authority's optimistic forecast and the TAF passenger (enplanements) forecast is 3.7 percent lower than the Port Authority's optimistic forecast. Based on FAA Order 5090.3C, *Field Formulation of the National Plan of Integrated Airport Systems (NPIAS), Chapter 3, Section 3-2*, "Forecasts supplied by the airport sponsor should not vary significantly (more than 10 percent) from the FAA's forecast." Therefore the Port Authority's optimistic forecasts are appropriate for this project.

**Table 2-1
PASSENGER AND AVIATION ACTIVITY
John F. Kennedy International Airport**

	Port Authority's Forecast		FAA's Terminal Area Forecast		Variance	
Year	Aircraft Operations ¹	Passengers	Aircraft Operations ¹	Passengers	Aircraft Operations ¹	Passengers
2000	287,657	32,856,000	NA	NA	NA	NA
2001	280,318	29,891,000	NA	NA	NA	NA
2002	320,092	29,943,000	NA	NA	NA	NA
2003	350,063	31,736,000	NA	NA	NA	NA
2004	378,443	37,517,000	NA	NA	NA	NA
2005	443,758	40,885,000	NA	NA	NA	NA
2006	438,543	42,629,000	NA	NA	NA	NA
2007	443,754	47,718,000	NA	NA	NA	NA
2008	438,543	47,808,000	NA	NA	NA	NA
FORECAST						
2009	432,931	46,852,000	431,364	45,076,000	0.4%	3.9%
2010	444,457	47,441,000	421,980	44,811,000	5.3%	5.9%
2011	454,439	48,659,000	434,756	46,705,000	4.5%	4.2%
2012	466,338	50,037,000	454,149	49,339,000	2.7%	1.4%
2013	476,616	51,275,000	473,955	51,899,000	0.6%	-1.2%
2014	490,390	52,867,000	493,490	54,311,000	-0.6%	-2.7%
2015	505,557	54,603,000	513,024	56,689,000	-1.5%	-3.7%
2016	521,182	56,392,000	530,378	58,827,000	-1.7%	-4.1%
2017	536,730	58,192,000	548,345	61,048,000	-2.1%	-4.7%
2018	552,196	59,985,000	566,946	63,352,000	-2.6%	-5.3%
2019	569,597	62,078,000	586,203	65,744,000	-2.8%	-5.6%

¹ An Aircraft Operation is either one aircraft takeoff or landing at JFK.

Source: Port Authority of New York and New Jersey, 2010 and FAA 2009 Terminal Area Forecasts, January 2010.

The Port Authority's optimistic forecast projects that the New York/New Jersey region will experience 2.7 percent annual growth in aircraft movements through 2019, with JFK experiencing 2.8 percent annual growth in aircraft movements. As shown in the Table 2-1, by 2019, passenger levels at JFK are expected to reach approximately 62.1 million, compared to 47.8 million passengers in 2008. Aircraft operations at JFK are expected to increase to 569,597 from 2008's level of 438,543. This growth will occur with or without the Proposed Action. To some degree, JFK's forecast growth may be attributable to capacity limitations at another major airport in the region, LaGuardia International (LGA). LGA, which has an absolute cap on flights, as well a perimeter rule constraining non-stop flights and limited capacity to process international flights, is not capable of handling the additional growth projected for the region. Similarly, Newark International Airport (EWR) operates with some of the highest levels of delay in the country.

Delta Air Lines forecasts that their traffic level at JFK will grow from approximately 10.7 million annual passengers in 2010 to approximately 13.7 million passengers in 2019. This level of passenger demand at JFK will occur with or without the Proposed Action; the issue is how efficiently that demand will be met with maximum efficiency and minimal impacts. Level of Service (LOS) is a measure of how well passenger demand is served and is defined as the quality or condition of service that passengers experience at an airport facility. It can be expressed as a measure of consumer inconvenience such as delays, missed flights/connections, or the number and/or types of facilities per consumer such as linear feet of ticket counter, hold rooms, club rooms, baggage claim, Federal Inspection Station (FIS) facilities, concessions, etc.

The existing passenger levels at Terminal 3 exceeded 5.7 million annual passengers in 2009, which is higher than the levels the terminal was designed to accommodate. Demand above available capacity results in a reduced LOS for passengers. Indicators of this reduced LOS at Terminal 3 include unacceptable congestion at the curb-front, long lines at ticket counters and security checkpoints, undersized passenger waiting areas, less than desirable number of concessions and bathrooms, and inefficient access for persons with disabilities.

As passenger demand increases over time, these conditions will be exacerbated, further reducing the LOS. As discussed above, this passenger demand is expected to occur with or without the Proposed Action. Without improvements, the LOS at Terminal 3 will continue to decline and all of Delta Air Lines' passengers utilizing JFK will suffer escalating delays and congestion. Delta Air Lines and its alliance, affiliated, and codeshare partners strive to maintain the highest LOS possible given the infrastructure available at the Airport. Likewise, the Port Authority also has interest in improving the LOS at all of its airport facilities, including Terminal 3, due to its public trust responsibilities to provide the most efficient and convenient air travel experience possible.

Terminal 3 is 50 years old and Delta Air Lines has made several attempts over the years to refurbish it to improve its ability to accommodate passenger demand. Just over the last three years, Delta Air Lines has invested over \$17 million on repairs and renovations to maintain Terminal 3 in its current condition. However, those attempts have been unsuccessful because of the age of the structure, the size and

irregular shape of the structure, and the lack of available space to expand the terminal. Consequently, little can be done to maintain or further improve the LOS in Terminal 3. The following section (Section 2.2.2) provides more information regarding the deficiencies at Terminal 3 and the impact to efficiency.

2.2.2 The Need to Modernize and Optimize the Terminal 3 and 4 Envelope Including Managing and Alleviating Airside, Terminal, and Landside Congestion and Enhancing Safety

The Terminal 3 and 4 envelope is congested during peak periods on the aircraft apron, within Terminal 3, and along the access roads that serve the terminals. Congestion causes delays, lowers the LOS, and inhibits safe operation of the facilities. Moreover, as passenger levels increase over time, periods of congestion will increase in duration and severity, further exacerbating delays, lowering the LOS, and putting greater stress on the safe operation of the facilities.

All airlines and airport operators have a strong interest in providing the highest LOS possible because LOS directly affects an airline's ability to compete effectively with other airlines. The existing inadequate infrastructure at Terminal 3 places Delta Air Lines and its codeshare, alliance, and affiliated partners at a significant competitive disadvantage compared to other airlines operating at JFK because several other terminal complexes have been redeveloped the past 10-12 years. American Airlines and its partner airlines have benefited from the \$1.3 billion dollar redevelopment of the Terminals 8 and 9 envelope, partially completed in 2007¹; British Airways and its partner airlines have benefited from the redevelopment of Terminal 7; Jet Blue, has benefited from the redevelopment of the Terminals 5 and 6 envelope; Terminal 4 (International Arrivals Terminal) underwent a \$1.4 billion redevelopment in 2002; and Terminal 1 was redeveloped in May, 1998. While Delta Air Lines has made incremental improvements to Terminal 3 in recent years, as it is presently configured, Terminal 3 cannot be modernized to accommodate the demands of modern air travel at an acceptable LOS.

The following sections describe the aircraft, passenger terminal, and roadway deficiencies within the Terminal 3 and 4 envelope in more detail.

Aircraft Apron Deficiencies

Aircraft congestion occurs within and around the Terminal 3 and 4 envelope because the apron is physically constrained and does not prioritize all available square footage for highest and best uses (hardstand parking positions vs. taxilanes vs. ground support equipment storage, etc.).

The current aircraft taxilanes between the terminal concourses in this area do not provide for the efficient flow of aircraft. The taxilane between Terminals 2 and 3 consists of a single lane. When it is used by outbound aircraft, inbound aircraft are precluded from using it, and the opposite is true when the taxilane is used for an

¹ Terminal 8 opened in August 2005 and Phase 2 was completed in April 2007. It is the newest terminal and the largest facility at the Airport hosting a single airline, American Airlines. This terminal was designed for 57 total gates in two structures. To date, 36 gates and approximately 75 percent of the passenger processing building have been constructed.

inbound aircraft. The taxilane between Concourse A and Concourse B of Terminal 4 also consists of a single lane. The taxilane has two 90 degree turns, which makes it difficult for pilots to confirm that there is no oncoming traffic in the taxilane and forces them to rely exclusively on ramp controllers to coordinate aircraft movements. Each of these single taxilanes periodically gets blocked by aircraft pushing back from their gates to start engines position prior to departure. When push-back operations occur, aircraft are prevented from moving through the taxilanes in either direction.

The Terminal 3 airside layout is controlled by the building infrastructure that was designed decades ago for the aircraft operating at that time. A gate design scheme intended to accommodate first generation, narrow-body jet aircraft operating more than forty years ago is seriously deficient in serving modern, wide-body aircraft. That is why most major international airports have redesigned long-standing terminal "gate geometry" to accommodate 21st century aircraft. In the United States, such modernization has occurred or is occurring at the international terminals in Atlanta, Boston, Chicago, Los Angeles, San Francisco, and elsewhere. Similarly, at JFK, the current building and available ramp space does not provide the flexibility to park more and different aircraft in the same area when activity dictates. As a result, widebody aircraft can only use certain limited apron areas, which reduces the operational efficiency of the Terminal 3 apron, and the Port Authority needs to modernize Delta Air Lines' facilities just as other airports have improved theirs.

The Terminal 3 building has an irregular shape, an elliptical section connected to a trapezoid that can only accommodate a very narrow range of aircraft types. The current building has notches that allow the nose of the aircraft to be closer to the center of the building. While the notches provide an area for the aircraft to park, the building notches occupy an area that would normally be available for vehicles that service the aircraft, including catering trucks, baggage carts, fuel trucks, etc. This configuration results in very congested ramp areas, difficult and labor-intensive vehicle movements, and very little staging area for ramp service and ramp operation vehicles.

Similarly, the apron area at the Terminal 4 is inefficiently utilized; it is often occupied by hardstanding aircraft of all sizes, ground support equipment (GSE), mobile lounges, and other vehicles. This inefficiency results in increased congestion and decreased safety due to limited space for aircraft to maneuver. This area of apron requires reconfiguration to provide more aircraft parking (hardstands) positions and to reconfigure taxilanes to provide better aircraft circulation patterns within the Terminal 3 and 4 envelope.

Passenger Terminal Deficiencies

In addition to being designed for aircraft no longer in service, Terminal 3 was designed and built in 1960, prior to passenger and baggage security screening and other current airline technology and processes. Many functions are fragmented and dispersed throughout the terminal due to the outdated design and configuration. Unacceptable levels of passenger congestion occur in Terminal 3, especially during afternoon departures of international flights. The obsolete layout creates

congestion and crowding in passenger holdrooms, at ticket counters, at security check-points, in restrooms, in clubroom facilities, and even in common areas. This congestion contributes to delay and reduces the LOS experienced by passengers in Terminal 3 and thus affects Delta Air Lines and its codeshare, alliance, and affiliated partners' competitiveness at JFK. As demand increases and passenger levels rise, these conditions will be further exacerbated.

Security

One of the primary deficiencies within the passenger processing facility relates to the security checkpoints. As airline travel has changed dramatically since Terminal 3 was designed, FAA security procedures and federal inspection (U.S. Customs, Immigration and Naturalization Services, and Agriculture) requirements have also changed significantly. These revised requirements are currently met within Terminal 3; however, the facilities are neither cost effective nor efficient, especially during peak periods. Terminal 3 has seven Transportation Security Administration (TSA) passenger security checkpoints due to the configuration of the terminal. The US Customs secondary processing area is also divided into two separate areas again with redundancy. As a result, passengers experience substantial delays and congestion. Consolidation of the services in new facilities would require less area and resources and provide a much higher level of service. However, the current configuration of Terminal 3 does not allow for consolidation of these services.

For example, passenger security checkpoints are located at the front doors of the terminal where there is insufficient space to accommodate this function or its related passenger queues. During peak periods, there are long passenger queues at the passenger security checkpoints that spill onto the curb front causing congestion and confusion. Once through the security checkpoint, passengers proceed through a narrow corridor where they must collect their belongings among the other passengers transiting through the same corridor. Further, each of the multiple front doors requires separate security checkpoints. Typical modern terminal facilities have centralized checkpoints that are more efficient for passengers and cost effective for the airline industry.

Passenger Holdrooms

In Terminal 3, passenger holdrooms that were originally intended to accommodate only the originating passengers who arrived early for a departing flight are now crowded by connecting passengers who often have a substantial amount of time between flights. It is not uncommon for connecting passengers to have two hours or more between flights, during which time they need ample seating and other amenities, which are totally inadequate in the current terminal. Furthermore, the gate areas and holdrooms from which these passengers depart, are often utilized simultaneously by passengers who are departing on other flights at the same time. During peak periods, the Terminal 3 holdrooms are congested with connecting and originating passengers, which consequently leads to congestion, confusion, passenger processing delays, and an overall lower LOS.

Baggage Handling Systems

Similarly, the evolution of the airline industry has resulted in changes to baggage handling facility system requirements. As passengers arrive into Terminal 3, their baggage must be sorted between those that JFK is their final destination versus passengers connecting at JFK. The Terminal 3 baggage facilities were designed to accommodate a larger percentage of local arriving and departing passengers and fewer connecting passengers than today's levels. As a result, the baggage handling and sorting facilities are not configured to meet modern demands in an efficient fashion, resulting in the potential for delays in baggage retrieval and baggage misconnections.

Passenger Connectivity

Another significant change in the airline industry is the increasing demand of airline consumers for seamless air transportation service. Modern methods of terminal operation have changed and are generally characterized by higher levels of frequencies per gate. Airlines are responding to this demand by developing new and innovative services including the expansion of airline codeshare partnerships and alliances designed to provide the traveling public and cargo shippers with seamless connectivity throughout the U.S. and the world. Interconnectivity between codeshare and alliance partners and Delta Air Lines, and between Delta Air Lines' own flights, requires that facilities function in a manner that is conducive to swift, convenient, and efficient flight connections. Connecting terminal complexes must function with optimal efficiency, distinguishing between origin/destination and connecting passengers. Local arriving and departing passengers require easy access from curbside to gate and connecting passengers require shorter and more convenient connections.

Currently, Delta Air Lines' passengers do not have the ability to transfer to or from Terminal 4 without exiting the terminal and returning through a security checkpoint. This requires passengers to board a bus or walk between terminals for connecting flights. This is a concern today, but as Delta Air Lines moves more connecting domestic traffic from Terminal 2 to its proposed international gates on Terminal 4, this will exacerbate the problem.

Building Maintenance

Terminal 3 is overly expensive to maintain because of its poor condition. Although Delta Air Lines has updated its electrical, plumbing, heating, ventilating, and air conditioning (HVAC), and fire protection systems have been updated over time, the existing maze of wires, pipes and other infrastructure is the product of 50 years of patchwork repairs and upgrades instead of building-wide system overhauls. This cobbled-together network of utility services, while in conformity with current building codes, results in frequent failures that continually require repairs. The condition of utility infrastructure within Terminal 3, as well as some of the undersized physical spaces, makes cost effective modernization impossible without a complete redevelopment of Delta Air Lines' terminal facilities.

Automobile Deficiencies

Congestion occurs along access roads and curbsfronts along Terminal 3 due to poor roadway geometry, inadequate curbsfront lengths and lack of efficient vehicle separation. Congestion at the terminal curbsfronts reduces the efficiency of automobile circulation in the central terminal core and increases idling emissions from vehicles. Terminal 3 is served by a landside access road that does not provide adequate curbsfront capacity, vertical clearance, or vehicle separation to serve passengers safely, efficiently, and conveniently. Buses and other tall vehicles sometimes collide with ceilings within the tunnels that lead to the passenger curbsfront. This access road is a frequent chokepoint of congestion, especially during peak periods, and poses significant safety and efficiency problems.

2.2.3 Summary of Needs

The existing demand at Terminal 3 exceeds the capacity and Delta Air Lines' projected demand for JFK indicates that the problems will grow worse in the future. The existing Terminal 3 and 4 envelope does not optimize use of airside, terminal, and roadway areas to serve contemporary airline and air travel needs. This is due to (1) the functionally obsolete layout and access to Terminal 3, which is more than 50 years old, and (2) the aircraft apron within the Terminal 3 and 4 envelope not being fully optimized to meet the requirements of the tenants. These deficiencies cannot be addressed through incremental rehabilitation of Terminal 3 and require a broader redevelopment program.

Redevelopment of the Terminal 3 and 4 envelope would enable passengers to experience an optimal curbsfront-to-aircraft seat experience. Delta Air Lines and its codeshare alliance, and affiliated partners would operate in modern terminal facilities and on an optimized aircraft apron layout, which in turn would improve Delta Air Lines' ability to function efficiently. Efficient aircraft operations in the apron environment would translate into less terminal congestion, less apron congestion, fewer delays, greater flexibility and improved safety. Increased efficiency contributes to a higher LOS for the traveling public, thus improving the ability of airlines operating in the Terminal 3 and 4 envelope to compete with other airlines at JFK.

2.3 Description of the Proposed Action

Delta Air Lines has an acute need to improve the level of service and efficiency of operation in the outdated and inefficient existing Terminal 3 facility. In order to address these needs, Delta Air Lines has developed a modernization and redevelopment program for Terminal 3 and 4 that would provide the necessary infrastructure to continue to efficiently offer passengers a comfortable traveling experience that is consistent with the experience passengers have at the other terminals at JFK. The Proposed Action includes the following elements and is shown on Exhibit 1-3 in Chapter 1, *Affected Environment*:

- Relocate 16 Delta Air Lines aircraft gates from Terminal 3 to Terminal 4²
 - Expand Concourse B of Terminal 4 by nine gates
 - Maintain the three existing Delta Air Lines gates at Terminal 4
 - Redesignate four existing gates at Terminal 4 as Delta Air Lines gates
 - Develop additional passenger processing facilities at Terminal 4 to accommodate the additional passengers
 - Install water quality treatment devices
- Extend a secure pedestrian walkway/bridge from Terminal 2 to Terminal 4
- Demolish existing Terminal 3 and its 16 gates now currently occupied by Delta Air Lines; including ancillary facilities
- Redevelop the area where Terminal 3 was located to accommodate aircraft parking positions
- Reconfigure taxilanes and connections to existing taxiways between Terminals 2, 3, and 4
- Relocate ground service equipment fueling facility at Terminal 3 and 4 to a more efficient location south of existing Concourse B at Terminal 4
- As a result of redesignating four existing gates at Terminal 4 to Delta Air Lines' gates, Terminal 8 would be expanded by three additional gates and the passenger processing building at Terminal 8 would be expanded to accommodate the carriers displaced by the redevelopment and reconfiguration of Terminal 4. The displaced carriers would utilize up to four existing Terminal 8 gates and the three new gates. This expansion is consistent with the original plans for Terminal 8.³

2.4 Implementation Phasing

Construction of the Proposed Action is planned to occur between July 2010 and May 2015. The construction would occur in seven phases, which would allow portions of the Terminal 3 and 4 envelope and Terminal 8 to be unaffected and function normally while other areas are under construction. The proposed preliminary construction schedule is described below:

- July 2010: Begin taxilane relocations and modifications in the Terminal 3 and 4 envelope.
- August 2010: Begin airside civil activities to include underground utility installation and ramp rehabilitation in the Terminal 3 and 4 envelope.
- October 2010: Begin Concourse B extension to Terminal 4.
- March 2011: Begin single story expansion and other internal modifications of the passenger processing facilities at Terminal 4.

² The 16 Delta Air Lines gates at Terminal 4 would be a combination of the nine newly constructed gates, the three existing Delta Air Lines gates at Terminal 4, and Delta Air Lines utilizing four existing gates currently occupied by other International Arrivals Terminal (IAT) airlines.

³ Terminal 8 opened in August 2005 and Phase 2 was completed in April 2007. It is the newest terminal and the largest facility at the Airport hosting a single airline, American Airlines. This terminal was designed for 57 total gates in two structures. To date, 36 gates and approximately 75 percent of the passenger processing building have been constructed.

- August 2010: Begin the extension of the secure pedestrian bridge/walkway connecting Terminal 3 to Terminal 4 as an interim phase.
- July 2012: Begin the erection of the secure pedestrian bridge/walkway connecting Terminal 2 to Terminal 4.
- May 2013: Complete entire Terminal 4 redevelopment.
- June 2013: Abate and demolish Terminal 3; begin apron rework and hardstand construction
- Fall 2013: Begin construction of concourse extension to Terminal 8
- May 2015: Complete Proposed Action

2.5 Required Land Use/Environmental Permits

Federal

- FAA approval of the ALP
- Federal environmental approval pursuant to NEPA

State

- Consistency with Coastal Zone Management
- Dewatering Permit

Port Authority of New York and New Jersey

- Tenant Alteration Application

Chapter 3

3.0 Alternatives

The Council on Environmental Quality regulations implementing the National Environmental Policy Act (NEPA) require that the Federal decision-makers 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 FAA Order 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.

This EA was prepared to identify and evaluate all potential adverse impacts on the natural and human environments that are expected to result from implementation of the Proposed Action and the No-Build/No-Action Alternative. Numerous other alternatives were considered during the planning phases of the project, but were eliminated from further detailed environmental review as stated in Section 3.3.

3.1 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:

Expand Terminal 4

Concourse B of Terminal 4 would be expanded by nine additional gates and the 16 Delta Air Lines aircraft gates on Terminal 3 would be relocated to Terminal 4. The 16 gates would be a combination of the nine newly constructed gates, the three Delta Air Lines gates at Terminal 4, and Delta Air Lines utilizing four existing

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

Terminal 4 gates currently occupied by other International Arrivals Terminal (IAT) airlines. The IAT airlines currently utilizing the four gates that Delta Air Lines would occupy with the Proposed Action would be relocated to Terminal 8 (see below for more on the Terminal 8 redevelopment).

The Proposed Action would increase the square footage of the Terminal 4 passenger processing facility from approximately 1.5 million square feet to just over 2.0 million square feet. This increase in space is necessary to replace the outdated gates from Terminal 3 and provide the necessary space for modern ticketing and baggage systems. The expanded Terminal 4 passenger processing facility would be similar in design to the existing facilities with multiple levels for accommodating the varied passenger functions. The existing Terminal 4 curbside would be reorganized to accommodate increased passenger pick-up and drop-off activities.

The Proposed Action also includes the extension of a pedestrian walkway/bridge from Terminal 2 to Terminal 4. This 1,465-foot long walkway would have moving sidewalks and would allow passengers using Delta facilities in either Terminal 2 or 4 to travel between the terminals for connecting flights or other purposes. This pedestrian connection between Terminals 2 and 4 would allow passengers to move between the two terminals without exiting to the outdoors and passing through another security checkpoint.

Additionally, 11 hardstand parking positions would be reconfigured in the Terminal 4 envelope and adjacent apron, three of which would be hydrant fueled through a connection to the existing hydrant fuel distribution system. Ground service equipment (GSE) and other ancillary equipment and vehicles would be reoriented to service the gated and hardstand parked aircraft more efficiently. Similarly, the GSE fueling facility located south of Terminal 4 would be relocated to a more efficient position within the apron area. As part of the relocation, a total of nine underground storage tanks would be removed and replaced with new tanks within the Terminal 4 site. The nine underground storage tanks consist of six 4,000 gallon diesel tanks, one 2,000 diesel tank, and two 2,000 gallon gasoline tanks. The Port Authority's Best Management Practices requires that facilities with petroleum and/or chemical bulk storage areas to comply with all applicable regulations including those involving releases, registration, handling, and storage. The Port Authority currently has a Spill Prevention, Control and Countermeasure (SPCC) Plan for JFK. The plan contains appropriate spill prevention and clean up measures. Tenants that store chemicals also must comply with all applicable regulations and prepare and maintain a SPCC Plan. In addition, a fire suppression system would be installed at the new GSE fueling facility.

Demolish Terminal 3

The Proposed Action would include demolition of the entire Terminal 3 building, including 16 gates and the passenger arriving and departing roadways/curbsides that are wrapped around the Terminal 3 passenger processing facility, as well as the GSE fueling facility located southeast of the terminal. Four underground gasoline and diesel storage tanks, with a combined capacity of 12,000 gallons, would be removed.

The demolition of Terminal 3 would allow the area where the building, roadways, and curbsfronts were located to be reconfigured. The space would provide a minimum of 15 aircraft hardstand parking positions, reconfigured taxiways to accommodate efficient jet movements in and out of the terminal/gate environment, and location for a secure pedestrian walkway/bridge from Terminal 2 to Terminal 4. In addition, GSE and other ancillary equipment and vehicles would be more efficiently accommodated to service the hardstand parked aircraft.

Expand Terminal 8

As a result of the Proposed Action, Terminal 8 would be expanded by three additional gates to accommodate the airlines displaced by the redevelopment and reconfiguration of Terminal 4. Terminal 8 was originally designed for 57 gates and a larger passenger processing facility. This would increase the total gates at Terminal 8 from 36 to 39. The airlines displaced from Terminal 4 would utilize a combination of up to four existing gates at Terminal 8 and the three new gates. The specific airlines to be relocated would be determined based on the codeshare and alliance agreements at the time Terminal 8 is expanded.

In addition, the passenger processing facilities at Terminal 8 would be expanded to accommodate additional screening and check-in facilities for the new gates. Overall, the Proposed Action would increase the square footage of the Terminal 8 passenger processing facility by approximately 200,000 square feet. The existing terminal, which is approximately 1.5 million square feet, would be increased to approximately 1.7 million square feet.

While the full number of gates and passenger processing facilities were not constructed at Terminal 8 originally, the full curbsfront and roadways were constructed. Both the proposed expansion of three gates and the passenger processing facilities at Terminal 8 are consistent with the original design of the terminal. Furthermore, because the full curbsfront and roadways were constructed, the additional automobile demand can be accommodated without the need for new construction.

3.2 No-Build/No-Action Alternative

The No-Build/No-Action Alternative would result in the Terminal 3 and 4 envelope and Terminal 8 remaining unchanged from existing conditions, which is shown on Exhibit 1-2 in Chapter 1. Selection of the No-Action/No-Build Alternative would conflict with the Port Authority's obligation and commitment to the public, its tenants, and to bondholders to provide and maintain facilities at JFK 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 consequences of selecting the No-Build/No-Action Alternative would result in exacerbating existing operational constraints as demand increases.

The No-Build/No-Action Alternative would not fulfill the Purpose and Need for the project. This alternative would not correct the current inefficient design and use of the Terminal 3 and 4 facilities and apron areas. Presently, these terminal areas do not provide efficient roadways, passenger processing facilities, and aircraft apron

areas. As passenger demand and aircraft operations increase over time, the inefficiencies of the existing terminal areas would further degrade the LOS experienced by passengers, result in increased automobile congestion in front of the terminals, and further complicate aircraft movements and gate scheduling. Furthermore, the No-Build/No-Action Alternative would not correct the deficiencies that currently inhibit airline competition, preventing Delta from providing a comparable LOS as that provided by competing airlines at other JFK terminals.

However, as discussed above, the No-Build/No-Action alternative is required 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.

3.3 Alternatives Considered but Eliminated from Further Consideration

The following options were thoroughly considered as alternatives to the Proposed Action at JFK, but were eliminated from more detailed environmental analysis for the reasons listed below.

3.3.1 Replacement/Modernization of Terminal 3 and No Change at Terminal 4

This alternative would consist of Terminal 3 being demolished and replaced with a new facility which operates in a similar way as the existing terminal. Terminal 4 would remain unchanged and Terminal 4 passenger handling facilities and concourses would not be altered under this alternative.

Implementation of this alternative would not optimize the efficient utilization of the Terminal 3 and 4 facilities and envelope. Although, this alternative would increase the LOS at Terminal 3 by providing newer, more modern facilities but without the expansion of Terminal 4 facilities, the primary passenger handling facilities would remain inadequate for providing competitive services with a high LOS to current and future passengers.

Implementation of this alternative would not meet the need to efficiently utilize the Terminal 3 and 4 envelope. The existing Terminal 4 envelope would not be optimized to allow for the efficient parking and movement of aircraft around the terminal. Aircraft congestion occurs within and around the Terminal 3 and 4 envelope because the apron is physically constrained and does not optimize available square footage for highest and best uses (hardstand parking positions vs. taxilanes vs. GSE storage, etc.). This alternative would do nothing to address this need.

Redevelopment of the airside within the Terminal 3 and 4 envelope would simplify the apron layout and enhance operational safety by allowing aircraft and GSE to maneuver more efficiently, thereby reducing the risk of incursions. A simplified apron layout would be more easily comprehended from the airside, improving on complex aircraft routings. However, the benefits would be less than with the Proposed Action due to this alternative not providing the flexibility of having a large number of hardstand parking positions. Finally, the demolition of Terminal 3 would require Delta Air Lines' operations currently operating from Terminal 3 to relocate

to a temporary facility during the construction of the new Terminal 3. The only vacant terminal at JFK is Terminal 6, which given its current condition would require major renovations to make it feasible to be used for the temporary replacement of Terminal 3. This terminal is scheduled for demolition in the fourth quarter of 2010 due to its physical condition and in order to continue the redevelopment of Terminal 5. There are also lease agreements in place with the other airlines at Terminal 5 that would make the use of Terminal 6 as a temporary facility for Delta Air Lines impossible.

For the reasons stated above, the replacement/modernization of existing Terminal 3 and no change at Terminal 4 was eliminated from further review.

3.3.2 Redevelop Terminal 4 Only and No Change at Terminal 3

This alternative would consist of expanding Concourse B of Terminal 4, and the passenger processing facilities in the same manner as described in the Proposed Action. The Terminal 3 passenger facilities and aircraft apron would remain unchanged.

Expanding Terminal 4 with no change to Terminal 3 would provide few of the advantages of the Proposed Action because Terminal 3 would retain its obsolete configuration, redundant and outdated facilities, and lack of an integrated connection to Terminal 4. The need to accommodate increased aviation and passenger demand at an acceptable LOS would not be achieved under this alternative. Therefore, the Purpose and Need of the project would not be achieved.

Under this alternative, the awkward building design and inflexible gates at Terminal 3 would remain, which would result in Terminal 3 only being capable of accommodating a very narrow range of aircraft types. Domestic passengers traveling on short-haul flights served by Delta's expanding regional jet fleet would continue to experience a decreasing LOS because existing Terminal 3 facilities and apron layout are not capable of efficiently accommodating the increased frequency of aircraft movements associated with these aircraft. In addition, wide-body aircraft currently used today can only use certain apron parking areas, which reduces the operational efficiency of the Terminal 3 apron. Inefficient aircraft parking creates confusion and reduces room for GSE to maneuver, thereby causing delays and increasing the risk of incursions.

The existing Terminal 3 curbside, check-in, baggage, and security areas are heavily congested at peak travel periods, causing accidents, delay, and a low LOS. As passenger demand increases, periods of congestion would increase in duration and severity. Expansion of Terminal 4 alone would not address these problems. Landside access roads and curbsides at Terminal 3 would retain the existing poor roadway geometry, inadequate curbside lengths and vertical clearance, and lack of efficient vehicle separation.

Expansion of Terminal 4 without redevelopment of Terminal 3 would also exacerbate the existing competitive disadvantage of the tenant of Terminal 3 (currently Delta) compared with other airlines operating at JFK because several other terminal complexes have been modernized. Interconnectivity between Delta and its codeshare alliance, and affiliated partners, and between Delta's own flights,

requires airport facilities to provide fast and convenient flight connections for passengers, their baggage, and cargo. Redevelopment of Terminal 4 without redevelopment of Terminal 3 would not produce the efficient interconnectivity that is essential to the user of those facilities.

For the reasons stated above, the redevelopment of Terminal 4 and no change at Terminal 3 was eliminated from further review.

3.3.3 Other Configurations Within the Terminal Envelope

Multiple terminal design configurations for the Terminal 3 and 4 envelope were considered during the project development phase. No design other than the Proposed Action would fully achieve the Purpose and Need for the project. Moreover, these alternative designs would neither decrease the potential for environmental impacts nor offer greater improvement to existing environmental conditions. The terminal configuration included in the Proposed Action was selected from among the alternatives considered because it fully meets the Purpose and Need of the project, causes no significant adverse environmental impacts, and it is technologically and economically feasible to implement.

3.3.4 Terminal Development at an Alternate Site Within JFK

The primary airline tenant at Terminals 2 and 3 is Delta and the operator at Terminal 4 is JFKIAT, which leases passenger facilities to numerous airlines. In this alternative, the current and future operations of Delta and JFKIAT would be located in different terminals at JFK, either separately or in combination with one another, or in new facilities built in another part of the Airport.

This alternative is not feasible because no vacant or under-utilized facilities of suitable size for Delta's and JFKIAT's needs exist at the Airport. As discussed in Chapter 2, *Purpose and Need*, each of the terminals in the Central Terminal Area (CTA) has already undergone improvements at costs involving billions of dollars. The incumbent airlines located in those facilities have committed to leases that are tailored to meet their long-term financial and operational needs. Sharing those facilities with competitor airlines is not practical or possible because of the terminal area and gates required to meet their respective needs.

Seeking another location on the Airport in which to conduct the Proposed Action is also not commercially practical or prudent. A completely new terminal building would be required, along with on-site access roads, parking, and additional infrastructure. This alternative fails on the basis of cost, limited sites of adequate size, as well as the lack of proximity to, and association with, the existing passenger processing areas of the Airport.

For the reasons stated above, terminal development at an alternate site within JFK was eliminated from further review.

3.4 Alternatives Selected for Further Evaluation in this EA

The following alternatives have been selected for detailed environmental review in this EA.

3.4.1 Proposed Action Alternative

The Proposed Action (shown in Exhibit 1-3 in Chapter 1) involves the redevelopment of the Terminal 3 and 4 envelope, as well as the expansion of Terminal 8. The elements of the Proposed Action include:

- Relocate 16 Delta Air Lines aircraft gates from Terminal 3 to Terminal 4²
 - Expand Concourse B of Terminal 4 by nine gates
 - Maintain the three existing Delta Air Lines gates at Terminal 4
 - Redesignate four existing gates at Terminal 4 as Delta Air Lines gates
 - Develop additional passenger processing facilities at Terminal 4 to accommodate the additional passengers
 - Install water quality treatment devices
- Extend a secure pedestrian walkway/bridge from Terminal 2 to Terminal 4
- Demolish existing Terminal 3 and its 16 gates now currently occupied by Delta Air Lines
- Redevelop the area where Terminal 3 was located to accommodate aircraft parking positions
- Reconfigure taxilanes and connections to existing taxiways between Terminals 2, 3, and 4
- Relocate ground service equipment fuel farms at Terminal 3 and 4 to a more efficient location south of existing Concourse B at Terminal 4
- As a result of redesignating four existing gates at Terminal 4 to Delta Air Lines' gates, Terminal 8 would be expanded by three additional gates and the passenger processing building at Terminal 8 would be expanded to accommodate the carriers displaced by the redevelopment and reconfiguration of Terminal 4. The displaced carriers would utilize up to four existing Terminal 8 gates and the three new gates. This expansion is consistent with the original plans for Terminal 8.³

3.4.2 No-Build/No-Action Alternative

Under the No-Build/No-Action Alternative Terminals 3, 4, and 8 would remain unchanged but would be subjected to increased forecast demand. The current Terminals 3 and 4 facilities are capable of accommodating the projected (2015) increase in aircraft operations at significantly declining LOS. Terminals 3 and 4 would remain congested and would become even more congested as demand increases as projected. Consequently, the future needs, as identified in Chapter 2, *Purpose and Need*, would not be satisfied.

² The 16 Delta Air Lines gates at Terminal 4 would be a combination of the nine newly constructed gates, the three existing Delta Air Lines gates at Terminal 4, and Delta Air Lines utilizing four existing gates currently occupied by other International Arrivals Terminal (IAT) airlines.

³ Terminal 8 opened in August 2005 and Phase 2 was completed in April 2007. It is the newest terminal and the largest facility at the Airport hosting a single airline, American Airlines. This terminal was designed for 57 total gates in two structures. To date, 36 gates and approximately 75 percent of the passenger processing building have been constructed.

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Chapter 4

4.0 Affected Environment

Federal Aviation Administration Order 5050.4B states that the affected environment 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), as well as the setting for Terminals 3, 4, and 8. This is followed by discussions of the resources that may potentially be impacted, which include socioeconomic (surface transportation), air quality, water quality, historic resources, coastal resources, and hazardous materials. 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 area or no change in the number of operations, flight paths, or runway use. In addition, the Proposed Action would occur entirely on Airport property and have no impact to the surrounding communities. 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 four international airports operated by the Port Authority of New York and New Jersey (Port Authority), which serve the metropolitan New York and New Jersey areas. Both JFK and La Guardia International Airport are located in the Borough of Queens and Newark International Airport is located in New Jersey. Stewart International Airport is located in Newburgh/New Windsor, New York, 60 miles north of New York City. There are eight airline passenger terminals at JFK. Each terminal serves one or more airlines, except for Terminal 6 which is vacant. Terminals 1 through 8 are all located around the perimeter of the central terminal area of the Airport. Exhibit 1-1 in Chapter 1 shows the location of JFK in its surroundings and Exhibit 1-2 shows the existing terminal layout at JFK.

Land Use

JFK is predominantly surrounded by residential areas, national, and local parks, and small areas of commercial and light manufacturing land uses. The residential land uses range from low density single-family dwellings to medium density townhouses and small buildings. There are no large apartment buildings, greater than 14 stories, in the vicinity of JFK. 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 commercial and light manufacturing land uses range from shopping centers and automotive sales to bridge construction component manufacturing and auto repair. These uses are generally located adjacent to low density residential areas.

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.

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 now a component 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

Air Quality

The Airport is located 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 redesignated to attainment for CO. The area now operates under a maintenance plan which was approved in May 2002.

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).

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 are provided below.

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 2005 U.S. Census Bureau estimates, there were 2,486,235 people residing in Brooklyn and 2,241,600 in Queens alone, part of the more than eight million population of New York City and the nearly 22 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 1°C to 26°C, and 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.

Terminals 3 and 4 are located near the Jamaica Bay shoreline, but are separated from the water's edge by two taxiways and Runway 13R-31L. Terminal 8 is separated from the water's edge by surface roadways, terminal buildings, taxiways, and Runway 13R-31L.

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. Runoff from parking areas, rooftops, runways, tarmacs and landscaped areas is collected and transported in a closed system and discharged to the Bay. **Exhibit 4-1** illustrates the layout of the JFK stormwater management system.

In New York State, storm water discharges are regulated by NYSDEC under the State Pollution Discharge Elimination System (SPDES) program. The Port Authority has been issued a discharge permit for the entire Airport 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. All discharges occurring via the stormwater conveyance system are in accordance with the requirements set forth in the Port Authority permit.

Drainage Area K covers approximately 10 percent (484 acres) of JFK. This area includes Terminals 2, 3, and 4 and discharges through outfall 012 and 013 as shown in Exhibit 4-1. These outfalls are equipped with permanent containment booms that are designed to capture liquid pollutants and floatables for collection by Port Authority staff. Taxiways in Drainage Area K discharge through outfall 014. All outfalls from Drainage Area K discharge into Jamaica Bay. Drainage Area H covers approximately 19 percent (873 acres) of the Airport and includes Terminal 8. Drainage Area H discharges to outfall 010 into Jamaica Bay. This is the largest stormwater discharge area at JFK and it is also equipped with a permanent containment boom.

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, including Terminals 3, 4, and 8, 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 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.

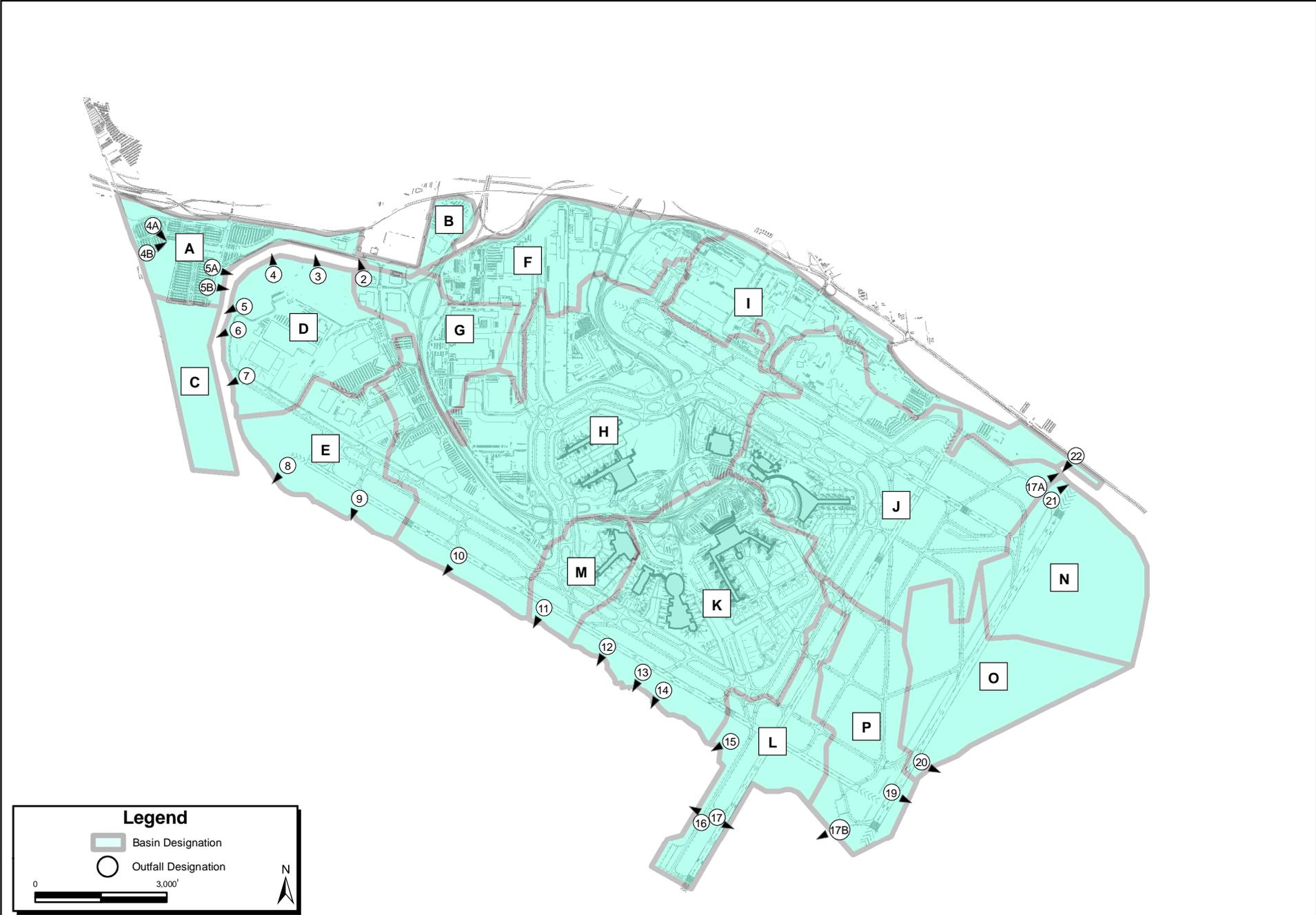
Groundwater

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 at JFK generally flows to the south and away from water supply wells in central Queens that rely on the Long Island aquifer.

Groundwater quality has been affected by past development at JFK 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.

Terminals 3 and 4 are located towards the southern limit of JFK in the direction of Jamaica Bay while Terminal 8 is located on the northern limit of JFK. Sandy fill, organic materials, and glacial outwash underlie the existing terminal buildings. The Terminal 3, 4, and 8 area is primarily impervious; therefore, stormwater discharge from the area does not directly contribute to groundwater recharge.

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Socioeconomic Impacts – Surface Transportation

There are two divided highways that provide access to and from the passenger terminals at JFK, the Van Wyck Expressway (VWE) and the JFK Expressway (JFKE). The VWE is under the jurisdiction of the New York State Department of Transportation (NYSDOT) and the JFKE is under the jurisdiction of the Port Authority. The existing roadways allow vehicles to circulate through the Central Terminal Area (CTA), access each terminal's arrivals, departures and parking areas, and connect to the highway system. Paid parking facilities are provided within the center of the CTA in a number of structures and parking lots. The existing configuration of the JFK road network is shown in Exhibit 1-2 in Chapter 1.

JFK is served by several modes of public transportation, including bus, rail, and subway. One of the primary modes of transit to and from the Airport is the AirTrain JFK Light Rail System, which was opened in 2003. The AirTrain has stops at each of the terminals at JFK and provides connections to the rapid transit network at Jamaica Station and the New York City Transit (NYCT) Howard Beach Station. Travelers destined to JFK can also use numerous other combinations of subway or rail combined with bus access as well as various private taxi services, express shuttles, and buses, which also provide transportation to and from JFK.

Hazardous Materials

Terminal 3 was constructed in the 1950s and 1960s – an era when building materials now known to be hazardous were commonly used. Terminal 4 has undergone extensive renovations, resulting in the replacement of the entire structure with modern non-hazardous substances. In addition, in 2007 the new Terminal 8 opened after an eight year program to replace the old Terminal 8 and Terminal buildings. This also resulted in the replacement of the old structures with modern non-hazardous materials.

Investigations have been conducted to identify the hazardous materials present in and around Terminals 3, 4, and 8.² Hazardous materials present at the terminals include:

- Asbestos in Terminal 3 including: air cell pipe wrap on overhead pipes, pipe joint insulation, spray-on fire proofing, tar pipe wrap, tank insulation, exhaust duct insulation, caulking compound, floor tiles and mastics.
- Lead may be present in painted surfaces of Terminal 3. In addition, old plumbing and solder may also contain lead.
- Transformers that contained PCBs have been removed from service. Some minor quantities of PCBs may remain in the capacitors in fluorescent light ballasts that pre-date 1980.

² *Asbestos Identification Plan for the Operations and Maintenance Program, Terminal 2, Terminal & Cargo Building 67, JFK International Airport, Jamaica, New York.* Prepared for Delta Air Lines Inc., October 2007. Document is available upon request.

- CFCs are contained in refrigeration and air conditioning units. With the modernization of Terminal 4 and Terminal 8, non-CFC refrigerants would have been adopted.
- Mercury and lead are present in fluorescent lamps, high-intensity discharge lamps, neon lamps, mercury vapor lamps, high-pressure sodium lamps, and metal halide lamps. Mercury is also present in elemental form in light switches and thermometers. These materials can be recycled.
- Various subsurface investigations at Terminal 4 have identified soil and groundwater impacted by jet fuel, gasoline, diesel, and other petrochemical products. Following subsurface soil and groundwater remediation performed by the Port Authority, the New York State Dept. of Environmental Conservation determined in October 2008 that the remediation was complete and no further investigation or remediation was required.
- Investigations around Terminal 3 have been limited to those associated with the removal of underground storage tanks. During the tank removals, impacted soil was removed for off-site disposal and groundwater that infiltrated the excavation was pumped out and treated. Dissolved phase hydrocarbons remained in the groundwater after the area was backfilled with clean material.³
- There are four existing underground storage tanks that hold gasoline and diesel fuel for ground service equipment located south of Terminal 3 that would be removed as part of the Proposed Action.
- There are nine existing underground storage tanks that hold gasoline and diesel fuel for ground service equipment located south of Terminal 4 that would be removed as part of the Proposed Action.

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 (NYS DOS). 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 and the NYSDOS concurrence letter is attached as Appendix A.

³ *Asbestos Identification Plan for the Operations and Maintenance Program, Terminal 2, Terminal & Cargo Building 67, JFK International Airport, Jamaica, New York.* Prepared for Delta Air Lines Inc., October 2007. Document is available upon request.

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.

Historic, Architectural, Archaeological, and Cultural Resources

Since many buildings at JFK were designed by recognized architects of their respective periods, the entire Airport has been frequently examined for National Register significance. In 1988, a portion of Terminal 3 was classified as exceptionally significant by the New York State Historic Preservation Office (NYSHPO). However, no supporting material was attached to that determination. In March 2001, the NYSHPO reversed its decision, citing the building's loss of architectural integrity caused by numerous major renovations since the building's opening. The NYSHPO reconfirmed their determination in June 2009. Copies of this correspondence are included in Appendix A. No other buildings included in the Proposed Action are currently considered eligible for the National Register. Only one building (Terminal 5) adjacent to the project area is listed on the National Register (see Exhibit 1-2 in Chapter 1). Terminal 5 was designated a New York City Landmark in 1994, and was placed on the National Register of Historic Places in October 2005.

Prior to 1942, the entire Airport, including the area affected by the Proposed Action, consisted of tidal marshlands next to the Idlewild Golf course. In April 1942, the City of New York arranged for the placement of hydraulic fill over the site in order to construct the Airport. Since the 1950s, the area affected by the Proposed Action has been subjected to numerous building and infrastructure campaigns that disturbed the subsurface. The entire project area is now covered in buildings or concrete. These activities, in combination with the underlying soil conditions, make it highly unlikely that significant archaeological resources have survived, if they ever existed. No study associated with any part of the area has identified any level of archaeological sensitivity.

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Chapter 5

5.0 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 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 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
- Section 303c Resources
- Historic, Architectural, Archaeological, and Cultural Resources
- Fish, Wildlife, and Plants
- Wetlands
- Floodplains
- Coastal Resources
- Wild and Scenic Rivers
- Farmlands
- Natural Resources and Energy Supply
- Light Emissions and Visual Impacts
- Hazardous Materials, Pollution Prevention, and Solid Waste
- Surface Transportation
- Construction Impacts
- Other Considerations
- Cumulative Impacts

5.1 Noise

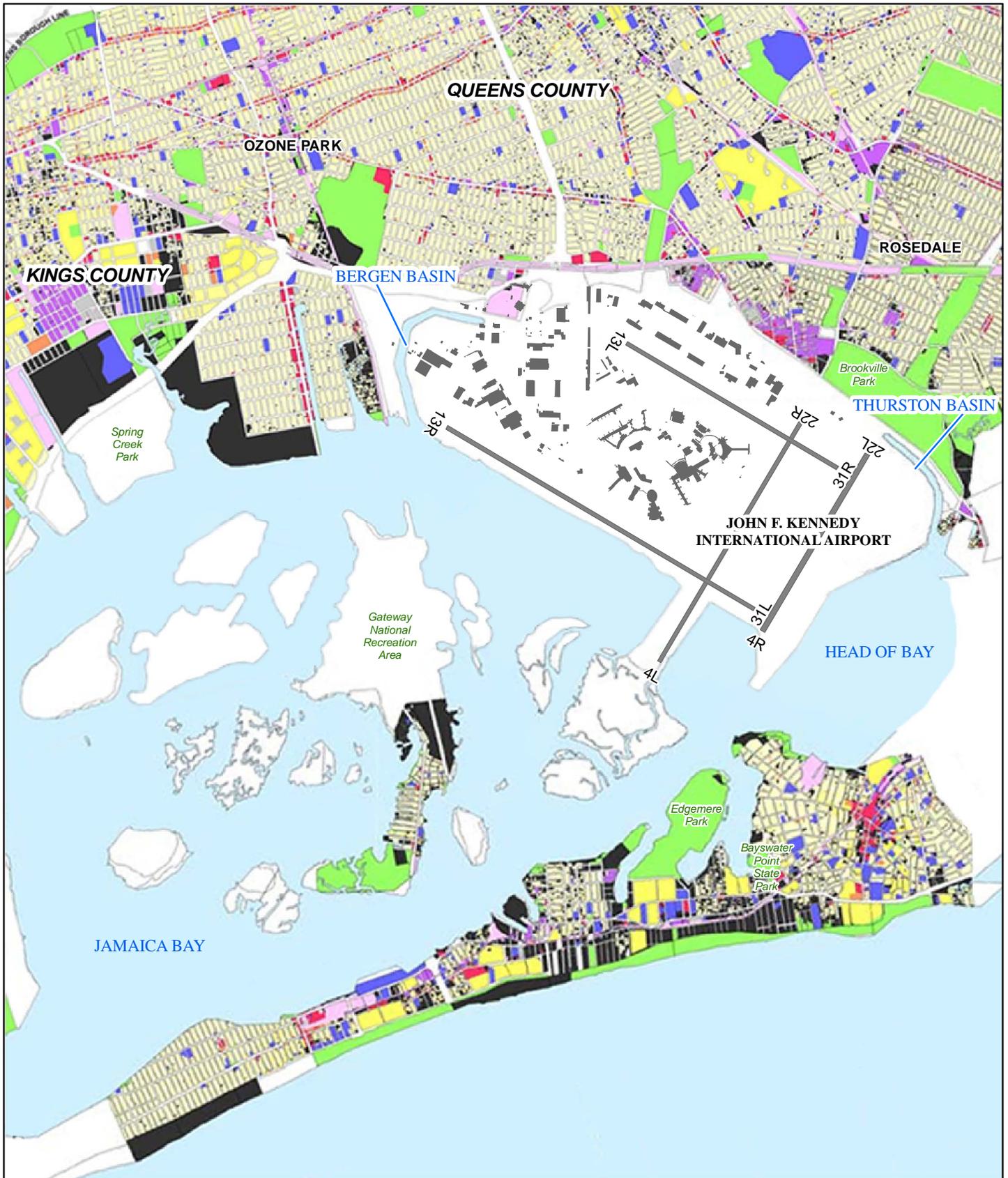
The Proposed Action would not increase the number of passengers or the number of aircraft operations at JFK from the No-Build/No-Action. Demand for air transportation is a function of the economic performance and the attractiveness of the region served by the Airport. Population, business, tourism, educational facilities, medical facilities, and other factors are all drivers of passenger demand. It is important to emphasize that airport infrastructure improvements do not stimulate aviation demand. Instead, airport infrastructure improvements are a response to outdated facilities and to existing or anticipated demand.

The Proposed Action would not cause an increase in passengers or flight operations, nor would it result in physical changes that would affect runway use or flight tracks. Therefore, the Proposed Action would not impact noise generated by aircraft operations at JFK and would not have an impact on noise levels at the Airport or in surrounding communities. Noise impacts resulting from construction activities are addressed later in this document in the Section 5.18, *Construction*. The No-Build/No-Action would not cause an increase in passengers or flight operations, nor would it result in physical changes that would affect runway use or flight tracks. Therefore, neither the Proposed Action nor the No-Build/No-Action would result in an adverse noise impact.

5.2 Compatible Land Use

The area affected by implementation of the Proposed Action is located entirely within the limits of the Airport property and comprises approximately five percent of the Airport's total land area (**Exhibit 5-1**). Land uses in the immediate vicinity of Terminals 3, 4, and 8 consist of passenger terminals, aircraft apron areas, taxiways, and runways.

The area affected by the Proposed Action is centrally located within the much larger JFK complex and redevelopment of the existing Terminal 3 and 4 envelope and Terminal 8 would not affect residential land uses located near the Airport or on any nearby parks or recreational facilities. Implementation of the Proposed Action would not require the relocation of residences or businesses. Since the Proposed Action would be an in-kind replacement, it 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) 150/5200-33 nor would it affect any existing wildlife hazard area because the Proposed Action would not change the urban characteristics of the existing land uses (terminal buildings and paved surfaces). 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.



SOURCE: New York City Department of Planning NOT TO SCALE

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

The area affected by the Proposed Action is located near Queens Community Districts 10 and 12, the community of Far Rockaway, and the Villages of Lawrence, Cedarhurst, Inwood, Hewlett, and Woodmere (commonly referred to as the Five Towns). The Districts and Far Rockaway are part of the area of Queens County surrounding the Airport. JFK is located adjacent to these Community Districts and immediately borders Queens County Districts 10 and 12 to the north. JFK is located north and west of Far Rockaway and five other villages.

The area affected by the Proposed Action is centrally located within the much larger Airport complex and implementation of the Proposed Action would have no impact on residences, communities, or businesses located beyond the project area. The area affected by the Proposed Action does not contain any non-aviation related businesses. Because no residential or commercial areas outside of JFK would be affected, minority and low-income residences would not experience disproportionate adverse impacts resulting from the Proposed Action and, therefore, no adverse environmental justice impacts would result. In addition, the Proposed Action would occur entirely on Airport-owned property and would not have a disproportionate effect upon public health and safety, or children. 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, 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 Proposed Action would cause changes in surface transportation patterns and parking within the Central Terminal Area (CTA), specifically the roadways, curbsfronts, and parking facilities serving Terminals 3, 4, and 8. The following discusses those changes and the potential impacts.

Surface Transportation

Chapter 4, *Affected Environment* describes the existing roadways leading to and within the Airport. The existing terminals are accessed by the internal roadways and each has separate curbsfronts to provide passenger loading and unloading locations. Overall, the signalized intersections, roadway segments, parking facilities, and most terminal frontages have adequate capacity to accommodate the traffic levels today. One exception is the curbsfront associated with Terminal 3, which is often highly congested due to the geometry of the roads/curbs and the high level of demand.

The No-Build/No-Action would maintain the same roadways as the existing condition but it is anticipated that overall traffic levels would increase due to projected growth in activity at the Airport. The signalized intersections, roadway segments, parking facilities, and terminal frontages would continue to have adequate capacity. However, the condition at Terminal 3 would continue to worsen with increased demand and no improvements to the infrastructure.

The Port Authority prepared a traffic impact study to identify the expected level of traffic and resulting Capacity Utilization (CU) and Level of Service (LOS) at the Airport with the Proposed Action.¹ It is important to note that the overall passenger demand and level of traffic accessing the Airport would remain the same with or without the Proposed Action. As a result, the analysis of the Proposed Action focuses on the distribution of traffic near and on the Airport. Intersections were analyzed and rated in terms of their LOS, with LOS A having the best operating conditions and LOS F having the worst. Curbsfronts and frontage roads were analyzed in terms of their CU, which indicates the percentage of the frontage that would be utilized during peak periods. A high CU percentage (>100 percent) indicates demand that exceeds capacity and potentially reduced LOS. Lower percentages indicate lower utilization and available capacity. The following describes the surface transportation impacts of the Proposed Action.

Terminal 4 (Blue Quadrant)

The results of the analysis indicate that under the Proposed Action, all signalized intersections would operate at LOS C or better, all critical roadway segments leading into and out of the Blue Quadrant operate at LOS B or better, and the maximum occupancy rate for the Blue Parking facility, which is currently at 59 percent capacity, is projected to increase to 62 percent at the time of its peak parking demand.

¹ *John F. Kennedy International Airport Delta Redevelopment Traffic Impact Study*, Port Authority of New York and New Jersey in association with Eng-Wong, Taub & Associates, April 22, 2010.

The results of the terminal frontage analysis indicate that all frontages, with the exception of the Arriving Flights Outer frontage, have enough capacity to process the anticipated traffic demand. The Outer frontage, which is currently utilized by private automobiles and for - hire vehicles, is expected to operate close to capacity (CU = 98 percent) if the existing designated areas for the various vehicle types are maintained. Even though this condition can be considered acceptable, this frontage would provide a lower LOS to the Airport patrons, and two options are recommended:

- *Arriving Flights Frontages Switched* - Autos and for - hire vehicles currently using the Outer frontage would be switched with vehicles using the inner curb of the Inner frontage, or
- *Arriving Flights Frontages Switched and No MTA Buses* - Autos and for - hire vehicles currently using the Outer frontage are switched with vehicles using the inner curb of the Inner frontage, and MTA buses are removed from the Blue Quadrant. A possible site for the relocated MTA buses is by the AirTrain station at Terminal 3. The frontage used by the MTA would then be allocated for autos and for - hire vehicles.

The Port Authority has not determined the option that would be implemented at this time; however, both options would provide acceptable LOS for the Arriving Flights Outer frontage and therefore maintain convenient and efficient service for passengers. If either option was implemented only changes to signage would occur.

Terminal 8 (Red Quadrant)

The results of the traffic analysis for the Red Quadrant indicate that under the Proposed Action, all signalized intersections would operate at LOS B or better, and all roadway segments leading into and out of the quadrant would operate at LOS C or better, with the exception of the entrance ramp from the Van Wyck Expressway which would operate at LOS D. The critical weaving section where re-circulating traffic merges with the inbound Van Wyck Expressway vehicles would operate at LOS B, with occasional traffic queues spilling back into the weaving area from the downstream intersections. These queues would clear within the next signal cycle. Additionally, the Red Parking facility is currently underutilized and is expected to accommodate the parking needs for the three additional gates at Terminal 8.

The results of the terminal frontage analysis indicate that all frontages, with the exception of the shuttles - only curb segment in the Arriving Flights Middle frontage, have enough capacity to process the anticipated traffic demand. The shuttles - only curb is expected to operate over capacity (CU = 128 percent) if they remain in their existing designated area. However, in order to make the curbfront function efficiently, a portion of the adjacent upstream curb used by private autos and for - hires in the Middle frontage would be designated for use by the shuttles to alleviate the congestion in the shuttles curb.

Terminal 1/Terminal 2/Terminal 3 (Green Quadrant)

The results of the analysis indicate that under the Proposed Action, all signalized intersections in the Green Quadrant would operate at LOS C or better. In addition, all critical roadway segments leading into and out of the quadrant would operate at LOS C or better. The maximum occupancy rate for the Green Parking facility, which is currently at 70 percent capacity, is projected to decrease to 61 percent at the time of its peak parking demand.

As discussed above, the Proposed Action would maintain acceptable levels of service for passengers. Therefore, neither the Proposed Action nor the No-Build/No-Action would result in significant impacts to surface transportation and the LOS of roadways, frontage roads, or parking areas.

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 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.

5.5 Air Quality

The Clean Air Act (CAA), as amended in 1990, defines a non-attainment area (NAA) as a geographic region that has been designated as not meeting one or more of the National Ambient Air Quality Standards (NAAQS). The Proposed Action would be implemented in Queens County, New York, which 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 redesignated to attainment for CO. The area now operates under a maintenance plan for CO.

According to the USEPA Final Conformity Rule, all Federal agencies are required to ensure that all Federal actions conform to an approved or promulgated state or Federal implementation plan. If the total emissions of non-attainment and maintenance criteria pollutants from a Federal action do not exceed *de minimis* threshold levels for criteria pollutants established in 40 CFR 93.135(b) a conformity determination under the provisions of General Conformity is not required.

General Conformity Review

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 5-1** shows that the estimated net emissions from aircraft, ground support equipment, auxiliary power units, ground access vehicles (GAVs) on roadways and in parking lots, and from stationary sources would be less than the applicable *de minimis* thresholds. An assessment of the annual construction emissions from the Proposed Action found that the estimated net emissions would also be less than the applicable *de minimis* thresholds (See Appendix C, *Air Quality*). 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 plan. Appendix C provides more detail on the methodology, input data, and results for the emissions inventory analysis. As shown in Table 5-1, there would be an improvement in air quality as a result of the Proposed Action due to the reduction in the vehicle traffic at the Terminal 3 curbside and a reduction in the energy requirements due to the demolition of Terminal 3. For more information on the energy requirements see Section 5.15, *Energy Supply and Natural Resources*.

**Table 5-1
GENERAL CONFORMITY EVALUATION
John F. Kennedy International Airport**

EMISSION SOURCES	ANNUAL EMISSIONS (tons per year)					
	CO	VOC	NO _x	SO _x	PM ₁₀	PM _{2.5}
2015 No-Build/No-Action	3,074.48	328.26	2,306.86	183.36	32.93	31.10
2015 Proposed Action	3,056.30	326.88	2,248.84	182.54	32.78	30.95
NET EMISSIONS	-18.18	-1.38	-58.03	-0.83	-0.15	-0.14
NAAQS THRESHOLD	100	50	100	100	100	100

Total emissions may not sum exactly due to rounding.
Source: EDMS version 5.1.2, L&B Analysis, 2010.

Hot Spot Analysis

A dispersion analysis was conducted to determine whether carbon monoxide emissions due to GAVs on roadways and in parking facilities from the Proposed Action 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.

Greenhouse Gas Emissions

On February 18, 2010, the Council on Environmental Quality issued proposed Draft Guidance under NEPA describing how and when Federal agencies should address the subject of greenhouse gas emissions in documents prepared pursuant to NEPA. No final action has been taken on this proposal. Because it is reasonable to conclude that the Proposed Action, as measured from an air quality (Table 5-1) and an energy consumption perspective, (Table 5-2) is environmentally preferable to the No-Build/No-Action, further examination of this subject in this document is neither necessary nor appropriate.

Summary of Impacts

The Proposed Action does not include any improvements that would have the potential to increase either airside or landside capacity at JFK. The Proposed Action would not cause adverse air quality since it results in no increase in flight capacity or surface vehicles. This project is intended to improve efficiency and passenger level of service and would ultimately reduce emissions as compared to the No-Build/No Action as demonstrated by Table 5-1, above.

The Proposed Action does not require a New York State indirect source review. 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. 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 found that the Proposed Action would not create a new violation of any NAAQS; delay the attainment of any NAAQS, or worsen any existing NAAQS violation. As a result, no adverse impact on local or regional air quality is expected with the Proposed Action or the No-Build/No-Action.

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*.

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 within the existing terminal complex, well 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*.

Stormwater Runoff

The Proposed Action would not adversely impact the quantity or quality of stormwater runoff from Terminals 3, 4, and 8. The existing surfaces are completely impervious and consist of rooftops and other hard surfaces (roadways, tarmacs, sidewalks, etc.). The Proposed Action would simply alter the location or type of impervious surfaces, but not result in additional impervious area. The stormwater runoff volume and velocity would not change as a result of the Proposed Action. The Proposed Action would require minor adjustments to the location of catchbasins and the storm sewer lines in the areas of Terminal 3, 4, and 8, but in general the storm sewer system on the Airport would continue to capture stormwater as it does currently.

Under the Proposed Action a variety of BMPs, such as catch basins with inserts, and other water quality management devices, would be adopted to manage the stormwater collected from Terminal 3, 4, and 8. 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.

Discharges from JFK are permitted under the State Pollution Discharge Elimination System (SPDES) Permit issued by the New York State Department of Environmental Conservation to the Port Authority (Permit # NY-000 8109). All discharges occurring via the stormwater conveyance system are in accordance with the requirements set forth in the Port Authority permit. 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 the amount of deicing

fluids/anti-icing chemicals applied at the Airport because there would be no change in the number of operations associated with the project.

The Port Authority and the airline community at JFK are awaiting finalization of a Federal rulemaking process by the EPA on discharge of deicing fluids. It is expected that any new Federal requirements on discharges of deicing fluid would be mandated through a revised SPDES permit. As they do today, the Port Authority will work with the airlines and their deicing service providers to comply with any new requirements. Therefore, the overall impact of the Proposed Action on stormwater quantity and quality would be a positive one due to the installation of new water quality devices, and the fact that there would be no new areas of impervious surface created and no additional aircraft operations.

Sanitary Wastewater

The quality of sanitary wastewater generated by the Proposed Action would be consistent with the quality of current wastewater generated at the Airport. The redeveloped terminals would meet all limits for discharges to New York City sanitary sewers and provide necessary pretreatment (for example, grease traps for discharges from food facilities). As such, the Proposed Action is not expected to significantly affect the quality of sanitary sewage from Terminals 3, 4, and 8, and 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.

Groundwater

The soils around the Airport, including within the Terminal 3 and 4 envelope and Terminal 8 area, 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 central terminal area.

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 State Pollutant Discharge Elimination System 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 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 Section 303c Resources

Section 303 of 49 USC, Subtitle I, provides that the Secretary of Transportation shall not approve any program or project which requires the use of any publicly owned land from a public park, recreation area, or wildlife refuge, of national, state, or local significance or land of 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 or project includes all possible planning to minimize harm resulting from the use (FAA Order 1050.1E Change 1, *Environmental Impacts: Policies and Procedures*, Par. 6.1(a)). Such lands and sites are known as Section 303 resources.

There are no Section 303 resources within the area affected by the Proposed Action. The TWA Terminal (Terminal 5), located immediately east of Terminal 4, is listed on the National Register and was designated a New York City Landmark in 1994. However, the extension of Concourse B of Terminal 4 is located over 2,000 feet from Terminal 5 and the extension of Terminal 8 is located approximately 3,100 feet from Terminal 5. The proposed construction at Terminal 4 and Terminal 8 would occur out of direct sight line from Terminal 5 and would not affect the normal Airport-related activities occurring at Terminal 5. Additionally, the development and future use of Terminal 4 is consistent with the design and use of Terminal 5. The No-Build/No-Action would not result in any changes to the structures on the Airport. Consequently, neither the Proposed Action nor the No-Build/No-Action would include a direct taking or constructive use of Section 303 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.

As discussed in Chapter 4, *Affected Environment* there are no historic or archaeological resources located within the project area and as a result there would be no direct impacts from the Proposed Action. Terminal 5 is located adjacent to the project area. The extension of Concourse B of Terminal 4 is located over 2,000 feet from Terminal 5 and the extension of Terminal 8 is located approximately 3,100 feet from Terminal 5. The proposed construction at Terminal 4 and Terminal 8 would occur out of direct sight line from Terminal 5 and would not affect the normal Airport-related activities occurring at Terminal 5. Additionally, the development and future use of Terminal 4 are consistent with the design and use of Terminal 5. Consequently, the Proposed Action would neither significantly affect

views to or from the TWA Terminal, nor would it significantly alter any other aspect of the TWA Terminal's context. As mentioned in Chapter 4, in 1988, a portion of Terminal 3 was classified as exceptionally significant by the New York State Historic Preservation Office (NYSHPO). However, no supporting material was attached to that determination and in March 2001, the NYSHPO reversed its decision, citing the building's loss of architectural integrity caused by numerous major renovations since the building's opening. The NYSHPO reconfirmed their determination in June 2009. Appendix A includes copies of the recent determinations by the NYSHPO.

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 terminals would remain in their current configuration. Since no construction would occur and there are no significant cultural resources in the project area, 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 Federal and state-endangered peregrine falcon (*falco peregrinus*) within the general vicinity of the Airport. There are no potential nesting sites for this species at the Airport. 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.

The USFWS reports that, with the exception of transient individuals, there are no Federal species of special concern in the area of JFK. Additionally, the USFWS and the NYSNHP do not report any recent records for occurrences of endangered, threatened, or special concern plant species at JFK.

The National Marine Fisheries Service (NMFS) reports that no threatened or endangered marine species under its jurisdiction are known to occur at the Airport. While Jamaica Bay and its environs support marine turtles that are listed as Federal and state special-status species, no marine turtles are anticipated to occur at the Airport due to the absence of appropriate habitat.

Neither the Proposed Action nor the No-Action/No-Build would adversely impact any Federal-listed or state-listed endangered, threatened, or special concern species because no species, individuals, concentrations, or critical habitats occur in the area affected by the Proposed Action.

5.10 Wetlands

The project area around Terminals 3, 4, and 8 consists entirely of impervious surfaces. 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 found along the Airport's perimeter.

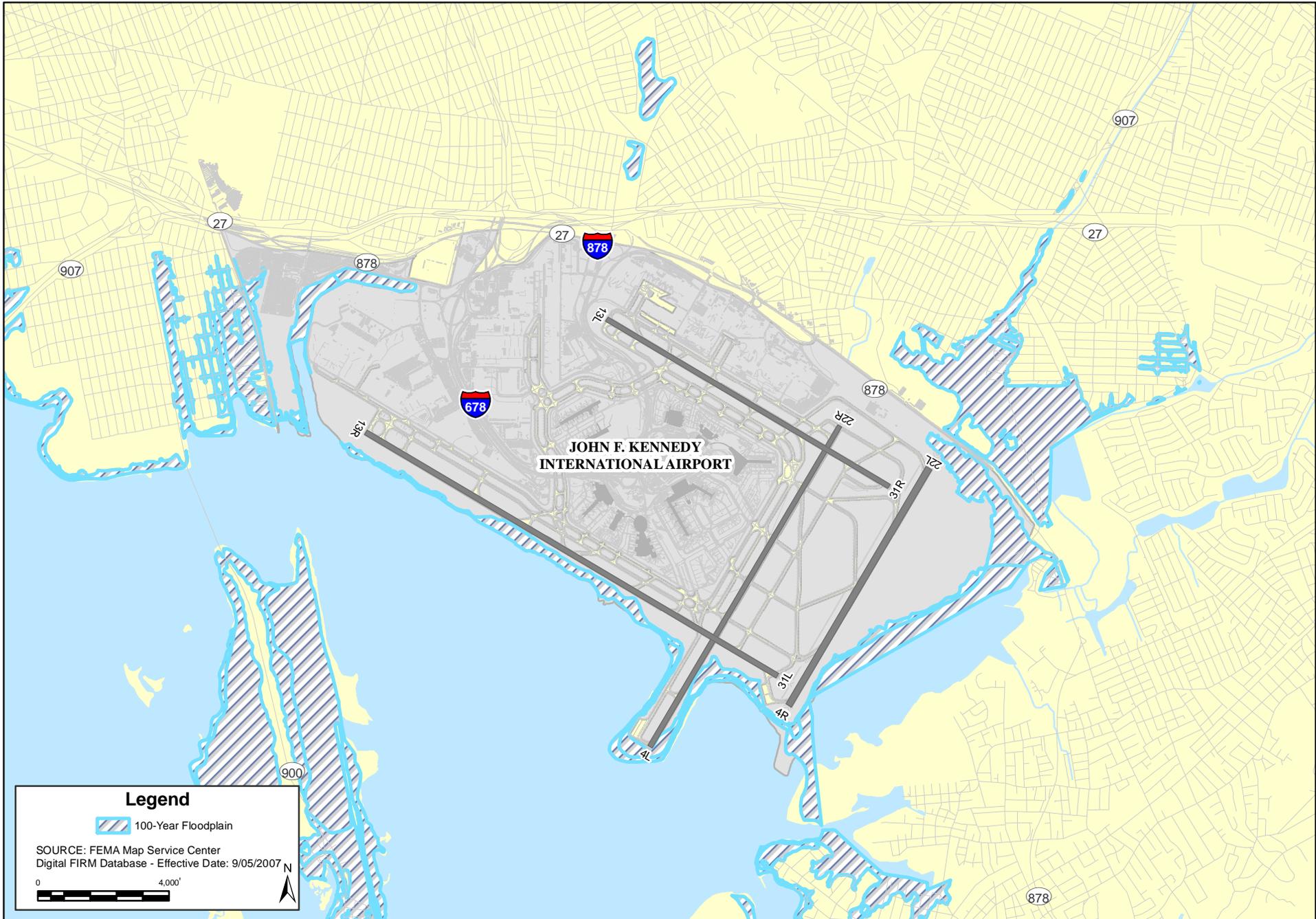
Therefore, the Proposed Action would have no impact to wetlands or other regulated water features because none occur in the area affected by the Proposed Action. Neither the Proposed Action nor the No-Action/No-Build would adversely impact wetlands or other regulated water features at JFK.

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 5-2**. The Proposed Action does not occur within either the 100-year or 500-year flood zone. Therefore, neither the Proposed Action nor the No-Build/No-Action would adversely impact floodplains.

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Floodplains

5.12 Coastal Resources

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 has 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 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.

A letter was sent to the New York State Department of State seeking a consistency determination. The NYSDOS concurred that the Proposed Action is consistent with the State's CZMP. A copy of the correspondence is included in Appendix A.

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

Coastal Barriers

Neither the Proposed Action nor the No-Build/No-Action would adversely impact coastal barriers because 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.

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.

According to FAA Order 1050.1E Change 1, *Environmental Impacts: Policies and Procedures*, the use of natural resources other than for fuel need be examined only if the action involves a need for unusual materials or those in short supply. The construction of the Proposed Action would not require any unusual building materials and the scale of the project is sufficiently small enough that the supply of these materials would not be depleted. As a result, the analysis focuses on fuel demand with and without the Proposed Action.

As discussed in other sections of the document, there would be a redistribution of aircraft, passengers, and vehicles that use JFK, but the total number of each would remain the same with or without the Proposed Action. It is anticipated that the Proposed Action would increase efficiency of aircraft parking, positioning of ground support equipment. Roadways and frontage roads would continue to function at acceptable levels. As a result, it is anticipated that the amount of gasoline, diesel, and Jet-A aviation fuel would be reduced under the Proposed Action versus the No-Action/No-Build. This reduction is likely to be modest. Therefore, neither the Proposed Action nor the No-Build/No-Action will have an adverse impact on the supply of gasoline, diesel, and Jet-A aviation fuel at JFK.

The existing facilities at Terminals 3, 4, and 8 use both electricity and natural gas. Electricity is used to power the buildings, to light the buildings, and to light the aircraft apron, including taxi-lane lights. Natural gas is used for gas-fired water heaters, kitchen equipment, and other gas-fired appliances. The Proposed Action would change the amount of electricity and natural gas consumed at JFK. The following sections describe the impacts to the energy supply that would occur as a result of the No-Build/No-Action and the Proposed Action.

The expansion of Terminal 4 and Terminal 8 would result in increased electricity demand for lighting, heating, and cooling. This increase would be offset by the decrease in energy demand due to the closure and demolition of Terminal 3. As shown in **Table 5-2**, total annual electricity demand for Terminals 4 and 8 under the Proposed Action is projected to be 208,673 MMBTUs, a reduction of over 54,000 MMBTUs compared to the No-Build/No-Action due to the closure and demolition of Terminal 3. Similarly, the demand for natural gas would also be reduced with the Proposed Action (85 MMBTUs) when compared to the No-Build/No-Action (107 MMBTUs).

Table 5-2
PROJECTED ANNUAL ENERGY DEMAND – NO-BUILD/NO-ACTION VS.
PROPOSED ACTION
John F. Kennedy International Airport

	Square Footage	Electricity Demand	Natural Gas Demand
No-Build/No-Action			
Terminal 3	750,000	91,644 MMBTUs (26,858,303 kWh)	37 MMBTUs (39,396 cu ft)
Terminal 4	1,532,916	48,149 MMBTUs (14,110,955 kWh)	20 MMBTUs (20,698 cu ft)
Terminal 8	1,453,000	122,954 MMBTUs (36,034,265 kWh)	50 MMBTUs (52,855 cu ft)
TOTAL TERMINALS 3, 4, AND 8	3,735,916	262,747 MMBTUs (77,003,523 kWh)	107 MMBTUs (112,949 cu ft)
Proposed Action			
Terminal 3	-	-	-
Terminal 4	2,013,959	63,258 MMBTUs (18,539,101 kWh)	26 MMBTUs (27,193 kWh)
Terminal 8	1,718,432	145,415 MMBTUs (42,616,954 kWh)	59 MMBTUs (62,510 kWh)
TOTAL TERMINALS 4 AND 8	3,732,391	208,673 MMBTUs (61,156,056 kWh)	85 MMBTUs (89,704 kWh)

Source: Port Authority of New York & New Jersey; Landrum & Brown analysis, 2010.

Based on the information presented above, neither the Proposed Action nor the No-Build/No-Action would result in adverse impacts to energy supply or the use or supply of natural resources. In fact, the Proposed Action is environmentally superior to the No-Build/No-Action in the use of energy.

Sustainability

With regard to sustainable design, Executive Order 13123, *Greening the Government Through Efficient Energy Management*,² 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.

Under the Proposed Action, Terminal 3 would be demolished and Terminals 4 and 8 would be expanded. Terminal 3 is an older facility compared to the existing Terminals 4 and 8, and is therefore less energy efficient. Construction and demolition would be done through a Tenant Alteration Application to the Port

² Executive Order 13123, *Greening the Government Through Efficient Energy Management*, 64 FR 30851, June 8, 1999.

Authority. As per Port Authority policy and guidelines, construction will be done in compliance with the Port Authority's Sustainable Design Project Manual. Thus, the Proposed Action would meet the Port Authority's, Delta Airlines', and FAA's goals for promoting sustainable design.

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.

Light Emissions

The Proposed Action would result in the minor reconfiguration of light sources in the Terminal 3 and 4 envelope and Terminal 8 along curbsfronts and the terminal buildings. However, light emissions are not expected to be different from existing conditions. In addition, light emissions from the Terminal 3 and 4 envelope are shielded from surrounding sensitive land uses by other Airport infrastructure such as the parking garages and terminals to the north and northwest. The Terminal 4 and 8 redevelopment is located entirely on Airport property and no lighting would be directed toward residential areas.

Neither the Proposed Action nor the No-Build/No-Action would perceptibly alter exterior light levels outside the Terminals 3, 4, and 8 environments. As such, no adverse impact would result from light emissions under either alternative.

Visual Impacts

The Proposed Action would change the visual environment by removing all of Terminal 3, extending a pedestrian walkway/bridge from Terminal 2 to Terminal 4, enlarging the Terminal 4 passenger processing facilities and Concourse B, and expanding Terminal 8. These changes would affect the most distinct visible element of the affected buildings, which is the parasol roof of Terminal 3. The angular addition to Terminal 4 would be consistent with its current blocky form, compatible with the overall complexity of the terminal area, and would not obstruct any existing long views. The extension of the pedestrian walkway/bridge would not alter the form of either Terminal 2 or 4, and would blend with the already complex arrangement of roads, rails, and other linear forms in the area affected by the Proposed Action. As noted in sections 5.7 and 5.8, the extension of Concourse B of Terminal 4 in relation to Terminal 5 would not substantially alter any views to and from Terminal 5. As such, these changes would not result in adverse visual/aesthetic effects.

Under the No-Build/No-Action, the terminal buildings would remain in their current configuration. 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*, the impacts to solid waste collection, control, and disposal due to airport construction projects must be assessed in an EA. Airport construction projects, such as terminal redevelopment, 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.

Hazardous Materials

Chapter 4, *Affected Environment* summarizes the potential hazardous wastes present at Terminals 3, 4, and 8 that may be impacted by the Proposed Action. Hazardous substances and other contaminants, including asbestos, lead, polychlorinated biphenyls (PCBs), chlorofluorocarbons (CFCs), mercury, and petroleum hydrocarbon contamination have been identified in soil and groundwater in and around Terminals 3, 4, and 8 at JFK. Redevelopment of the Terminal 3 and 4 envelope and expansion of Terminal 8 would not increase the quantity of hazardous materials present in the terminals or in the environment, or exacerbate existing contamination. As part of the project, nine underground storage tanks that contain diesel and gasoline fuel would be removed and replaced with new tanks within the Terminal 4 site. During the tank removal process, soils adjacent to the tanks will be tested and if necessary removed from the site.

Because implementation of the Proposed Action would require the removal and remediation of some hazardous materials from the buildings and subsurface, the existing levels of contamination would be reduced or eliminated. These hazardous materials would be properly disposed of, reclaimed, or recycled as appropriate. Pollution prevention measures identified in Section 5.18, *Construction Impacts*, would limit the adverse environmental effects from these materials. In addition, the Port Authority's Best Management Practices requires facilities with petroleum and/or chemical bulk storage areas to comply with all applicable regulations including those involving releases, registration, handling, and storage. The Port Authority currently has a Spill Prevention, Control and Countermeasure (SPCC) Plan for JFK. The plan contains appropriate spill prevention and clean up measures. Tenants that store chemicals also must comply with all applicable regulations and prepare and maintain a SPCC Plan.

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

Solid Waste

There would be the potential for solid waste to be generated from the Proposed Action in the form of soil, asphalt millings, and building 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 will 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 150/53070-10E). 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. The construction would occur in seven phases, which would allow portions of the Terminal 3 and 4 envelope and Terminal 8 to be unaffected and function normally while other areas are under construction. The construction phasing plan has been designed to allow full passenger service and aircraft operations while minimizing effects to terminal and airfield operations.

Water Quality

Stormwater runoff during construction is regulated by the New York State Department of Environmental Conservation (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 documents and become an obligation of the contractor. The Port Authority will 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 150/5370-10E, *Standards for Specifying Construction of Airports*, 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.

Air Quality

Construction activities would have a short-term impact on local air quality. Air pollution during the construction period would be a consequence of one or more of the following activities:

- Vehicular activity in support of construction operations
- Wind erosion of soils
- The movement of construction vehicles along haul roads
- Excavation
- Cement and aggregate handling

An emissions inventory of construction emissions was prepared and the results of the inventory are included in Appendix C, *Air Quality*.

The quantity of emissions resulting from construction would depend on the total number of vehicles employed on the projects and the duration of operation. Emissions from construction vehicles would be temporary in nature and would be confined to the construction area and the immediate surrounding vicinity. Emissions would be mitigated through the use of best construction practices.

Fugitive dust is generated by the pulverization and abrasion of ground surfaces during construction. The dust would become airborne by the action of turbulent air currents created by wind or construction vehicle activity. The air pollution impact potential of fugitive dust sources would depend on the quantity and drift potential of the dust injected into the atmosphere.

Control measures for fugitive dust on paved roads focus on either preventing material from being deposited on roads or removal of any material from the lanes of travel. Methods commonly used to prevent the deposit of dust include covering or wetting the material being hauled; cleaning vehicles before they leave the construction site; using 'bump strips' or grates to shake dust from the vehicles; and paving the construction site access roads nearest to the paved roads. To minimize the stirring or entrapment of fugitive dust already on roads, mitigation measures would include frequent sweeping. In order to minimize fugitive dust transport, unpaved roads and inactive portions of the construction site would be either watered (achieving an estimated 50 percent reduction in fugitive dust) or chemically stabilized (achieving an 80 percent reduction). The exact method or combination of methods for abatement of erosion has not yet been determined. Another measure frequently used in the suppression of dust is the placement of seed and mulch as construction areas are completed.

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 5-3 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.³ Noise levels resulting from operation of construction equipment are generally higher than those generated by normal traffic flows.

**Table 5-3
CONSTRUCTION EQUIPMENT NOISE
John F. Kennedy International Airport**

Construction Equipment	Typical Sound Level dB(A) at 50-Feet	Est. Total Sound Energy kWh/Day
1. Dump Truck	88	296
2. Portable Air Compressor	81	147
3. Concrete Mixer (truck)	85	111
4. Jackhammer	88	84
5. Scraper	88	79
6. Dozer	87	78
7. Paver	89	75
8. Generator	76	65
9. Pile Driver	101	62
10. Rock Drill	98	53
11. Pump	76	47
12. Pneumatic Tools	85	36
13. Backhoe	85	33

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

Construction activities associated with the Proposed Action would not result in noise impacts to residential or other public land uses because of the distances between sound sources at the project site and surrounding public and residential land uses. Additionally, the Airport has an existing high background noise level resulting from aircraft operations. The noise generated during construction activities would not be discernible from the normal background noise levels at JFK.

³ May, D. N., Editor, 1978. *Handbook of Noise Assessments*, Page 215. Van Nostrand Reinhold Company, New York.

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, based on the selected contractor(s) haul plan, 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.

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 construction and demolition activities that associated with the Proposed Action are routine events that occur throughout the nation whenever older, obsolete structures containing potentially hazardous materials are demolished. The identification of the hazards associated with these materials has resulted in the development of handling, transportation, disposal and recycling procedures that take into account their hazardous properties. 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. The appropriate procedures are outlined in the "Tenant Construction Review Manual" dated March 1997 prepared by Port Authority. Although these mitigation measures 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 and construction waste would be generated from the expansion of Terminal 4. The majority of the waste material would result from the demolition of Terminal 3. Prior to demolition and removal of any building, each structure would be assessed to determine the presence of asbestos, lead, PCBs, or any other hazardous materials. All necessary precautions for the removal of such materials would be coordinated with the appropriate state and local permitting agencies.

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 demolition and construction debris would be coordinated between the Port Authority, terminal tenants, 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 at Terminal 4 and Terminal 8. The same or similar procedures can be implemented at Terminal 3 as well.

The following lists appropriate preventive measures for construction activities associated with each of the hazardous materials identified in Terminals 3, 4, and 8:

- Asbestos would be removed from Terminal 3, prior to any demolition or renovation work. Removal protocols, established by Port Authority, the City and state (NYSDEC and New York State Department of Labor) regulators would be followed, thereby mitigating the potential hazards. These procedures would also address issues of noise and dust control, and thereby protect the public and workers from exposure to hazardous materials. The asbestos waste generated during the abatement procedures would be disposed of according to state (NYSDEC) regulatory requirements.
- Materials coated with lead-based paint would be removed from the buildings during demolition, for disposal or recycling, as appropriate. Construction protocols would ensure that dust is minimized and contained. Workers would be provided with protection from lead in dust. Local and state permitting and notification could apply for the removal, transportation, disposal and recycling of lead containing materials.
- PCB-containing ballasts could be incinerated, recycled, or disposed of in an approved landfill, subject to local, state, and Federal regulations. Transformers containing PCBs could be incinerated or recycled at approved facilities, also subject to local, state and Federal regulations. Incineration and recycling are more protective of the environment.
- Mercury-containing lamps would be removed prior to demolition or renovation of the terminals in accordance with Federal and state hazardous waste requirements. Removal protocols would ensure that lamps are protected from breakage and that waste lamps handled by qualified waste handlers and transporters are directed to appropriate recycling or disposal facilities. Mercury and lead in elemental form, such as thermostats, thermometers, switches, and solders would be removed and disposed of or recycled at approved facilities in accordance with Federal and state hazardous waste requirements.
- 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 at Terminals 3, 4, and 8. In addition, design of storm drainage and building foundations would include provisions to limit the migration of suspended solids or other pollutants along these pathways.

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, dewatering Permits, and Port Authority Tenant Alteration permits, would be obtained prior to implementation of the project. The design and construction of the Proposed Action is similar to other terminal redevelopment projects at JFK. Like the other terminal redevelopment projects, the Proposed Action will follow the requirements of the applicable building codes and other 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.

The City of New York has expressed its policy that JFK remains the primary international gateway to the United States. Modernization of JFK is essential if this policy is to be achieved, especially 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.

5.19.4 Degree of Controversy on Environmental Grounds

The public has been made aware of this proposed redevelopment project at JFK through various news reports regarding airport modernization plans. These projects have been reported in local newspapers and are periodically discussed at public meetings of the Port Authority Board of Commissioners. The Proposed Action and the availability of the Draft EA for public review were described in a public notice. The Port Authority, as Airport sponsor, is not aware of any major environmental controversy that has been generated from notices regarding the Proposed Action.

The Proposed Action would increase terminal operational efficiency, but would not affect flight patterns, runway utilization, or the number of passengers. The Proposed Action is consistent with the historical pattern of progressive

improvements of terminal infrastructure that have occurred over time at JFK. In addition, operation of the project would have no significant environmental impacts. Therefore, the redeveloped Terminals 3, 4, and 8 are not expected to be controversial on environmental grounds.

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 Taxiway 'YA' and 'FB' extensions and construction of Taxiway 'KB', Hangar 12 Demolition, Taxiway "F" Rehabilitation, demolition of Terminal 6, Rehabilitation of Central Terminal Area (CTA) Roadways, and the Delay Reduction Program – New Taxiways, Improvements to Existing Taxiways and Runway 13R Threshold Relocation (Bay Runway Improvement/Reconstruction project). 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 will 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, Runway Safety Area (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 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.
- **Taxiway 'ZA' Rehabilitation** – Work included milling and repaving Taxiway 'ZA' south of Runway 13L/31R and the widening of the taxiway fillet at the intersection of Taxiway 'ZA' and 'EA'. A categorical exclusion was approved for this project in August 2005 and was completed in December 2005.
- **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. The proposed project also entailed 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 for this project. 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 includes extending Taxiway 'YA' west across Runway 4R/22L until it meets 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 is scheduled to be completed in the third quarter of 2010.
- **Delay Reduction Program – New Taxiways, Improvements to Existing Taxiways and Runway 13R Threshold Relocation** – This project will upgrade JFK's airside infrastructure, widen and replace approximately three miles of Runway 13R-31L. A central component of the program is the widening of the Runway 13R-31L from 150 to 200 feet to make way for new delay-reduction taxiways. The new taxiways will improve aircraft queuing and enable swifter departures, and easier access from taxiways to terminal gates; saving time on the ground for every passenger at JFK. 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 will be completed in summer of 2010; however, the project is not scheduled to be completely finished until May 2011.
- **Taxiway "Y" Rehabilitation** – Work entails 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 entails the hangar demolition and ramp expansion at the Hangar 12 site. A categorical exclusion was approved for this project in January 2009. Work is scheduled to be completed in the second quarter of 2011.
- **Wildlife Hazard Assessment** – JFK will be undergoing a new Wildlife Hazard Assessment Study for one year beginning in 2010. The findings of this study will be used to create an updated Wildlife Hazard Management Plan to be 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 entails the installation of Precision Approach Path Indicators (PAPI) for Runway 13R. This project received a Categorical Exclusion in October 2009 and began construction in March 2010. Work is scheduled to be completed in June 2010 as part of the Delay Reduction Program.
- **Taxiway "F" Rehabilitation** - Work entails the full-width milling and overlaying with asphalt concrete pavement of approximately 2,700 feet of Taxiway F, between Runway 4L-22R and Runway 22L-4R, 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 is expected to begin in June 2010 and end in December 2010.

Runway Safety Area Improvements

In accordance with FAA Order 5200.8, Paragraph 10, titled "Implementation of RSA Improvements," the Port Authority plans to improve any RSAs that do not meet compliance. Two such projects are scheduled at JFK prior to 2015.

- **Runway 4L-22R** – The Runway 4L-22R rehabilitation is anticipated to commence in late 2013 and be completed by 2015.
- **Runway 13L-31R** -The recommended RSA improvement for Runway 31R overrun is to declare the 1000 x 500 foot RSA. The RSA meets grading standards; however, in order to offset the unusable runway length in declared distances, the Port Authority will extend the runway on the south end, and relocate the Runway 31R landing threshold. In light of the fact that this runway will not undergo rehabilitation prior to 2015, the Port Authority is faced with the challenge of improving RSA independent of any associated construction work. The Port Authority is carefully crafting the project schedules to complete the work while minimizing the inconvenience to the passengers, however, the Port Authority cannot commit to a specific timeline at this time.

Landside-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. Jet Blue is currently discussing a project with the Port Authority to start Phase II of this FAA-approved project with the demolition of Terminal 6. Phase II is scheduled to be completed by the second quarter of 2011.

- **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 Central Terminal Area (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. Work was completed in 2007.
- **Bollard Protection Terminal Frontages** - The proposed project entails the installation of a frontage bollard system at Terminals 1, 2, 3, 4, 5, 7, and 8. This project, once completed, will enhance 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 is expected to begin in the second quarter of 2010 and should take approximately one year to complete.
- **Rehabilitation of Central Terminal Area (CTA) Roadways** – This project entails the rehabilitation of the CTA Roadways. Work associated with the rehabilitation includes 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 is expected to begin in June 2010 and end in February 2012.

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 Ave. between Cargo Plaza Rd. and North Boundary Rd. 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.

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.

Noise

There would be no noise impacts associated with the Proposed Action.

Compatible Land Use

There would be no land use impacts associated with the Proposed Action.

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

Because no relocation is involved and no other adverse effects on the social environs would occur, the Proposed Action would not be expected to contribute to any significant adverse cumulative socioeconomic impacts when considered in conjunction with other landside and airside projects at JFK. Impacts to surface transportation would occur with the Proposed Action due to redistributing the traffic from one area to another. In some cases, that redistribution will take advantage of excess capacity and in others, the existing infrastructure can be reorganized through signage changes to accommodate additional traffic while maintaining an acceptable LOS if needed.

The Proposed Action would cause an impact to the surface transportation at the Airport, but not a significant one. The Proposed Action and other projects in the planning or construction stages do not appear to include any activities that would result in further impacts to surface transportation. Therefore, no cumulative adverse impacts on surface transportation 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 Terminal 3 and 4 redevelopment and other redevelopment projects at JFK are expected to improve air quality as a result of improved vehicle circulation within the CTA, improved aircraft circulation on the aprons, and

increased operating efficiency. The other projects recently completed, under construction, or planned in the foreseeable future at JFK, also have *de minimis* emissions. Therefore, no cumulative adverse air quality impacts are anticipated from the Proposed Action.

Water Quality

The Proposed Action would not increase the amount of impervious surfaces and therefore would not increase the amount of stormwater runoff generated at JFK. Stormwater would continue to enter the Airport stormwater system, which discharges directly to Jamaica Bay. However, the Proposed Action includes the installation of specialized catch basins designed to control stormwater flow from the apron during times when contaminants could potentially be introduced into the stormwater system. 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. As discussed in Section 5.6, *Water Quality*, 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.

The overall impact of the Proposed Action on stormwater quantity and quality would be a positive one due to the installation of new water quality devices, and the fact that there would be no new areas of impervious surface created and no additional aircraft operations.

All operations in the area that might impact water quality would be performed in accordance with relevant regulations and BMPs. The quality of stormwater would not be adversely affected by the Proposed Action. Therefore, no significant adverse cumulative water quality impacts are anticipated.

Section 303c Resources

There are no Section 303 resources within the area affected by the Proposed Action. Therefore, there would be no Section 303c impacts associated with the Proposed Action.

Historic, Architectural, Archaeological, and Cultural Resources

As discussed in Chapter 4, *Affected Environment* there are no historic or archaeological resources located within the project area and as a result there would be no impacts to historic, architectural, archaeological, or cultural resources associated with the Proposed Action.

Fish, Wildlife, and Plants

There would be no fish, wildlife, or plant impacts associated with the Proposed Action because no species, individuals, concentrations, or critical habitats occur in the area affected by the Proposed Action.

Wetlands

The project area consists entirely of impervious surfaces. 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 found along the Airport's perimeter. Therefore, the Proposed Action would have no impact to wetlands or other regulated water features because none occur in the area affected by the Proposed Action.

Floodplains

The Proposed Action does not occur within either the 100-year or 500-year flood zone. 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 fully expected to be consistent with the Waterfront Revitalization and Coastal Resources Act (WRCRA). 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 because 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.

Wild and Scenic Rivers

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, there would be no wild and scenic river impacts associated with the Proposed Action.

Farmlands

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, there would be no farmland impacts associated with the Proposed Action.

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.

Light Emissions and Visual Impacts

The Proposed Action is not expected to cause significant adverse impacts from light emissions or visual impacts. 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 add light emissions or visual impacts that would affect residential areas or other sensitive developments. Therefore, significant adverse cumulative impacts from light emissions or visual impacts are not expected.

Hazardous Materials, Pollution Prevention, and Solid Waste

The Proposed Action would not increase the quantity of hazardous materials present in the terminals or in the environment, or exacerbate existing contamination. Because implementation of the Proposed Action would require the removal and remediation of hazardous materials from the buildings and subsurface, the existing levels of contamination would be reduced or eliminated. These hazardous materials would be properly disposed of, reclaimed, or recycled as appropriate. 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 resulting from the demolition of Terminal 3. Building 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, the incorporation of the above referenced procedures into the Proposed Action's construction specifications would restrict the emission 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, to below significant levels. All related projects at JFK are subject to similar construction mitigation measures and are isolated from any neighboring community by the surrounding airfield, therefore no significant cumulative impacts are expected to occur due to the Proposed Action with regard to construction related activities.

A review of the potential construction emissions from the proposed and the other projects occurring at or near JFK finds that the 2013 construction year is the timeframe where the greatest amount of emissions would occur. The Proposed Action was demonstrated to be well below the *de minimis* thresholds and the scale of the other projects is such that they too have been demonstrated to be or could be demonstrated to be *de minimis*. General Conformity is applied to a single project, as such there is no requirement or quantitative methodology for evaluating the temporary construction emissions from multiple projects together. However, a qualitative assessment of the Proposed Action and the other projects can be prepared by utilizing emissions from similar projects that have been evaluated in the past. This approach finds that the scale and duration of other projects assumed for the 2013 construction period would result in small amounts of emissions, primarily CO₂ from trucks and other construction equipment. The relatively small number of projects, combined with the short duration of many of these projects leads to the conclusion that there would be no exceedance of the *de minimis* thresholds when looked at cumulatively with the Proposed Action.

Noise Impacts

As discussed in Section 5.18, 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 in the CTA. Because the CTA is isolated from any neighboring community by the surrounding airfield, 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, 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. The City of Jamaica has emerged from this urbanization with a regional transit focus. JFK will continue to have effects on Jamaica similar to those that already exist with or without the Proposed Action. The beneficial effects are primarily economic and employment-related. They are effects that extend beyond southeastern Queens while the adverse effects primarily relate to the Airport traffic and noise from motor vehicles and aircraft.

When considered together with other projects recently completed, underway, and proposed at JFK, the Proposed Action is consistent with the long-range planning goals for the CTA. Terminal 3 no longer meets the needs of the aviation users at JFK in terms of accessibility, customer service, and overall efficiency.

Other projects described in this section will provide long-term benefits similar to the Proposed Action: enhanced operating efficiency, 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 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

6.0 Mitigation

Mitigation measures were not identified for this project because there were no significant impacts identified for any environmental category that required mitigation. However, the construction documents will include language and details on dust and sedimentation control, as well as preventive measures for construction activities associated with hazardous materials identified in Terminals 3, 4, and 8:

- Asbestos would be removed from Terminal 3, prior to any demolition or renovation work. Removal protocols, established by Port Authority, the City and state (NYSDEC and New York State Department of Labor) regulators would be followed, thereby mitigating the potential hazards. These procedures would also address issues of noise and dust control, and thereby protect the public and workers from exposure to hazardous materials. The asbestos waste generated during the abatement procedures would be disposed of according to state (NYSDEC) regulatory requirements.
- Materials coated with lead-based paint would be removed from the buildings during demolition, for disposal or recycling, as appropriate. Construction protocols would ensure that dust is minimized and contained. Workers would be provided with protection from lead in dust. Local and state permitting and notification could apply for the removal, transportation, disposal and recycling of lead containing materials.
- PCB-containing ballasts could be incinerated, recycled, or disposed of in an approved landfill, subject to local, state, and Federal regulations. Transformers containing PCBs could be incinerated or recycled at approved facilities, also subject to local, state and Federal regulations. Incineration and recycling are more protective of the environment.
- Mercury-containing lamps would be removed prior to demolition or renovation of the terminals in accordance with Federal and state hazardous waste requirements. Removal protocols would ensure that lamps are protected from breakage and that waste lamps handled by qualified waste handlers and transporters are directed to appropriate recycling or disposal facilities. Mercury and lead in elemental form, such as thermostats, thermometers, switches, and solders would be removed and disposed of or recycled at approved facilities in accordance with Federal and state hazardous waste requirements.
- 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 at Terminals 3, 4, and 8. In addition, design of storm drainage and building foundations would include provisions to limit the migration of suspended solids or other pollutants along these pathways.

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. Tenants that store chemicals must comply with all applicable regulations and prepare and maintain a SPCC Plan.

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Chapter 7

7.0 Public Involvement

To satisfy requirements for public involvement, a Notice of Public Comment was published in the New York Newsday. Copies of this notice are provided in Appendix D, Public Involvement. The Draft Environmental Assessment was available at the Port Authority's Administration Building at JFK, Port Authority's central staff office in Manhattan (225 Park Avenue South), and at the Federal Aviation Administration (FAA) Airport District Office in Garden City. A copy of the document was also available for review on the website, <http://www.airportsites.net/JFK-Delta-EA>. The comment period was 15 days from Tuesday, June 1, 2010 to Tuesday, June 15, 2010. No comments were received during this period.

To ensure that interested parties are informed, another advertisement will be placed in the Newsday 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 at the FAA Airport District Office in Garden City.

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Chapter 8

8.0 Preparers

Port Authority of New York and New Jersey

Ed Knoesel, Manager, Environmental Programs, Aviation Department

Adeel Yousuf, Airport Environmental Specialist, Aviation Department

Landrum and Brown

Rob Adams, Officer-in-charge

Sarah Potter, Project Manager

Charles Babb, Air Quality

David Billiter, Air Quality

Chris Sandfoss, Energy and Natural Resources

Delta Air Lines

Thomas Lang, General Manager, NYC Facilities

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Chapter 9

9.0 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

Enviro-Sciences Inc., Phase I Environmental Site Assessment Portion of Terminal 4, John F. Kennedy International Airport. Prepared for Landrum & Brown, January 2001.

Environmental Assessment of New Entrant Exemption to the High Density Rule and Operations Specifications for JetBlue Airways Corporation. Prepared for the FAA and Port Authority by CH2M Hill. September 1999

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.

Federal Aviation Administration (FAA), Advisory Circular 150/5300-13, *Airport Design*. September 1989, as Amended.

Federal Aviation Administration (FAA). Advisory Circular 150/5370-10E, *Standards for Specifying Construction of Airports*. February 17, 1989, as Amended

Federal Aviation Administration (FAA). Order 5050.4B *National Environmental Policy Act (NEPA) Implementing Instructions for Airport Projects*. April 28, 2006

General Conformity Final Rule, 40 CFR Parts 6, 51, and 93, 30 November, 1993

Impact Environmental, Phase I Environmental Site Assessment Terminals 2 and 3 JFK International Airport, Jamaica, New York. Prepared for Delta Airlines Inc., April, 2001.

U.S. Environmental Protection Agency (EPA) and U.S. Department of Transportation (USDOT). 1996. Technical Data to Support FAA's Advisory Circular on Reducing Emissions from Commercial Aviation.

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).

Long Range Forecast and Key Assumptions, 2010-2019, Kennedy, LaGuardia, Newark, Stewart. Industry Forecasting and Traffic Statistics, The Port Authority of NY & NJ, November 2009.

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

John F. Kennedy International Airport Delta Redevelopment Traffic Impact Study Draft Report, The Port Authority of NY & NJ in association with Eng-Wong Taub & Associates, April 22, 2010.

New York State Department of Environmental Conservation State Pollutant Discharge Elimination System (SPDES) Discharge Permit # 2-6308-00019/00016, June 1, 2006, JFK International Airport, Port Authority of New York and New Jersey

Appendix A



New York State Office of Parks, Recreation and Historic Preservation
Historic Preservation Field Services Bureau
Peabees Island, PO Box 189, Waterford, New York 12188-0189

518-237-8643

March 8, 2001

Mr. Steven Bedford
Fitzgerald & Halliday, Inc.
157 Oxford Street
Hartford, Connecticut 06105

RE: Former Pan Am Terminal
JFK International Airport
Queens County, NY
01PR1183

Dear Mr. Bedford:

Thank you for requesting a re-evaluation of the former Pan Am Terminal that was declared National Register eligible by the State Historic Preservation Office (SHPO) in 1988. We have reviewed your "Eligibility Examination" report of February 28, 2001 in accordance with Section 106 of the National Historic Preservation Act of 1966 and the relevant implementing regulations.

Based on the information provided on pages 3-5 of the report concerning alterations and additions, the SHPO has reversed its earlier opinion on the eligibility of the Pan Am Terminal. The building does not meet the criteria for listing to the National Register due to extensive loss of integrity of the original design and materials.

If you have any questions regarding this re-evaluation please contact me at (518) 237-8643, extension 3266.

Sincerely,

Kathleen A. Howe

Kathleen A. Howe
Historic Preservation Specialist

-----Original Message-----

From: Ruth.Pierpont@oprhp.state.ny.us [<mailto:Ruth.Pierpont@oprhp.state.ny.us>]
Sent: Tuesday, June 09, 2009 4:34 PM
To: Louis, Rich
Subject: FW: TERMINAL 3 AT JFK

Rich - here is your answer!

From: Howe, Kathy (PEB)
Sent: Tuesday, June 09, 2009 4:08 PM
To: Pierpont, Ruth (PEB)
Subject: RE: TERMINAL 3 AT JFK

Ruth,

I talked to Mark about it and we decided that there is no reason to re-evaluate the former Pan Am Terminal so our determination that the building is not eligible for the NR remains.

Kathleen A. Howe
Historic Preservation Program Analyst
NYS Office of Parks, Recreation & Historic Preservation
Field Services Bureau
Peebles Island
P.O. Box 189
Waterford, NY 12188-0189
ph. 518-237-8643 ext. 3266
fax 518-233-9049
kathy.howe@oprhp.state.ny.us <<<mailto:kathy.howe@oprhp.state.ny.us>>>

From: Pierpont, Ruth (PEB)
Sent: Tuesday, June 09, 2009 2:02 PM
To: Howe, Kathy (PEB)
Subject: FW: TERMINAL 3 AT JFK

Any need to re-think the PanAm terminal DOE?

From: Louis, Rich [<mailto:rlouis@panynj.gov>] <<<mailto:rlouis@panynj.gov>>>
Sent: Tuesday, June 09, 2009 1:51 PM
To: Louis, Rich; Pierpont, Ruth (PEB)
Subject: RE: TERMINAL 3 AT JFK

How about if I send the attachment!

rich

<< File: Pan Am T3 SHPO letter March 01.pdf >>

-----Original Message-----

From: Louis, Rich
Sent: Tuesday, June 09, 2009 1:47 PM
To: Ruth L. Pierpont (E-mail)
Subject: TERMINAL 3 AT JFK

Hi Ruth.

I called and left you as message regarding the State's position of the historical significance of Terminal 3 (the former Pan Am Terminal) here at JFK. This is becoming a current issue for us as we are working again with Delta to plan for new facilities for them that would result in the demolition of this structure.

A review of our records indicates that back in 2001 the firm of Fitzgerald and Halliday prepared an Eligibility Examination report for the building that was submitted to Kathleen Howe. I believe this was done as part of the environmental review of a prior Delta expansion plan that did not advance back then. The result of those discussions seems to be documented via the attached letter dated March 1, 2001 which indicates that the building did not meet the criteria for listing to the National Register due to extensive loss of integrity from the original design and materials. We are currently discussing the scope of an update to the environmental review of the project. I would like to know if we can assume that this letter is the final determination on this question and if other information would be needed to be discussed with your offices as we go forward. If you or your designee can give me a call, it would be appreciated.

Regards

Rich



THE PORT AUTHORITY OF NY & NJ

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Engineering Department

May 25, 2010

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

**RE: JOHN F. KENNEDY INTERNATIONAL AIRPORT – JAMAICA, NY:
CHANGE IN AIRPORT LAYOUT PLAN: TERMINAL EXPANSIONS,
TERMINAL DEMOLITION, TERMINAL CONNECTOR, FUEL FARM
RELOCATION**

Dear Mr. Zappieri:

The Port Authority of NY & NJ (Port Authority) and Delta Airlines are proposing to undertake a variety of improvements to facilities at the John F. Kennedy International Airport (JFK), located near Jamaica Bay, at Jamaica, Borough of Queens, Queens County, New York. The work will require Federal Aviation Administration (FAA) approval because of changes in the airport layout plan.

The work involves an expansion of the existing Terminal 4 by the addition of a new nine (9) gate concourse and additional passenger processing facilities, the demolition of the obsolete Terminal 3 and conversion of the space for use as an airplane parking, the expansion of Terminal 8 by the addition of a new three (3) gate concourse and new passenger processing facilities to accommodate airlines displaced from Terminal 4, and the construction of a post-security connector between Terminals 2 and 4 to facilitate passenger movement between the terminals by providing a shorter, quicker, more convenient connection without requiring passengers to undergo additional security screening.

As noted previously, the proposed project requires a change in the airport layout plan that must be approved by the FAA. The Port Authority has reviewed the subject project in light of the New York State Department of State (NYS DOS) coastal zone policies and the New York City Waterfront Revitalization Program (NYCWRP) coastal zone policies and determined that there would be no foreseeable adverse effects on coastal resources from the proposed work as it would be undertaken at locations in the airport removed from the shoreline.

*Two Gateway Center
Newark, NJ 07102*



THE PORT AUTHORITY OF NY & NJ

Enclosed are 2 drawings depicting the existing terminal layout and the proposed work and changes to the airport layout plan, as well as completed Federal Consistency Assessment Form (FCAF) and New York City Waterfront Revitalization Program Consistency Assessment Form (NYCWRPCAF) to assist in your review of the proposed project.

The project site is located within a developed area of the airport that is inland of the shoreline. Therefore, the work will not require permits or approvals from the U.S. Army Corps of Engineers. As it is anticipated that the project will involve soil disturbance of greater than 1 acre, a Storm Water Pollution Prevention Plan will be prepared for submission to the New York State Department of Environmental Conservation.

Thank you for your assistance in this matter. If you have questions or need 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
Supervisor, Permits and Governmental Approvals
Environmental Engineering Unit

Enclosures:

- 1) Drawings
- 2) FCAF
- 3) NYC WRPCAF

cc: Wilbur Wood, NYCDP

NEW YORK STATE DEPARTMENT OF STATE
COASTAL MANAGEMENT PROGRAM

Federal Consistency Assessment Form

An applicant, seeking a permit, license, waiver, certification or similar type of approval from a federal agency which is subject to the New York State Coastal Management Program (CMP), shall complete this assessment form for any proposed activity that will occur within and/or directly affect the State's Coastal Area. This form is intended to assist an applicant in certifying that the proposed activity is consistent with New York State's CMP as required by U.S. Department of Commerce regulations (15 CFR 930.57). It should be completed at the time when the federal application is prepared. The Department of State will use the completed form and accompanying information in its review of the applicant's certification of consistency.

A. APPLICANT (please print)

1. Name: The Port Authority of New York & New Jersey ATTN: Dr. Marc Helman
2. Address: 2 Gateway Center, 14th Floor, Newark, NJ 07102
3. Telephone: Area Code (⁹⁷³) 565 - 7564

B. PROPOSED ACTIVITY

1. Brief description of activity:

Terminal 4 - add 9 gate concourse, add passenger processing facilities, relocate fuel farm,
construct post-security walkway to Terminal 2. Terminal 8 - add 3 gate concourse, add
passenger processing facilities. Terminal 3 - demolish, convert to airplane parking.

2. Purpose of activity:

The project add capacity to existing terminals, eliminate an obsolete terminal,
and enable easier passenger transfer between Terminals 2 to 4.

3. Location of activity:

<u>Queens County</u>	<u>Jamaica</u>	<u>John F. Kennedy International Airport</u>
County	City, Town, or Village	Street or Site Description

4. Type of federal permit/license required: FAA Approval -- Change of Airport Layout Plan

5. Federal application number, if known: _____

6. If a state permit/license was issued or is required for the proposed activity, identify the state agency and provide the application or permit number, if known:

Storm Water Pollution Prevention Plan to be prepared for NYSDEC

C. COASTAL ASSESSMENT Check either "YES" or "NO" for each of these questions. The numbers following each question refer to the policies described in the CMP document (see footnote on page 2) which may be affected by the proposed activity.

1. Will the proposed activity result in any of the following: YES NO
- a. Large physical change to a site within the coastal area which will require the preparation of an environmental impact statement? (11, 22, 25, 32, 37, 38, 41, 43)
 - b. Physical alteration of more than two acres of land along the shoreline, land under water or coastal waters? (2, 11, 12, 20, 28, 35, 44)
 - c. Revitalization/redevelopment of a deteriorated or underutilized waterfront site? (1)
 - d. Reduction of existing or potential public access to or along coastal waters? (19, 20)
 - e. Adverse effect upon the commercial or recreational use of coastal fish resources? (9,10) ...
 - f. Siting of a facility essential to the exploration, development and production of energy resources in coastal waters or on the Outer Continental Shelf? (29)
 - g. Siting of a facility essential to the generation or transmission of energy? (27)
 - h. Mining, excavation, or dredging activities, or the placement of dredged or fill material in coastal waters? (15, 35)
 - i. Discharge of toxics, hazardous substances or other pollutants into coastal waters? (8, 15, 35)
 - j. Draining of stormwater runoff or sewer overflows into coastal waters? (33)
 - k. Transport, storage, treatment, or disposal of solid wastes or hazardous materials? (36, 39) .
 - l. Adverse effect upon land or water uses within the State's small harbors? (4)

2. Will the proposed activity affect or be located in, on, or adjacent to any of the following: YES NO
- a. State designated freshwater or tidal wetland? (44)
 - b. Federally designated flood and/or state designated erosion hazard area? (11, 12, 17,)
 - c. State designated significant fish and/or wildlife habitat? (7)
 - d. State designated significant scenic resource or area? (24)
 - e. State designated important agricultural lands? (26)
 - f. Beach, dune or barrier island? (12)
 - g. Major ports of Albany, Buffalo, Ogdensburg, Oswego or New York? (3)
 - h. State, county, or local park? (19, 20)
 - i. Historic resource listed on the National or State Register of Historic Places? (23)

3. Will the proposed activity require any of the following: YES NO
- a. Waterfront site? (2, 21, 22)
 - b. Provision of new public services or infrastructure in undeveloped or sparsely populated sections of the coastal area? (5)
 - c. Construction or reconstruction of a flood or erosion control structure? (13, 14, 16)
 - d. State water quality permit or certification? (30, 38, 40)
 - e. State air quality permit or certification? (41, 43)

4. Will the proposed activity occur within and/or affect an area covered by a State approved local waterfront revitalization program? (see policies in local program document)

D. ADDITIONAL STEPS

1. If all of the questions in Section C are answered "NO", then the applicant or agency shall complete Section E and submit the documentation required by Section F.
2. If any of the questions in Section C are answered "YES", then the applicant or agent is advised to consult the CMP, or where appropriate, the local waterfront revitalization program document*. The proposed activity must be analyzed in more detail with respect to the applicable state or local coastal policies. On a separate page(s), the applicant or agent shall: (a) identify, by their policy numbers, which coastal policies are affected by the activity, (b) briefly assess the effects of the activity upon the policy; and, (c) state how the activity is consistent with each policy. Following the completion of this written assessment, the applicant or agency shall complete Section E and submit the documentation required by Section F.

E. CERTIFICATION

The applicant or agent must certify that the proposed activity is consistent with the State's CMP or the approved local waterfront revitalization program, as appropriate. If this certification cannot be made, the proposed activity shall not be undertaken. If this certification can be made, complete this Section.

"The proposed activity complies with New York State's approved Coastal Management Program, or with the applicable approved local waterfront revitalization program, and will be conducted in a manner consistent with such program."

Contact
Applicant/Agent's Name: Marc Helman

Address: 2 Gateway Center, 14th Floor, Newark, NJ 07102

Telephone: Area Code (732) 565 - 7564

Contact
Applicant/Agent's Signature: Marc Helman Date: 25 May 2010

F. SUBMISSION REQUIREMENTS

1. The applicant or agent shall submit the following documents to the New York State Department of State, Office of Coastal, Local Government and Community Sustainability, Attn: Consistency Review Unit, 1 Commerce Plaza - Suite 1010, Albany, New York 12231.
 - a. Copy of original signed form.
 - b. Copy of the completed federal agency application.
 - c. Other available information which would support the certification of consistency.
2. The applicant or agent shall also submit a copy of this completed form along with his/her application to the federal agency.
3. If there are any questions regarding the submission of this form, contact the Department of State at (518) 474-6000.

*These state and local documents are available for inspection at the offices of many federal agencies, Department of environmental Conservation and Department of State regional offices, and the appropriate regional and county planning agencies. Local program documents are also available for inspection at the offices of the appropriate local government.

NEW YORK STATE DEPARTMENT OF STATE COASTAL ZONE MANAGEMENT PROGRAM

Coastal Assessment Responses

2. Will the proposed activity affect or be located in, on adjacent to any of the following:
c. State designated significant fish and/or wildlife habitat?

The project site (John F. Kennedy International Airport) is adjacent to the Jamaica Bay Significant Coastal Fish and Wildlife Habitat. However, the proposed work site is located in an urbanized setting more than 1 mile from the boundary of the habitat and will not affect the habitat. Therefore, the proposed project is consistent with Policy 7.

4. Will the proposed activity occur within and/or affect an area covered by a State approved local waterfront revitalization program?

The proposed project will occur in New York City, which has an approved waterfront revitalization program. A copy of the New York City Waterfront Revitalization Program Consistency Assessment Form and responses to Policy Questions has been provided with this request of concurrence.

The proposed project is consistent with New York City's program. Therefore, the project would also be consistent with New York State's program, as there are no conflicts with any of the state policies.



THE PORT AUTHORITY OF NY & NJ

Engineering Department

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

May 25, 2010

Wilbur Woods
New York City Department of City Planning
Waterfront Section
22 Reade Street
New York, NY 10007-1216

**RE: JOHN F. KENNEDY INTERNATIONAL AIRPORT – JAMAICA, NY:
CHANGE IN AIRPORT LAYOUT PLAN: TERMINAL EXPANSIONS,
TERMINAL DEMOLITION, TERMINAL CONNECTOR, FUEL FARM
RELOCATION**

Dear Mr. Zappieri:

The Port Authority of NY & NJ (Port Authority) and Delta Airlines are proposing to undertake a variety of improvements to facilities at the John F. Kennedy International Airport (JFK), located near Jamaica Bay, at Jamaica, Borough of Queens, Queens County, New York. The work will require Federal Aviation Administration (FAA) approval because of changes in the airport layout plan.

The work involves an expansion of the existing Terminal 4 by the addition of a new nine (9) gate concourse and additional passenger processing facilities, the demolition of the obsolete Terminal 3 and conversion of the space for use as an airplane parking, the expansion of Terminal 8 by the addition of a new three (3) gate concourse and new passenger processing facilities to accommodate airlines displaced from Terminal 4, and the construction of a post-security connector between Terminals 2 and 4 to facilitate passenger movement between the terminals by providing a shorter, quicker, more convenient connection without requiring passengers to undergo additional security screening.

As noted previously, the proposed project requires a change in the airport layout plan that must be approved by the FAA. The Port Authority has reviewed the subject project in light of the New York City Waterfront Revitalization Program (NYCWRP) coastal zone policies and the New York State Department of State (NYS DOS) coastal zone policies and determined that there would be no foreseeable adverse effects on coastal resources from the proposed work as it would be undertaken at locations in the airport removed from the shoreline.

*Two Gateway Center
Newark, NJ 07102*



THE PORT AUTHORITY OF NY & NJ

Enclosed are 2 drawings depicting the existing terminal layout and the proposed work and changes to the airport layout plan, as well as completed Federal Consistency Assessment Form (FCAF) and New York City Waterfront Revitalization Program Consistency Assessment Form (NYCWRPCAF) to assist in your review of the proposed project.

The project site is located within a developed area of the airport that is inland of the shoreline. Therefore, the work will not require permits or approvals from the U.S. Army Corps of Engineers. As it is anticipated that the project will involve soil disturbance of greater than 1 acre, a Storm Water Pollution Prevention Plan will be prepared for submission to the New York State Department of Environmental Conservation.

Thank you for your assistance in this matter. If you have 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
Supervisor, Permits and Governmental Approvals
Environmental Engineering Unit

Enclosures:

- 1) Project Drawings
- 2) NYC WRPCAF
- 3) FCAF

cc: Jeff Zappieri, NYSDOS

For Internal Use Only:

WRP no. _____

Date Received: _____

DOS no. _____

NEW YORK CITY WATERFRONT REVITALIZATION PROGRAM Consistency Assessment Form

Proposed actions that are subject to CEQR, ULURP or other local, state or federal discretionary review procedures, and that are within New York City's designated coastal zone, must be reviewed and assessed for their consistency with the *New York City Waterfront Revitalization Program (WRP)*. The WRP was adopted as a 197-a Plan by the Council of the City of New York on October 13, 1999, and subsequently approved by the New York State Department of State with the concurrence of the United States Department of Commerce pursuant to applicable state and federal law, including the Waterfront Revitalization of Coastal Areas and Inland Waterways Act. As a result of these approvals, state and federal discretionary actions within the city's coastal zone must be consistent to the maximum extent practicable with the WRP policies and the city must be given the opportunity to comment on all state and federal projects within its coastal zone.

This form is intended to assist an applicant in certifying that the proposed activity is consistent with the WRP. It should be completed when the local, state, or federal application is prepared. The completed form and accompanying information will be used by the New York State Department of State, other state agencies or the New York City Department of City Planning in their review of the applicant's certification of consistency.

A. APPLICANT

1. Name: The Port Authority of New York & New Jersey ATTN: Dr. Marc Helman
2. Address: 2 Gateway Center, 14th Floor, Newark, NJ 07102
3. Telephone: 973 565 7564 Fax: 973 565 7649 E-mail: mhelman@panynj.gov
4. Project site owner: The Port Authority of New York & New Jersey

B. PROPOSED ACTIVITY

1. Brief description of activity:
Terminal 4 - add 9 gate concourse, add passenger processing facilities, add post-security connector to Terminal 2, relocate fuel farm. Terminal 3 - demolish [terminal is obsolete], convert space for airplane parking. Terminal 8 - add 3 gate concourse, add passenger processing facilities.
2. Purpose of activity:
The project would allow more modern facilities to be constructed to facilitate passenger travel [expansion of Terminals 4 & 8, connector from Terminal 2 to Terminal 4]. The project involves demolition of an obsolete facility [Terminal 3] that no longer effectively serves passenger and airline needs to create space for airplane parking for expanded Terminal 4.
3. Location of activity: (street address/borough or site description):
John F. Kennedy International Airport
Borough of Queens, Queens County
Jamaica, New York 11430

Proposed Activity Cont'd

4. If a federal or state permit or license was issued or is required for the proposed activity, identify the permit type(s), the authorizing agency and provide the application or permit number(s), if known:

Federal Aviation Administration approval of Change in Airport Layout Plan.
Storm Water Pollution Prevention Plan to be submitted to New York State Department of Environmental Conservation.

5. Is federal or state funding being used to finance the project? If so, please identify the funding source(s).

No

6. Will the proposed project require the preparation of an environmental impact statement?

Yes _____ No ✓ If yes, identify Lead Agency:

7. Identify city discretionary actions, such as a zoning amendment or adoption of an urban renewal plan, required for the proposed project.

N/A

C. COASTAL ASSESSMENT

Location Questions:	Yes	No
1. Is the project site on the waterfront or at the water's edge?	_____	<u>✓</u>
2. Does the proposed project require a waterfront site?	_____	<u>✓</u>
3. Would the action result in a physical alteration to a waterfront site, including land along the shoreline, land underwater, or coastal waters?	_____	<u>✓</u>
Policy Questions	Yes	No

The following questions represent, in a broad sense, the policies of the WRP. Numbers in parentheses after each question indicate the policy or policies addressed by the question. The new Waterfront Revitalization Program offers detailed explanations of the policies, including criteria for consistency determinations.

Check either "Yes" or "No" for each of the following questions. For all "yes" responses, provide an attachment assessing the effects of the proposed activity on the relevant policies or standards. Explain how the action would be consistent with the goals of those policies and standards.

4. Will the proposed project result in revitalization or redevelopment of a deteriorated or under-used waterfront site? (1)	_____	<u>✓</u>
5. Is the project site appropriate for residential or commercial redevelopment? (1.1)	_____	<u>✓</u>
6. Will the action result in a change in scale or character of a neighborhood? (1.2)	_____	<u>✓</u>

Policy Questions cont'd

	Yes	No
7. Will the proposed activity require provision of new public services or infrastructure in undeveloped or sparsely populated sections of the coastal area? (1.3)	_____	✓ _____
8. Is the action located in one of the designated Significant Maritime and Industrial Areas (SMIA): South Bronx, Newtown Creek, Brooklyn Navy Yard, Red Hook, Sunset Park, or Staten Island? (2)	_____	✓ _____
9. Are there any waterfront structures, such as piers, docks, bulkheads or wharves, located on the project sites? (2)	_____	✓ _____
10. Would the action involve the siting or construction of a facility essential to the generation or transmission of energy, or a natural gas facility, or would it develop new energy resources? (2.1)	_____	✓ _____
11. Does the action involve the siting of a working waterfront use outside of a SMIA? (2.2)	_____	✓ _____
12. Does the proposed project involve infrastructure improvement, such as construction or repair of piers, docks, or bulkheads? (2.3, 3.2)	_____	✓ _____
13. Would the action involve mining, dredging, or dredge disposal, or placement of dredged or fill materials in coastal waters? (2.3, 3.1, 4, 5.3, 6.3)	_____	✓ _____
14. Would the action be located in a commercial or recreational boating center, such as City Island, Sheepshead Bay or Great Kills or an area devoted to water-dependent transportation? (3)	_____	✓ _____
15. Would the proposed project have an adverse effect upon the land or water uses within a commercial or recreation boating center or water-dependent transportation center? (3.1)	_____	✓ _____
16. Would the proposed project create any conflicts between commercial and recreational boating? (3.2)	_____	✓ _____
17. Does the proposed project involve any boating activity that would have an impact on the aquatic environment or surrounding land and water uses? (3.3)	_____	✓ _____
18. Is the action located in one of the designated Special Natural Waterfront Areas (SNWA): Long Island Sound- East River, Jamaica Bay, or Northwest Staten Island? (4 and 9.2)	_____	✓ _____
19. Is the project site in or adjacent to a Significant Coastal Fish and Wildlife Habitat? (4.1)	✓ _____	_____
20. Is the site located within or adjacent to a Recognized Ecological Complex: South Shore of Staten Island or Riverdale Natural Area District? (4.1 and 9.2)	_____	✓ _____
21. Would the action involve any activity in or near a tidal or freshwater wetland? (4.2)	_____	✓ _____
22. Does the project site contain a rare ecological community or would the proposed project affect a vulnerable plant, fish, or wildlife species? (4.3)	_____	✓ _____
23. Would the action have any effects on commercial or recreational use of fish resources? (4.4)	_____	✓ _____
24. Would the proposed project in any way affect the water quality classification of nearby waters or be unable to be consistent with that classification? (5)	_____	✓ _____
25. Would the action result in any direct or indirect discharges, including toxins, hazardous substances, or other pollutants, effluent, or waste, into any waterbody? (5.1)	_____	✓ _____
26. Would the action result in the draining of stormwater runoff or sewer overflows into coastal waters? (5.1)	_____	✓ _____
27. Will any activity associated with the project generate nonpoint source pollution? (5.2)	_____	✓ _____
28. Would the action cause violations of the National or State air quality standards? (5.2)	_____	✓ _____

Policy Questions cont'd

Yes No

29. Would the action result in significant amounts of acid rain precursors (nitrates and sulfates)? (5.2C)	_____	✓
30. Will the project involve the excavation or placing of fill in or near navigable waters, marshes, estuaries, tidal marshes or other wetlands? (5.3)	_____	✓
31. Would the proposed action have any effects on surface or ground water supplies? (5.4)	_____	✓
32. Would the action result in any activities within a federally designated flood hazard area or state-designated erosion hazards area? (6)	_____	✓
33. Would the action result in any construction activities that would lead to erosion? (6)	_____	✓
34. Would the action involve construction or reconstruction of a flood or erosion control structure? (6.1)	_____	✓
35. Would the action involve any new or increased activity on or near any beach, dune, barrier island, or bluff? (6.1)	_____	✓
36. Does the proposed project involve use of public funds for flood prevention or erosion control? (6.2)	_____	✓
37. Would the proposed project affect a non-renewable source of sand ? (6.3)	_____	✓
38. Would the action result in shipping, handling, or storing of solid wastes, hazardous materials, or other pollutants? (7)	_____	✓
39. Would the action affect any sites that have been used as landfills? (7.1)	_____	✓
40. Would the action result in development of a site that may contain contamination or that has a history of underground fuel tanks, oil spills, or other form or petroleum product use or storage? (7.2)	_____	✓
41. Will the proposed activity result in any transport, storage, treatment, or disposal of solid wastes or hazardous materials, or the siting of a solid or hazardous waste facility? (7.3)	_____	✓
42. Would the action result in a reduction of existing or required access to or along coastal waters, public access areas, or public parks or open spaces? (8)	_____	✓
43. Will the proposed project affect or be located in, on, or adjacent to any federal, state, or city park or other land in public ownership protected for open space preservation? (8)	✓	_____
44. Would the action result in the provision of open space without provision for its maintenance? (8.1)	_____	✓
45. Would the action result in any development along the shoreline but NOT include new water-enhanced or water-dependent recreational space? (8.2)	_____	✓
46. Will the proposed project impede visual access to coastal lands, waters and open space? (8.3)	_____	✓
47. Does the proposed project involve publicly owned or acquired land that could accommodate waterfront open space or recreation? (8.4)	_____	✓
48. Does the project site involve lands or waters held in public trust by the state or city? (8.5)	_____	✓
49. Would the action affect natural or built resources that contribute to the scenic quality of a coastal area? (9)	_____	✓
50. Does the site currently include elements that degrade the area's scenic quality or block views to the water? (9.1)	_____	✓

Policy Questions cont'd

Yes No

51. Would the proposed action have a significant adverse impact on historic, archeological, or cultural resources? (10)

_____ ✓

52. Will the proposed activity affect or be located in, on, or adjacent to an historic resource listed on the National or State Register of Historic Places, or designated as a landmark by the City of New York? (10)

_____ ✓

D. CERTIFICATION

The applicant or agent must certify that the proposed activity is consistent with New York City's Waterfront Revitalization Program, pursuant to the New York State Coastal Management Program. If this certification cannot be made, the proposed activity shall not be undertaken. If the certification can be made, complete this section.

"The proposed activity complies with New York State's Coastal Management Program as expressed in New York City's approved Local Waterfront Revitalization Program, pursuant to New York State's Coastal Management Program, and will be conducted in a manner consistent with such program."

Contact
Applicant/Agent Name: Marc Helman

Address: 2 Gateway Center, 14th Floor

Newark, NJ 07102 Telephone 973 565 7564

Contact
Applicant/Agent Signature: *Marc Helman* Date: 25 May 2010

NEW YORK CITY WATERFRONT REVITALIZATION PROGRAM

Policy Question Responses

Policy Question 19 (Policy 4.1)

Is the project in or adjacent to a Significant Coastal Fish and Wildlife Habitat?

The project site (John F. Kennedy International Airport) is adjacent to the Jamaica Bay Significant Coastal Fish and Wildlife Habitat. However, the proposed work site is located in an urbanized setting more than 1 mile from the boundary of the habitat and will not affect the habitat. Therefore, the proposed project is consistent with Policy 4.1.

Policy Question 43 (Policy 8)

Will the proposed project affect or be located in, on, or adjacent to any federal, state, or city park or other land in public ownership protected for open space preservation?

The project site (John F. Kennedy International Airport) is adjacent to the Gateway National Park. However, the proposed work site is located more than 1 mile from the park boundary and the proposed project would not affect the use of the park. Therefore, the proposed project is consistent with Policy 8.



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

DAVID A. PATERSON
GOVERNOR

LORRAINE A. CORTÉS-VAZQUEZ
SECRETARY OF STATE

July 9, 2010

Mr. Marc Helman, Supervisor
Permits & Governmental Approvals
Environmental Engineering Unit
The Port Authority of NY & NJ
2 Gateway Center, 14th Floor
Newark, New Jersey 07102

Re: F-2010-0474
Federal Aviation Administration
The Port Authority of NY & NJ
Terminal expansions, demolition, connector and fuel farm
relocation
Borough of Queens, Queens County
General Concurrence

Dear Mr. Helman:

The Department of State received your Federal Consistency Assessment Form and consistency certification and supporting information for this proposal on May 28, 2010.

The Department of State has determined that this proposal meets the Department's general consistency concurrence criteria. Therefore, further review of the proposed activity by the Department of State, and the Department's concurrence with an individual consistency certification for the proposed activity, are not required.

This General Concurrence is without prejudice to and does not obviate the need to obtain all other applicable licenses, permits, other forms of authorization or approval that may be required pursuant to existing State statutes.

When communicating with us regarding this matter, please contact us at (518) 474-6000 and refer to our file #F-2010-0474.

Sincerely,

Jeffrey Zappier
Supervisor, Consistency Review Unit
Office of Coastal, Local Government
and Community Sustainability

JZ/wf/dc

cc: COE/New York District – Stacey Jensen
DEC/Region 2 – John Cryan

Appendix B



THE PORT AUTHORITY OF NY & NJ

JOHN F. KENNEDY INTERNATIONAL AIRPORT DELTA REDEVELOPMENT

Excerpt from

Traffic Impact Study Draft Report

Prepared by



THE PORT AUTHORITY OF NY & NJ

Engineering Department
Engineering Design Division
Traffic Engineering

In Association With

Eng-Wong, Taub & Associates

April 22, 2010

DRAFT

II. Scenario 2: Traffic Impacts on the Blue, Green, and Red Quadrants

Executive Summary

The following documents the traffic impacts that the proposed Delta Airlines Redevelopment Plan known as Scenario 2 will have on the Green, Blue, and Red Quadrant roadway networks of John F. Kennedy International Airport (JFK). This plan proposes to consolidate Delta Airlines domestic flights to Terminal 2 in the Green Quadrant and relocate the international flights to Terminal 4 in the Blue Quadrant. In order to accommodate the Delta international flights, several International Air Terminal (IAT) flights will be relocated from Terminal 4 to Terminal 8 in the Red Quadrant. Under this scenario, Terminal 1 remains unchanged, and Terminal 3 will be demolished.

The two flight schedules below list the flights that will operate out of Terminals 2, 4, and 8 under Scenario 2 and represent a typical day. All traffic volume projections used in this study were derived from these flight schedules.

- **Delta and KLM 16 Gates** from March 26, 2009. Referred in this report as flight schedule 2012(3), and
- **IAT Typical Day with Live Hardstands** from May 14, 2009. Referred in this report as flight schedule 2012(4).

The 2012(3) flight schedule lists the domestic flights that are to operate from Terminal 2 and the international flights to be relocated to Terminal 4. The 2012(4) schedule shows the IAT flights associated with seven gates in Terminal 4 that will be transferred to Terminal 8, where they will be assigned an additional gate. Delta Airlines will then move its international flights to the seven gates vacated by IAT together with nine newly constructed gates. Terminal 4's new capacity will then be 25 gates, of which Delta Airlines will operate 16 gates, and IAT will operate the remaining nine gates.

For analysis purposes, the air passengers generated by these schedules were converted into vehicles in the roadways that were used to identify the traffic impacts to all signalized intersections, key roadway segments, frontages, and parking facilities in the Blue, Green, and Red Quadrants. The results of these analyses are summarized in three separate white papers: Part A evaluates traffic impacts on the Blue Quadrant, Part B evaluates traffic impacts on the Green Quadrant, and Part C evaluates traffic impacts on the Red Quadrant.

Overall, the signalized intersections, roadway segments, parking facilities and most terminal frontages of the Blue, Green, and Red Quadrants have adequate capacity to accommodate the traffic pattern changes resulting from the implementation of Scenario 2.

Terminal 4's Arriving Flights Outer frontage, which is currently utilized by private automobiles and black cars, is expected to operate at 98% of its capacity. Even though this condition can be considered acceptable, this frontage will provide a poor level of service to the airport patrons, and it is recommended that either:

- The vehicle designations of the Arriving Flights frontages are switched so that the private autos and black cars begin using the longer Inner frontage (inner curb) and the shuttles, mass transit (non-MTA), MTA buses, and other authorized vehicles are moved to the Outer frontage or
- The vehicle designations of the Arriving Flights frontages are switched and the MTA bus operations are removed from the Blue Quadrant.

The shuttles-only curb in the Arriving Flights Middle frontage of Terminal 8 is anticipated to operate at 128% of its capacity. To resolve this operational problem, the future shuttle volumes should be distributed to a portion of the adjacent upstream curb used by private autos and black cars in the Middle frontage to alleviate the congestion in the shuttles-only curb.

Scenario 2 is a feasible solution for the Blue, Green, and Red Quadrant roadway networks, only if an appropriate recommendation for the Arriving Flights frontages of Terminal 8 is followed.

II-A. Traffic Impacts on the Blue Quadrant

The following documents the traffic impacts on the Blue Quadrant resulting from the implementation of the Delta Airlines Redevelopment Plan known as Scenario 2. This plan calls for the expansion of Terminal 4 in the Blue Quadrant from its current capacity of 16 gates to a new capacity of 25 gates. The new terminal will dedicate nine gates to the airlines of its current tenant, International Air Terminal (IAT), which will have to relocate flights associated with seven gates to Terminal 8 in the Red Quadrant. The remaining 16 gates in the Blue Quadrant, including nine newly constructed ones will be dedicated to the international flights of Delta Airlines. All Delta domestic flights will be consolidated in Terminal 2 and Terminal 3 will be demolished.

The two flight schedules below list the flights that operate out of Terminals 2 and 4 under Scenario 2 and represent a typical day.

- **Delta and KLM 16 Gates** from March 26, 2009. Referred in this report as flight schedule 2012(3), and
- **IAT Typical Day with Live Hardstands** from May 14, 2009. Referred in this report as flight schedule 2012(4).

The international flights contained in the 2012(3) schedule are destined for the Blue Quadrant, while the domestic flights are to operate in Terminal 2 in the Green Quadrant. A portion of the 2012(4) schedule lists the IAT flights that will remain in Terminal 4. All traffic volume projections used in this study were derived from these flight schedules.

For analysis purposes, the air-passengers generated by these schedules were converted into vehicles on the roadway network by using field observed traffic patterns, estimated transfer rates, modal splits, and vehicle utilization factors. This conversion produced 24-hour vehicular volume profiles for each key movement in the roadway network that were used for the operational analyses of key land-side facilities, such as signalized intersections, roadway segments, terminal frontages, and the parking facility. This white paper summarizes the methodologies and results of these studies due to the relocation of Delta Airlines into the Blue Quadrant.

The results of the analyses indicate that under Scenario 2, all signalized intersections operate at Level-of-Service (LOS) C or better, all critical roadway segments leading into and out of the quadrant operate at LOS B or better, and the maximum occupancy rate for the Blue Parking facility, which is currently at 59% capacity, is projected to increase to 62% at the time of its peak parking demand.

The results of the terminal frontage analyses indicate that all frontages, with the exception of the Arriving Flights Outer frontage, have enough capacity to process the anticipated traffic demand. The Outer frontage, which is currently utilized by private automobiles and black cars (for-hire vehicles), is expected to operate close to capacity (CU = 98%) if the existing designated areas for various vehicle types are maintained. Even though this condition can be considered acceptable, this

frontage will provide a poor level of service to the airport patrons, and two options are recommended:

- **Arriving Flights Frontages Switched**- Autos and black cars currently using the Outer frontage are switched with vehicles using the inner curb of the Inner frontage (shuttles and mass transit [MTA and non-MTA]), or
- **Arriving Flights Frontages Switched and No MTA Buses**- Autos and black cars currently using the Outer frontage are switched with vehicles using the inner curb of the Inner frontage, and MTA buses are removed from the Blue Quadrant. A possible site for the relocated MTA buses is by the AirTrain station at Terminal 3. The frontage used by the MTA would then be allocated for autos and black cars.

Hence, Scenario 2 represents a viable option for the Blue Quadrant roadway network.

Introduction

This white paper summarizes the findings of a traffic study conducted for the Blue Quadrant roadway network associated with the expansion plan of Terminal 4 known as Scenario 2. This plan assumes that a portion of the future International Air Terminal (IAT) flights and all international Delta Airlines flights will operate out of an expanded Terminal 4, which will increase its number of gates from 16 to 25. Under this scenario, several IAT flights currently allocated to seven gates in Terminal 4 will be relocated to Terminal 8, while the remaining IAT flights will continue to use nine of the existing 16 gates of Terminal 4. Delta Airlines will relocate its international flights to the seven gates vacated by IAT plus nine newly constructed ones.

Future traffic volumes on the roadway network derived from the proposed plan were calculated and used to perform traffic operational analyses at signalized intersections, key roadway segments, terminal frontages, and the parking facility in the Blue Quadrant.

Operational Analysis Methodology

The methods presented in the Highway Capacity Manual, along with a Synchro-7 traffic simulation model developed for this study, and several specialized Excel spreadsheets were the main tools used to perform the operational analyses. The parameters describing the quality of service of each roadway facility evaluated in this study are: the average vehicular delay at signalized intersections, the Volume to Capacity (V/C) ratio at critical roadway segments, and the Capacity Utilization (CU) factor for the terminal frontages and the parking facility.

Vehicular Traffic Generated By the Flight Schedules

Traffic volume projections for all key movements in the roadway network under Scenario 2 were derived from the following two flight schedules:

- **Delta and KLM 16 Gates** from March 26, 2009. Referred in this report as flight schedule 2012(3), and
- **IAT Typical Day with Live Hardstands** from May 14, 2009. Referred in this report as flight schedule 2012(4).

The 2012(3) schedule lists the arrivals and departures of domestic and international flights of Delta Airlines plus four KLM flights. Under Scenario 2, only international flights were allocated to Terminal 4, and the domestic flights were consolidated in Terminal 2 (Green Quadrant). See **Figure IIA-A** in the Appendix for flight schedule 2012(3).

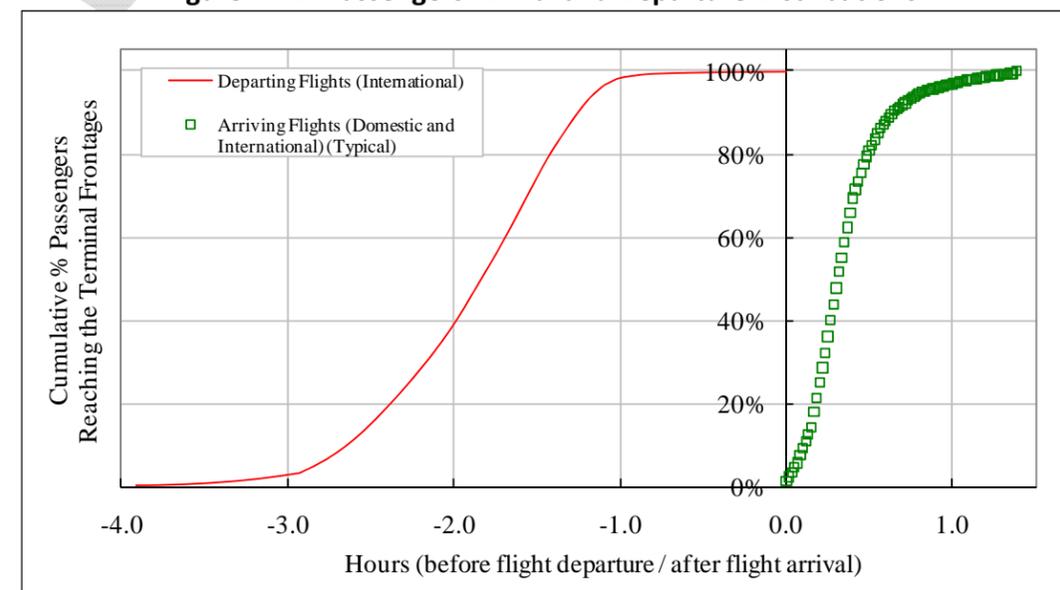
Future IAT flights are shown in flight schedule 2012(4). This schedule was divided into three main sections for the purpose of this study: Sections A and C will operate out of Terminal 4, and Section B will operate out of Terminal 8. Section A represents arrivals and departures of domestic and international flights, whereas Section C represents arrivals only. See **Figure IIA-B** in the Appendix for a working copy of flight schedule 2012(4).

A daily vehicular demand profile was calculated for each flight using the air-passenger capacity of each plane (expressed in number of seats) as a key parameter. The vehicular demand was grouped into two main categories: vehicles generated by arriving flights and vehicles generated by departing flights. The conversion from air-passenger capacity per plane to vehicle demand required the utilization of the following factors:

- Number of seats per plane,
- Load Factors- establishes the percentage utilization of each plane’s capacity (90% was used for this study),
- Passengers Arrival Distribution- describes how long after each flight arrival time will passengers start reaching the Arriving Flights frontage (see **Figure IIA-1**),
- Passengers Departure Distribution- describes how long before each flight departure time will passengers start reaching the Departing Flights frontage (see **Figure IIA- 1**),
- Passenger Transfer Rates- the percentage of passengers in transit for connecting flights,
- Modal Splits- the ratios by mode of transportation that are utilized by the air-passengers, and
- Vehicle Occupancy Rates- the average number of air-passengers using each vehicle type.

These profiles were then added (in 15-minute intervals) to produce a 24-hour total traffic demand profile by category (Arrivals and Departures). The factors used in the study are shown in **Table IIA-1**.

Figure IIA-1: Passengers Arrival and Departure Distributions



Source: Delta Airlines, JFK Redevelopment Concept Design Final Report, April 2008 (Departing Flights)

Table IIA-1: Factors Used to Convert From Air-Passengers to Traffic Demand

Flight Schedule	Vehicle Type	Departing Flights						Arriving Flights					
		Transfer Rates		Modal Split		Vehicle Occupancy		Transfer Rates		Modal Split		Vehicle Occupancy	
		Intern.	Dom.	Intern.	Dom.	Intern.	Dom.	Intern.	Dom.	Intern.	Dom.	Intern.	Dom.
2012(3) Future Delta plus KLM (*1)	Autos	54.5%	32.9%	31%	31%	1.99	1.99	54.4%	32.7%	31%	31%	1.53	1.53
	Taxis	54.5%	32.9%	24%	24%	2.07	2.07	54.4%	32.7%	24%	24%	1.42	1.42
	Black Cars	54.5%	32.9%	17%	17%	1.86	1.86	54.4%	32.7%	17%	17%	1.79	1.79
	Shuttle Buses	54.5%	32.9%	8%	8%	4.51	4.51	54.4%	32.7%	8%	8%	4.22	4.22
	Mass Transit	54.5%	32.9%	3%	3%	4.73	4.73	54.4%	32.7%	3%	3%	4.00	4.00
	Others (e.g., AirTrain)	54.5%	32.9%	17%	17%	-	-	54.4%	32.7%	17%	17%	-	-
2012(4) Future IAT (*2)	Autos	20.0%	20.0%	31%	31%	1.99	1.99	30.0%	30.0%	31%	31%	1.53	1.53
	Taxis	20.0%	20.0%	24%	24%	2.07	2.07	30.0%	30.0%	24%	24%	1.42	1.42
	Black Cars	20.0%	20.0%	17%	17%	1.86	1.86	30.0%	30.0%	17%	17%	1.79	1.79
	Shuttle Buses	20.0%	20.0%	8%	8%	4.51	4.51	30.0%	30.0%	8%	8%	4.22	4.22
	Mass Transit	20.0%	20.0%	3%	3%	4.73	4.73	30.0%	30.0%	3%	3%	4.00	4.00
	Others (e.g., AirTrain)	20.0%	20.0%	17%	17%	-	-	30.0%	30.0%	17%	17%	-	-

Source: (*1) Delta Airlines, JFK Redevelopment Concept Design Final Report, April 2008 (Departing Flights)
 (*2) JFK Abstract Week Traffic Surveys, August 2007

Figures IIA-2 and IIA-3 below show the resulting 24-hour volume profiles for air-passengers and vehicles generated by flight schedule 2012(3) and sections A and C of flight schedule 2012(4).

Figure IIA-2: Air-Passenger Profiles Generated by Each Flight Schedule

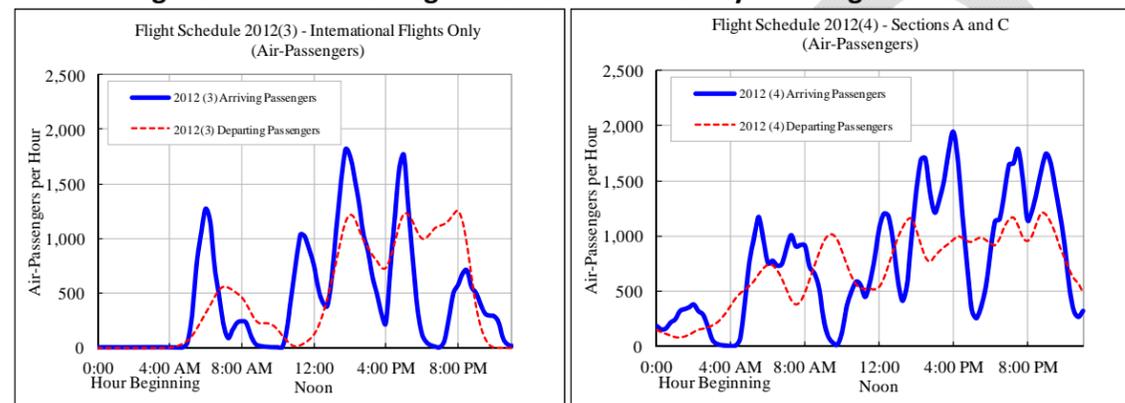
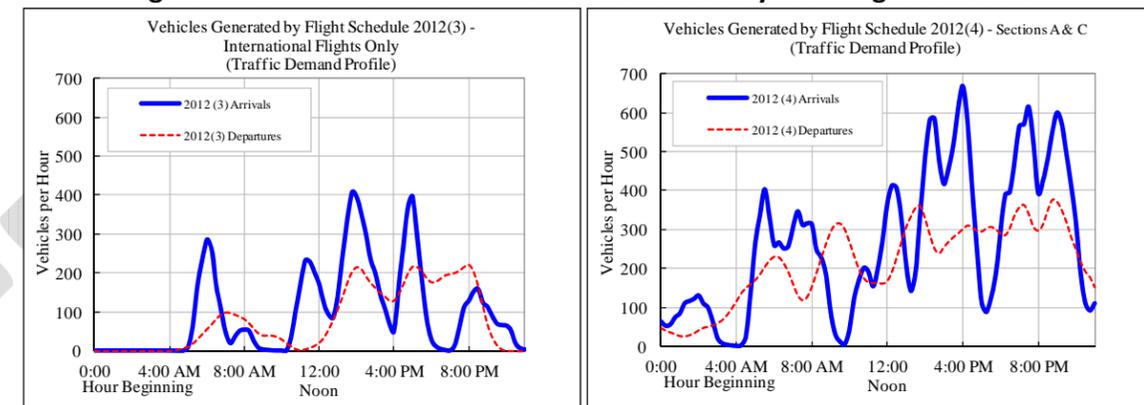


Figure IIA-3: Traffic Demand Profiles Generated by Each Flight Schedule



Once the vehicular demand profiles associated with the future flight schedules were calculated, they were assigned to the roadway network through a set of routes previously defined to reproduce traffic patterns observed in the field. For example, during the morning period, about 78% of the traffic entering the Blue Quadrant that was destined for the Departing Flights frontage used the Van Wyck Expressway (VWE), of which 26% went straight to parking and the remaining 74% went directly to the Departures level. The latter were then further broken down by vehicles heading toward the airport exit, recirculating back to the terminal frontage, parking, or doing a combination of the three. Leaving the quadrant, 56% of the traffic used the VWE and the remaining 44% used the JFK Expressway. These percentage splits were calculated and applied to the demand profiles in 15-minute intervals for the entire day to produce traffic volumes for each key vehicular movement in the roadway network.

The network volumes resulting from this assignment process represent the traffic conditions in the Blue Quadrant under Scenario 2 and were used in the operational analyses.

Overall Traffic Indicators

The total number of flights, passengers, and vehicular demand expected for the Blue Quadrant on a typical day under Scenario 2 are shown in **Table IIA-2**.

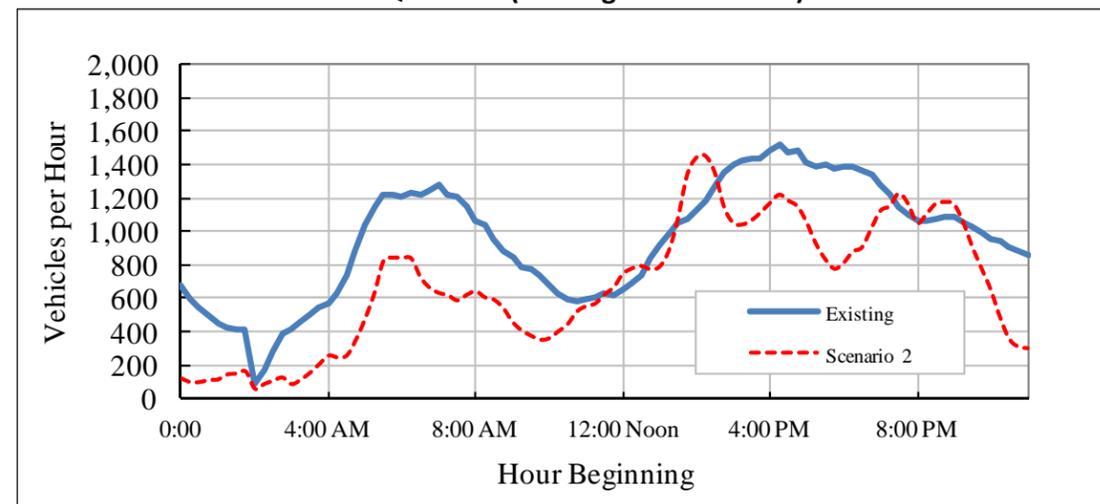
Table IIA-2: Daily Volumes Generated for the Blue Quadrant

Number of Daily:	Daily Volumes Generated by Flight Schedules 2012(3) and 2012(4)- Destined for the Blue Quadrant
Flights	237
Air-Passengers	55,030
Vehicles	15,454

-Air-Passengers produced include those connecting to other flights
 -Vehicles shown are destined for the curb

A comparison of the 24-hour traffic demand entering the quadrant was performed between the existing conditions and Scenario 2 and is presented in **Figure IIA-4**. The existing conditions have a daily demand of 22,818 vehicles, which is about 7,400 vehicles more than Scenario 2. The peak traffic demand for the existing conditions is about 1,500 vehicles per hour, which is about 70 vehicles per hour more than Scenario 2.

Figure IIA-4: Terminal 4 Traffic Demand Profile – Volumes Entering the Blue Quadrant (Existing vs. Scenario 2)



Two specific hours are critical for the Blue Quadrant analyses under Scenario 2 as they reflect the peak traffic demand on the roadways and terminal frontages. From 7:15 to 8:15 PM, the Departing Flights frontage peaks, while the roadway network as whole (system-wide) and the Arriving Flights frontages peak at 2:15 to 3:15 PM.

Tables IIA-3A through IIA- 4B summarize key traffic volumes routed in the Blue Quadrant during the two critical hours. They illustrate the general traffic patterns of vehicles bound for the terminal frontages, recirculation road, and/or parking facility.

Table IIA-3A: Key Traffic Volumes and Operational Characteristics During the System-wide and Arriving Flights Frontage Peak Hours (Scenario 2)

System-wide and Arriving Flights Frontage Peak Hour :		2:15 - 3:15 PM	
Destination	Traffic volume entering the quadrant	% Entering the quadrant (by Destination)	% Recirculating back to frontage and/or parking
Vehicles traveling straight to Parking	304	21%	-
Vehicles traveling to the Arriving Flights Frontages	735	51%	28%
Vehicles traveling to the Departing Flights Frontage	392	27%	19%
Total	1431	100%	

Table IIA-3B: Parking Volumes During the System-wide and Arriving Flights Frontage Peak Hours (Scenario 2)

System-wide and Arriving Flights Frontage Peak Hour :		2:15 - 3:15 PM
Destination	Number of vehicles entering the parking lot	% Entering the parking facility (by Destination)
Vehicles traveling straight to Parking	304	74%
Parking Vehicles using Arriving Flights Frontages	71	17%
Parking Vehicles using Departing Flights Frontage	33	8%
Total Vehicles Parking	408	100%

Table IIA-4A: Key Traffic Volumes and Operational Characteristics During the Departing Flights Frontage Peak Hour (Scenario 2)

Departing Flights Frontage Peak Hour :			7:15 - 8:15 PM
Destination	Traffic volume entering the quadrant	% Entering the quadrant (by Destination)	% Recirculating back to frontage and/or parking
Vehicles traveling straight to Parking	222	19%	-
Vehicles traveling to the Arriving Flights Frontages	469	41%	35%
Vehicles traveling to the Departing Flights Frontage	456	40%	28%
Total	1146	100%	

Traffic volumes used for the existing conditions analyses are based on data collected in the summer of 2007. The signalized intersections and roadway segment analyses were conducted during the system-wide peak hour (4:45 to 5:45 PM for the existing conditions and 2:15 to 3:15 PM for Scenario 2), while the frontage analyses were performed during each terminal frontage’s respective peak hour.

Signalized Intersections Analysis

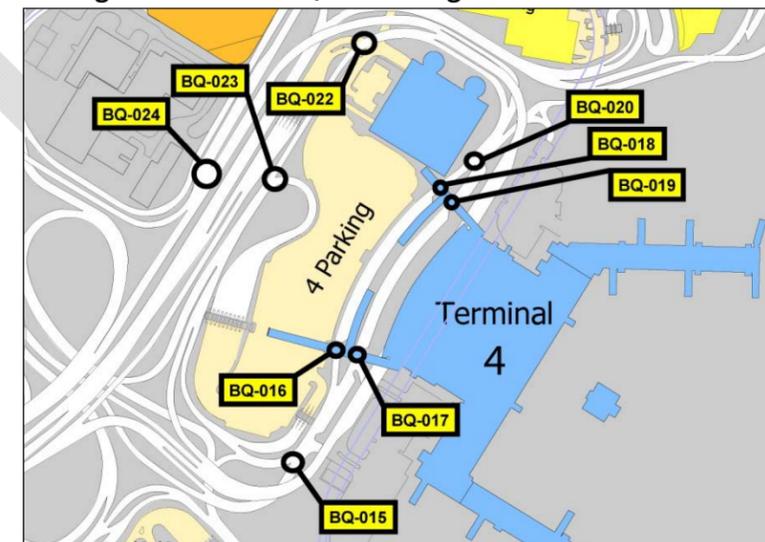
Traffic operational analyses for all signalized intersections were conducted using a Synchro-7 simulation model that was developed for the study area. Overall, nine intersections were analyzed, and their locations are shown in **Figure IIA-5**. They are rated in terms of their Level of Service (LOS), with LOS A having the best operating conditions and LOS F having the worst.

Since intersection BQ-024 is a critical location that processes traffic from both the Blue and Yellow quadrants, this intersection was analyzed during its own peak hour (from 4:45 to 5:45 PM for the existing conditions and 4:30 to 5:30 PM for Scenario 2).

Table IIA-4B: Parking Volumes During the Departing Flights Frontage Peak Hour (Scenario 2)

Departing Flights Frontage Peak Hour :			7:15 - 8:15 PM
Destination	Number of vehicles entering the parking lot	% Entering the parking facility (by Destination)	
Vehicles traveling straight to Parking	222	60%	
Parking Vehicles using Arriving Flights Frontages	64	17%	
Parking Vehicles using Departing Flights Frontage	83	23%	
Total Vehicles Parking	369	100%	

Figure IIA-5: Blue Quadrant Signalized Intersections



Traffic Analysis

This section describes the methodologies and main findings of the traffic operational analyses performed for the Blue Quadrant roadway network under Scenario 2. A comparison with the existing conditions was also conducted to better illustrate the traffic impacts. See **Figure IIA-C** in the Appendix for a Blue Quadrant map showing existing roadway and intersection configurations.

Existing Conditions

Under existing conditions, three signalized intersections, BQ-017, BQ-022, and BQ-024 operate at LOS C, while the rest operate at LOS B or better. Intersection BQ-024 experiences the worst operational characteristics with an average delay of about 31 seconds per vehicle, a Volume to Capacity (V/C) ratio (a measure of congestion where values over 1.0 indicate overcapacity conditions) of 0.89, and queues averaging about 350 feet for both approaches. For a complete LOS summary of the existing conditions, see **Table IIA-A** in the Appendix.

Scenario 2

Under Scenario 2, two signalized intersections, BQ-022 and BQ-024, operate at LOS C, while the rest operate at LOS B or better. Intersection BQ-024 is expected to have the highest V/C ratio at 0.81, a corresponding average delay of about 24 seconds per vehicle, and queues expected to be below 300 feet for both approaches (these fall within the available queuing space).

Even though the operational conditions for intersection BQ-024 are acceptable, two alternate configurations were also evaluated: three-lane approaches from both the Blue and Yellow Quadrants or a flyover. The flyover (as illustrated in **Figure IIA-F** in the Appendix) eliminates the signalized intersection, and its level of service is presented in the “Roadway Segment Analysis” section.

The addition of one extra lane on each approach (as depicted in **Figure IIA-E** in the Appendix) reduces the overall intersection delay to about 17 seconds per vehicle, the V/C ratio to 0.61, and the queue lengths to below 250 feet for both approaches. These results depend on the 2009 JetBlue operation in the Yellow Quadrant. For a complete LOS summary for Scenario 2, see **Table IIA-B** in the Appendix.

Roadway Segment Analysis

The level of service of the key roadway segments in the Blue Quadrant was calculated for the system-wide peak hour. All key roadway segments leading into and out of the quadrant, including the ramps on the flyover alternative, operate at LOS B or better during both the existing conditions and Scenario 2.

Terminal Frontage Analysis

Terminal 4 has three terminal frontages; one is a common frontage used by vehicles dropping off departing passengers, and the other two are used by vehicles picking up arriving passengers. The Departing Flights frontage has an available effective curb length of 1,080 feet, and the two Arriving Flights frontages have a combined available effective curb length of 2,030 feet. All curb

measurements exclude the curbs along pedestrian crossings. **Table IIA-5** summarizes the different terminal frontages and their total effective curb lengths.

Table IIA-5: Terminal Frontage Curb Lengths

Terminal Frontage		Total Effective Curb Length (ft)
Departures		1,080
Arrivals Inner	Inner Curb	540
	Outer Curb	570
	MTA Buses Curb	350
Arrivals Outer		570

The methodology employed for this analysis uses the Poisson distribution to calculate the minimum curb length required to accommodate a predetermined hourly demand volume. The following inputs are required:

- Total traffic volume destined for the terminal frontage during the peak hour,
- Traffic composition (by vehicle type),
- Average dwell times (by vehicle type), and
- Average curb length occupied by each vehicle type.

Listed in **Table IIA-6** are the dwell times and vehicle lengths used in the analysis. These values were field measured.

Table IIA-6: Dwell Times and Vehicle Lengths

Vehicle Type	Departing Flights Frontages		Arriving Flights Frontages	
	Dwell Times (min)	Vehicle Length plus gap (feet)	Dwell Times (min)	Vehicle Length plus gap (feet)
Autos	2.41	25	2.22	25
Taxis	1.28	25	1.60	25
Black Cars	1.70	25	2.32	25
Shuttle Buses	2.09	30	3.64	30
Mass Transit	2.59	40	2.59	40
MTA Buses	-	-	4.67	40
Others	2.00	30	2.00	30

The minimum curb length required for all frontages was calculated, and the resulting values were divided by the available curb lengths to determine the Capacity Utilization (CU) factors. CU percentages that are within the 90 – 100% range indicate an undesirable level of service for airport patrons, and any value greater than 100% indicate a frontage operating over its capacity and represents operational failure. The CU for both the inner and outer Arriving Flights frontages were calculated for the curb areas designated for each vehicle type, whereas the Departing Flights frontage was evaluated based on all vehicle types sharing a common frontage.

Existing Conditions

In 2007, the highest traffic volume (all vehicle types) entering the Departing Flights frontage was 628 vehicles in one hour, and took place from 3:00 to 4:00 PM. The minimum curb length required to accommodate this volume is 644 feet resulting in a CU factor of 60%.

The traffic volume entering the four Arriving frontages reached its peak from 5:30 to 6:30 PM with 875 vehicles. The Arriving Flights Outer frontage, which is currently utilized by private autos and black cars (for-hire vehicles), is fairly congested since it operates close to its capacity (CU of 98%). All of the other arrival frontages have enough capacity to process the traffic demand.

Scenario 2

Under this scenario, the highest traffic volume anticipated for the Departing Flights frontage is 503 vehicles per hour, which requires a minimum of 476 feet of curb and results in a CU factor of 44%. This occurs from 7:15 to 8:15 PM.

Traffic demand destined for the Arriving Flights frontages is anticipated to total 965 vehicles per hour during their peak hour (2:15 to 3:15 PM). These frontages were evaluated for the following three configurations:

- Existing Frontage Configuration- Vehicle types remain in their current respective designated areas / frontages
- Arriving Flights Frontages Switched- Autos and black cars currently using the Outer frontage are switched with vehicles using the inner curb of the Inner frontage (shuttles and mass transit [MTA and non-MTA])
- Arriving Flights Frontages Switched and No MTA Buses- Autos and black cars currently using the Outer frontage are switched with vehicles using the inner curb of the Inner frontage, and MTA buses are removed from the Blue Quadrant. A possible site for the relocated MTA buses is by the AirTrain station at Terminal 3. The frontage used by the MTA would then be allocated for autos and black cars

Under the existing frontage configuration, the Outer frontage is expected to operate close to capacity with a projected CU of 98%, while the Inner frontage (inner curb) is anticipated to operate with a CU of 49%. All other frontages would operate below capacity.

With the frontages switched, private autos and black cars would be relocated to the Inner frontage (inner curb), while shuttles, mass transit, and other authorized vehicles would be relocated to the Outer frontage. This results in the Outer frontage to operate under capacity, and the Inner frontage (inner curb) is expected to operate with a CU of 63%, which is an acceptable level of service to airport patrons.

The MTA buses may also be removed from the Blue Quadrant and relocated at another site in the central terminal area. One possible location would be by the AirTrain station at Terminal 3. The elimination of MTA bus operations with a switched frontage configuration would decrease the Capacity Utilization of the Outer frontage to 47%.

Table IIA-7 summarizes the curb length requirements for the Departing and Arriving Flights frontages under the existing conditions and the two frontage conditions evaluated under Scenario 2.

Table IIA-7: Terminal Frontage Analyses Results

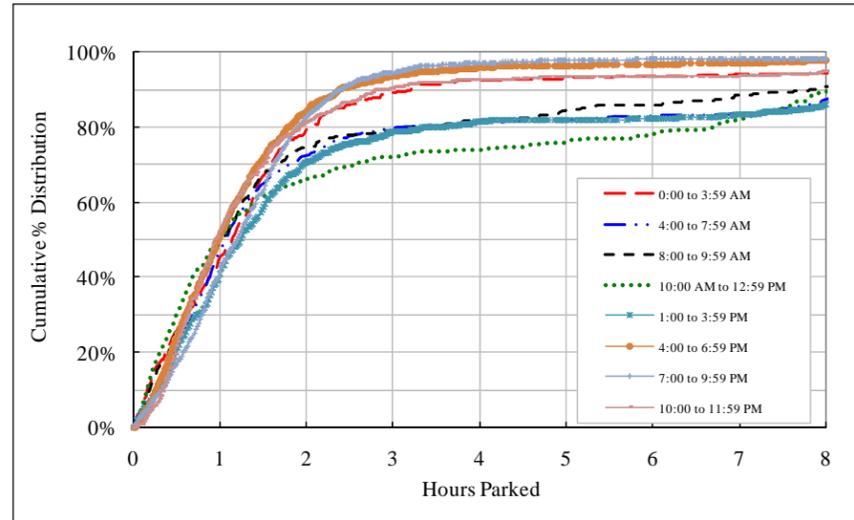
Terminal Frontage	Peak Hour	Vehicle Volumes During the Peak Hour						Curb Length (feet)		Capacity Utilization (%)	
		Autos and Black Cars	Taxis	Shuttles, and Mass Transit (Non-MTA)	MTA Buses	Others	Total	Minimum Curb Length Required	Available Curb Length		
EXISTING CONDITIONS											
Departing Flights Frontage (Common Frontage)	3:00 to 4:00 PM	497	35	64	-	32	628	644	1080	60%	
Arriving Flights Inner Frontage (Inner Curb)	5:30 to 6:30 PM	-	-	73	-	24	97	216	540	40%	
Arriving Flights Inner Frontage (Outer Curb)		-	197	-	-	-	197	196	570	34%	
Arriving Flights Inner Frontage (MTA Buses)		-	-	-	20	-	20	128	350	37%	
Arriving Flights Outer Frontage		561	-	-	-	-	561	560	570	98%	
SCENARIO 2 (with Existing Frontage Configuration)											
Departing Flights Frontage (Common Frontage)	7:15 - 8:15 PM	290	146	67	-	-	503	476	1080	44%	
Arriving Flights Inner Frontage (Inner Curb)	2:15 - 3:15 PM	-	-	108	-	-	108	266	540	49%	
Arriving Flights Inner Frontage (Outer Curb)		-	279	-	-	-	279	241	570	42%	
Arriving Flights Inner Frontage (MTA Buses)		-	-	-	20	-	20	128	350	37%	
Arriving Flights Outer Frontage		558	-	-	-	-	558	560	570	98%	
SCENARIO 2 (with Arriving Flights Frontages Switched)											
Departing Flights Frontage (Common Frontage)	7:15 - 8:15 PM	290	146	67	-	-	503	476	1080	44%	
Arriving Flights Inner Frontage (Inner Curb)*	2:15 - 3:15 PM	558	-	-	-	-	558	560	890	63%	
Arriving Flights Inner Frontage (Outer Curb)		-	279	-	-	-	279	241	570	42%	
Arriving Flights Outer Frontage (MTA Buses)		-	-	-	20	-	20	128	170	75%	
Arriving Flights Outer Frontage (Shuttles and Mass Transit [non-MTA])		-	-	-	108	-	-	108	266	400	67%
SCENARIO 2 (with Arriving Flights Frontages Switched, and No MTA Buses)											
Departing Flights Frontage (Common Frontage)	7:15 - 8:15 PM	290	146	67	-	-	503	476	1080	44%	
Arriving Flights Inner Frontage (Inner Curb)*	2:15 - 3:15 PM	558	-	-	-	-	558	560	890	63%	
Arriving Flights Inner Frontage (Outer Curb)		-	279	-	-	-	279	241	570	42%	
Arriving Flights Outer Frontage		-	-	-	108	-	-	108	266	570	47%

*Frontage capacity currently used for MTA buses is made available to Autos and Black Cars in the Inner Frontage (Inner Curb). The above analysis assumes that all departures HOVs go to the Departures Frontage.

Parking Analysis

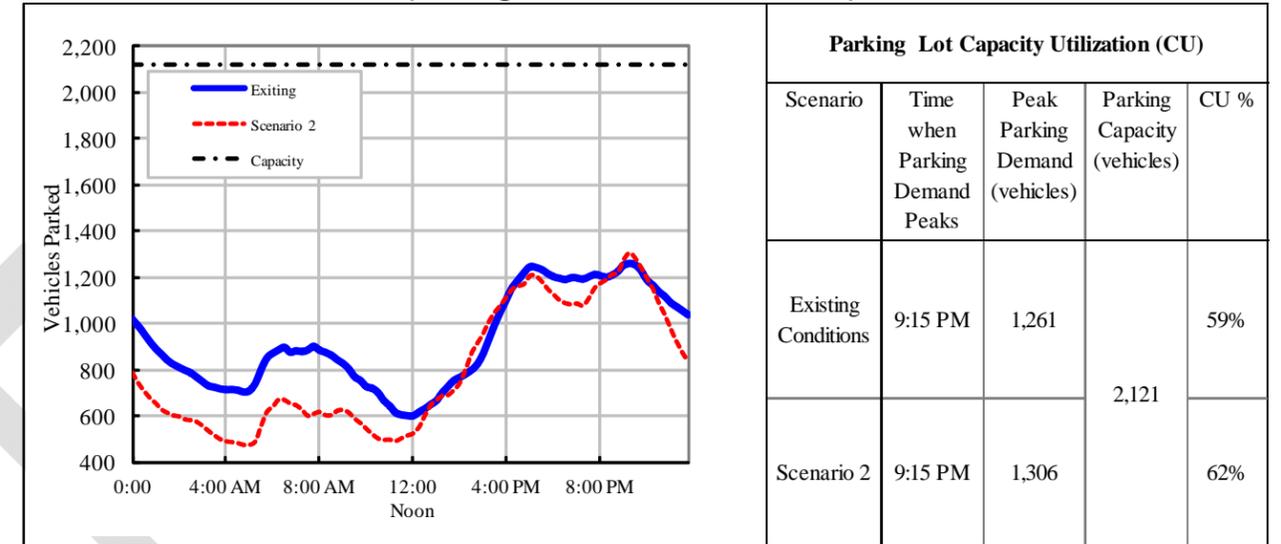
To evaluate the parking demand needs for the Blue Parking facility, a parking study was conducted. Parking data containing the exact time that vehicles entered and exited the parking facility were gathered and processed to produce eight typical “parked time” distributions throughout a typical day. This data was collected in March 2009, and **Figure IIA-6** shows the eight distributions used in the analysis representing eight distinct time periods. For example, for vehicles entering the parking facility between the hours of 10:00 AM and 12:59 PM, 74% remained parked for four hours or less.

Figure IIA-6: Parking Time Distributions for the Blue Parking Facility



These distributions were applied to the vehicular volumes entering the parking lot under Scenario 2 to determine the future 24-hour parking accumulation profile. **Figure IIA-7** below compares the 24-hour parking accumulation profiles of the existing conditions and Scenario 2.

Figure IIA-7: Blue Parking Facility Parking Accumulation Profiles (Existing Conditions and Scenario 2)



Existing Conditions

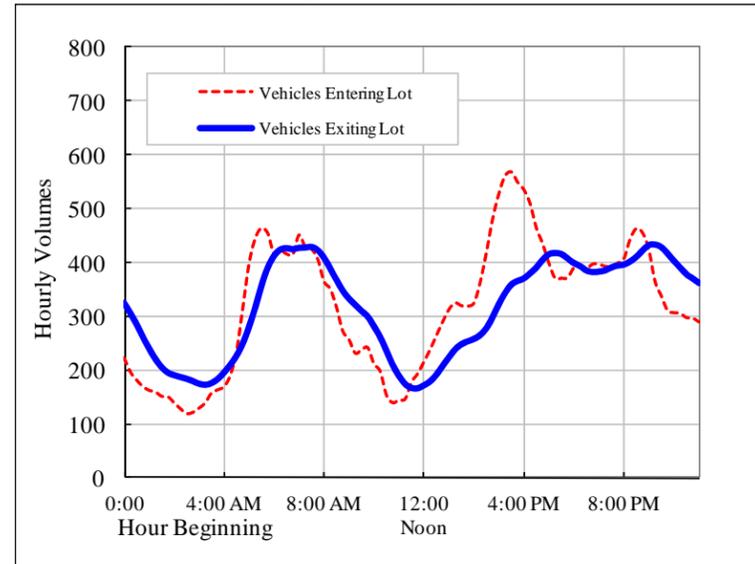
The demand for parking in the Blue Quadrant under existing conditions experiences a five-hour peak period starting at 5:00 PM. It reaches its absolute peak parking demand of 1,261 vehicles at 9:15 PM. There is also a three-hour morning peak period that occurs from around 6:00 AM to 9:00 AM. The morning peak parking demand, which occurs at 7:45 AM, is about 900 vehicles or 29% less than the evening peak. These demands were confirmed via field observations conducted from March 13 to March 23, 2009.

The Blue Parking facility, which has a parking capacity of 2,121 vehicles, is currently operating at 59% of its capacity. This is an acceptable Capacity Utilization percentage as it indicates great freedom in finding a vacant spot. Other pertinent information includes:

- Highest hourly volume entering the parking facility = 570 vehicles (occurs around 3:30 PM),
- Highest hourly volume exiting the parking facility = 430 vehicles (occurs around 7:30 AM, 5:30 PM, and 9:15 PM),
- During the system peak hour (4:45 to 5:45 PM), about 430 vehicles enter and 400 vehicles exit the parking facility.

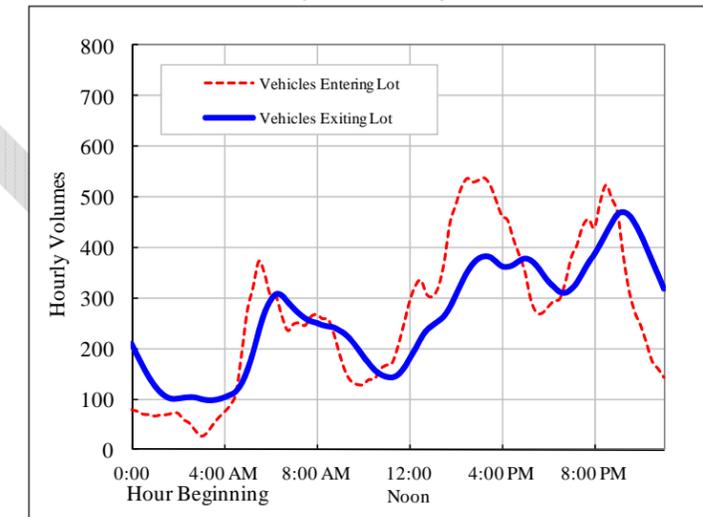
See **Figure IIA-8** for a graphical representation of vehicles entering and exiting the Blue Parking facility during a typical day.

Figure IIA-8: Hourly Volumes Entering and Exiting the Blue Parking Facility (Existing Conditions)



See **Figure IIA-9** for a graphical representation of vehicles entering and exiting the Blue Parking facility during a typical day.

Figure IIA-9: Hourly Volumes Entering and Exiting the Blue Parking Facility (Scenario 2)



Scenario 2

The 24-hour parking accumulation profile anticipated for the Blue Quadrant under Scenario 2 follows a similar trend to the existing conditions profile. The afternoon and evening peak period starts at 5:00 PM and lasts approximately five hours. During this time, the Blue Parking facility would reach its absolute peak demand of 1,306 vehicles at 9:15 PM. This is 45 vehicles more than the existing conditions’ peak demand. A morning peak period is anticipated from around 6:15 to 9:00 AM with a peak parking demand of about 670 vehicles, or 49% lower than the evening peak.

After reviewing this information, it can be concluded that the Blue Parking facility, which has a parking capacity of 2,121 vehicles, would operate at 62% of its capacity under Scenario 2. This is an acceptable Capacity Utilization percentage as it indicates relative freedom in finding a vacant spot. Other pertinent information includes:

- Highest hourly volume entering the parking facility = 536 vehicles (expected to occur around 3:15 PM),
- Highest hourly volume exiting the parking facility = 470 vehicles (expected to occur around 9:15 PM),
- During the system peak hour (2:15 to 3:15 PM), about 520 vehicles are anticipated to enter and 330 vehicles are expected exit the parking facility.

Conclusion

This white paper summarizes the methodologies and findings of a traffic study conducted for the Blue Quadrant in which critical land-side infrastructures were evaluated under Scenario 2 of the Delta Airlines Redevelopment Plan. These infrastructures included all signalized intersections, critical roadway segments, all terminal frontages, and the Blue Parking facility.

Under this scenario, Delta Airlines will relocate its international flights to Terminal 4 in the Blue Quadrant, and its domestic flights will be consolidated in Terminal 2 in the Green Quadrant. Terminal 3 will be demolished. A portion of the IAT flights currently operating out of Terminal 4 will be relocated to Terminal 8 in the Red Quadrant.

The results of the analyses suggest that Scenario 2 is a feasible option for the Blue Quadrant roadway network since it can effectively accommodate the new traffic patterns resulting from the proposed plan with acceptable levels of service to the airport patrons.

The Arriving Flights Outer frontage is expected to operate at 98% of its capacity if the current designated areas for the various vehicle types remain unchanged. Even though this frontage would operate under capacity, the level of service provided to the airport patrons is poor and can be significantly improved if the following two recommendations are followed: switching the vehicle designations of the Arriving Flights frontages so that private autos and black cars are relocated from the Outer frontage to the Inner frontage (inner curb), which has a longer curb length, while the shuttles and mass transit (both MTA and non-MTA) are moved to the Outer frontage, or switching the vehicle designations of the Arriving Flights frontages, as well as relocating the MTA bus operations out of Terminal 4.

SCENARIO II – PART A
APPENDIX

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Figure IIA-A: Flight Schedule 2012(3) – Only International Flights (“INT”) are Destined for the Blue Quadrant
Delta + KLM - 16 Gate Flight Schedule
 March 26, 2009

Airline	Flt #	Origin	Arriv. Time	A/C	Gate	Airline	Flt #	Dest.	Dep. Time	A/C	Gate
DL	120	INT	6:10	787	B27	DL	403	DOM	8:45	787	B27
DL	374	INT	14:55	757	B27						
DL	5389	DOM	15:55	73W	B27	DL	1003	DOM	17:00	73W	B27
						DL	449	INT	18:05	738	B27
DL	5495	DOM	18:45	73W	B27	DL	5539	DOM	19:35	73W	B27
KLM		INT	20:20	74M	B27	KLM		INT	22:55	74M	B27
DL	17	INT	6:40	77B	B29	DL	175	DOM	13:50	77B	B29
DL	81	INT	14:56	787	B29	DL	148	INT	17:05	787	B29
DL	1008	DOM	17:29	73W	B29	DL	5468	DOM	18:25	73W	B29
						DL	417	DOM	19:35	738	B29
DL	2	INT	20:10	787	B29	DL	121	INT	22:20	787	B29
DL	87	INT	6:05	77B	B31	DL	5117	DOM	10:00	77B	B31
DL	165	INT	14:35	757	B31						
DL	5114	DOM	15:35	757	B31	DL	480	DOM	16:10	757	B31
DL	414	DOM	17:48	738	B31	DL	611	DOM	18:50	738	B31
DL	428	DOM	19:12	738	B31	DL	1581	DOM	19:55	738	B31
DL	5368	DOM	21:33	73W	B31						
DL	8016	INT	6:00	77B	B28	DL	8045	INT	12:00	77B	B28
DL	6	INT	13:35	787	B28	DL	123	DOM	16:35	757	B28
DL	118	DOM	15:00	757	B28						
DL	53	DOM	17:00	757	B28	DL	2	DOM	18:40	757	B28
DL	932	DOM	17:58	757	B28	DL	5965	DOM	19:55	757	B28
DL	96	DOM	19:10	757	B28	DL	80	INT	21:05	787	B28
						DL	5	INT	22:00	787	B28
DL	430	DOM	7:07	738	B32	DL	429	DOM	8:50	738	B32
DL	5197	DOM	14:05	73W	B32	DL	5532	DOM	14:55	73W	B32
DL	550	DOM	15:20	757	B32	DL	5637	DOM	15:59	757	B32
DL	8045	INT	17:10	77B	B32						
DL	705	DOM	18:12	757	B32	DL	8003	INT	20:30	757	B32
						DL	86	INT	22:05	77B	B32
DL	8008	INT	6:00	757	B36						
DL	422	DOM	7:05	738	B36	DL	425	DOM	8:35	738	B36
						DL	535	DOM	9:55	757	B36
DL	4	INT	11:15	787	B36						
DL	8001	INT	12:30	76L	B36	DL	166	INT	17:05	76L	B36
DL	5980	DOM	18:59	77B	B36	DL	1	INT	20:30	787	B36
DL	344	INT	21:00	738	B36						
DL	9999	DOM	22:15	787	B34	DL	3	INT	8:55	787	B34
DL	1417	DOM	10:14	738	B34	DL	941	DOM	10:55	738	B34
DL	165	INT	11:45	76L	B34						
DL	30	DOM	14:57	738	B34	DL	97	DOM	13:25	738	B34
						DL	8009	INT	16:00	738	B34
DL	744	DOM	17:57	757	B34	DL	82	INT	17:35	76L	B34

DL	5983	DOM	18:50	76L	B34	DL	8010	INT	22:00	76L	B34
DL	408	DOM	6:25	738	B38	DL	419	DOM	8:25	738	B38
						DL	1001	DOM	10:55	738	B38
DL	127	INT	13:40	787	B38	DL	132	INT	15:50	787	B38
DL	94	DOM	16:11	738	B38	DL	79	DOM	17:05	738	B38
DL	136	DOM	17:35	76L	B38	DL	112	INT	19:45	76L	B38
						DL	96	INT	21:00	757	B38
DL	1000	DOM	21:29	738	B38						
DL	438	DOM	0:26	738	B37	DL	441	INT	8:00	738	B37
DL	5988	DOM	8:25	73W	B37	DL	494	INT	10:20	73W	B37
						DL	6139	DOM	11:40	73W	B37
DL	133	INT	14:20	787	B37	DL	30	INT	16:20	787	B37
DL	167	INT	17:20	76L	B37	DL	84	DOM	19:20	76L	B37
DL	402	DOM	20:03	738	B37	DL	1667	DOM	20:50	738	B37
DL	8040	INT	5:45	738	B40	DL	249	DOM	8:25	738	B40
DL	4995	DOM	9:30	757	B40	DL	1862	DOM	10:55	757	B40
DL	1861	DOM	11:37	757	B40						
DL	123	INT	13:30	757	B40	DL	8008	INT	14:45	757	B40
DL	8003	INT	15:30	757	B40	DL	375	INT	16:00	757	B40
KLM		INT	16:50	772	B40	KLM		INT	19:00	772	B40
DL	316	DOM	20:01	757	B40	DL	154	INT	22:10	757	B40
DL	410	DOM	22:31	738	B40						
DL	129	INT	6:30	76T	B41						
DL	436	DOM	7:42	738	B41	DL	8006	INT	10:00	738	B41
						DL	9999	DOM	11:05	738	B41
DL	175	INT	12:15	757	B41						
DL	89	INT	14:00	76L	B41						
DL	99	INT	17:10	76T	B41	DL	128	INT	15:50	76T	B41
DL	8006	INT	20:00	738	B41	DL	98	INT	19:15	76T	B41
DL	486	INT	22:05	738	B41	DL	423	DOM	20:45	738	B41
						DL	309	DOM	9:00	757	B42
						DL	5492	DOM	11:00	73W	B42
DL	8000	INT	11:30	76L	B42	DL	88	INT	16:15	76L	B42
DL	8002	INT	16:50	76L	B42	DL	140	INT	19:00	76L	B42
DL	566	INT	21:01	757	B42	DL	162	INT	22:25	757	B42
						DL	431	INT	9:00	757	B39
						DL	8005	INT	10:00	77B	B39
DL	119	INT	11:15	787	B39	DL	411	DOM	12:20	787	B39
DL	5507	DOM	12:43	73W	B39	DL	5356	DOM	13:50	73W	B39
DL	8005	INT	14:30	77B	B39						
DL	83	INT	15:30	76L	B39	DL	8001	INT	17:30	76L	B39
DL	5112	DOM	17:55	77B	B39						
						DL	8016	INT	20:00	77B	B39
						DL	16	INT	20:55	77B	B39
DL	493	INT	22:03	73W	B39						
						DL	307	INT	9:00	757	B47
						DL	5508	DOM	11:05	73W	B47
DL	97	INT	11:50	757	B47						
DL	450	INT	13:29	738	B47	DL	407	DOM	13:59	738	B47
DL	79	INT	14:20	76L	B47	DL	72	INT	17:00	76L	B47

DL	135	INT	17:30	76L	B47		DL	8002	INT	19:30	76L	B47
DL	314	INT	21:01	757	B47		DL	54	INT	22:55	757	B47
DL	8004	INT	8:09	77B	B43		DL	5246	DOM	8:30	77B	B43
DL	1858	DOM	6:30	738	B43		DL	8007	INT	10:00	738	B43
							DL	565	INT	11:15	757	B43
							DL	415	DOM	12:40	738	B43
DL	107	INT	13:55	76L	B43		DL	243	DOM	16:30	76L	B43
DL	85	INT	16:55	76L	B43		DL	160	INT	19:00	76L	B43
							DL	136	INT	20:50	76L	B43
							DL	102	INT	22:05	757	B43
DL	481	DOM	22:31	738	B43							
							DL	929	DOM	8:20	757	B45
DL	5505	DOM	10:32	73W	B45		DL	5248	DOM	11:15	73W	B45
DL	5982	DOM	11:50	73W	B45		DL	5017	DOM	12:50	73W	B45
DL	141	INT	13:55	76L	B45		DL	8000	INT	16:00	76L	B45
DL	73	INT	16:50	76L	B45		DL	106	INT	19:05	76L	B45
DL	102	DOM	20:15	77B	B45		DL	8004	INT	22:30	77B	B45
DL	782	DOM	23:19	738	B45							

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Figure IIA-B: Flight Schedule 2012(4) – Flights in Sections A and C are Destined for the Blue Quadrant (Working Copy)

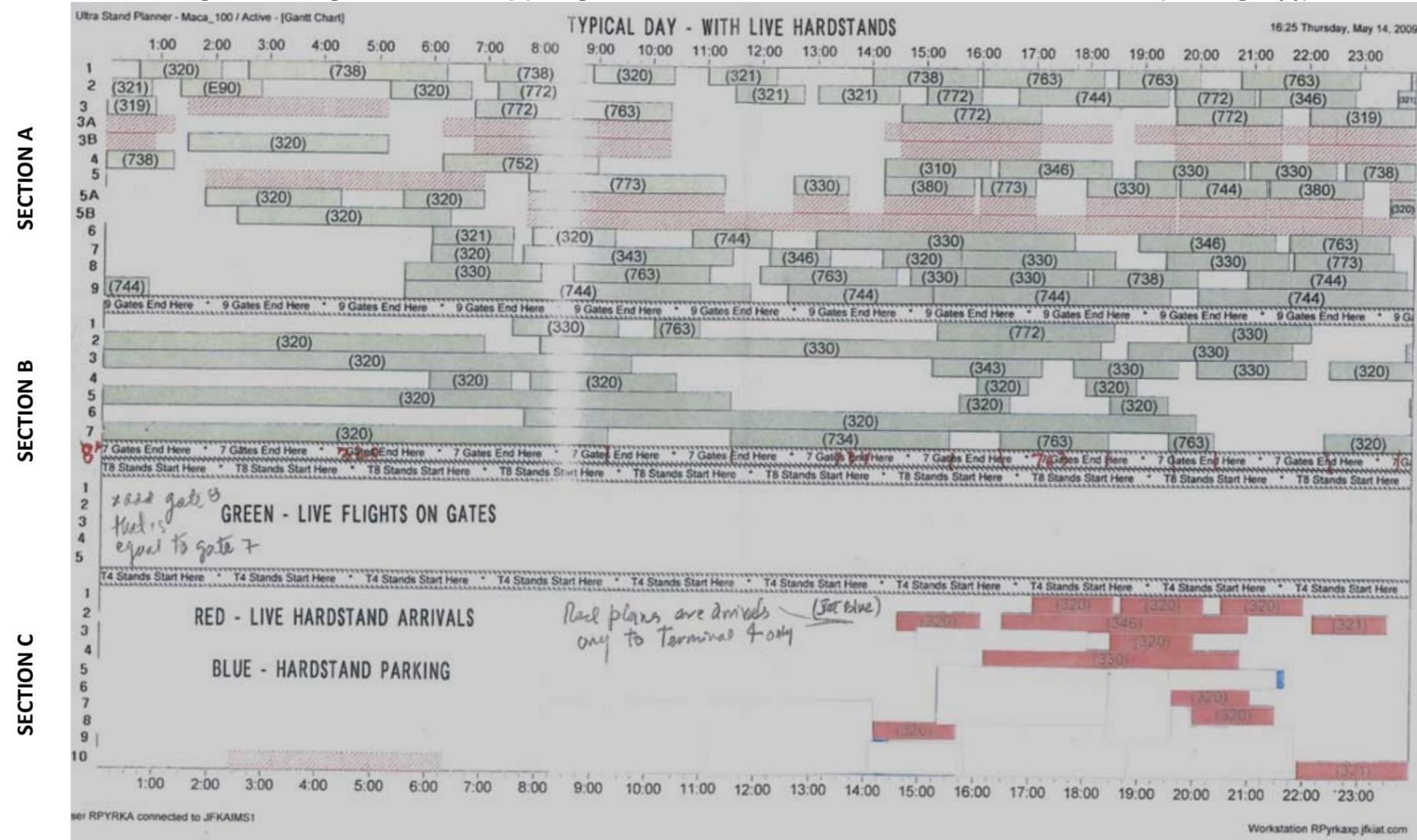


Figure IIA-C: Blue Quadrant Roadway Network (as of November 2009)

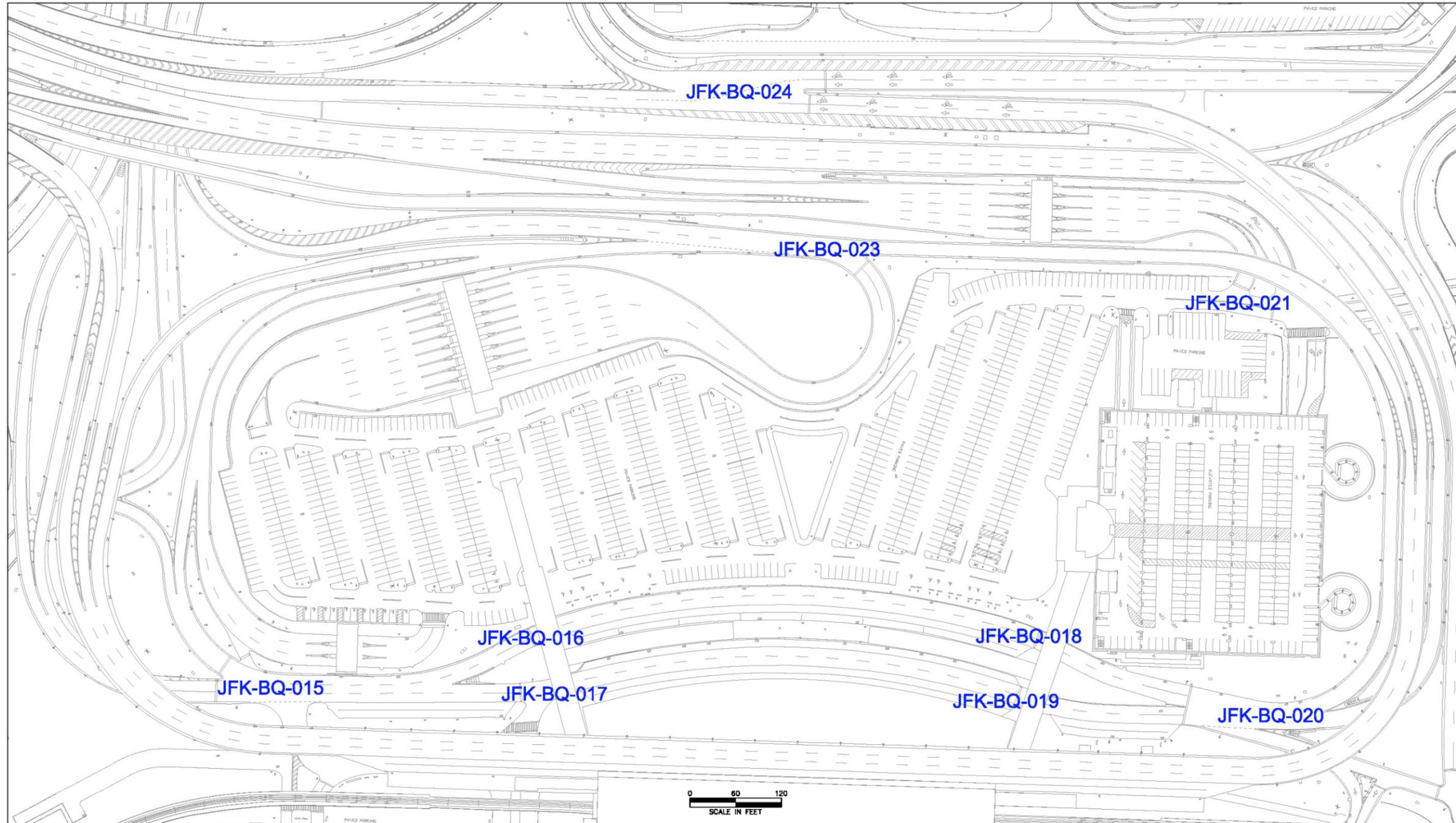


Figure IIA-D: Intersection BQ-024 Existing Intersection Configuration

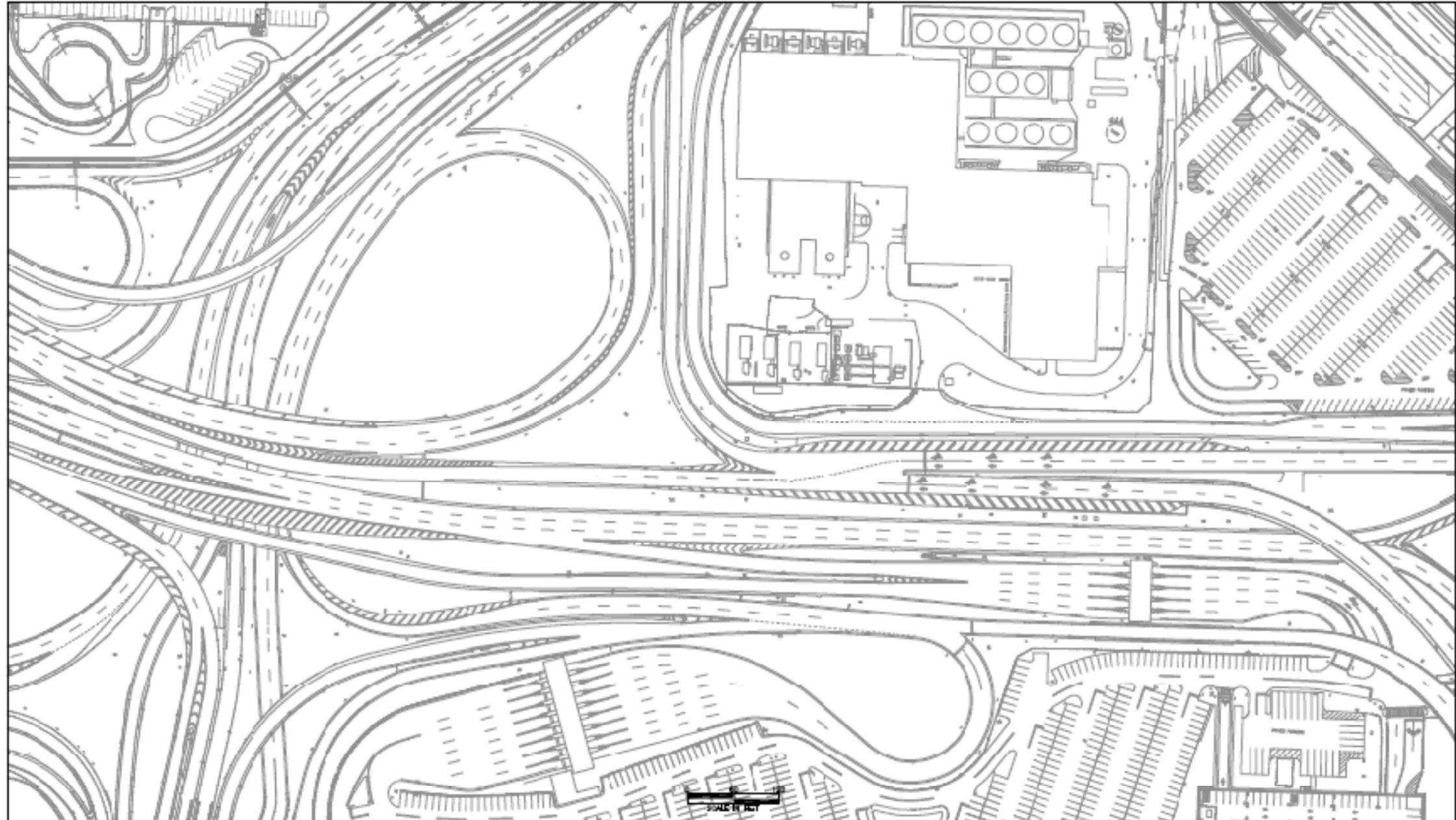


Figure IIA-E: Intersection BQ-024 Alternate Intersection Configuration – Intersection Widening

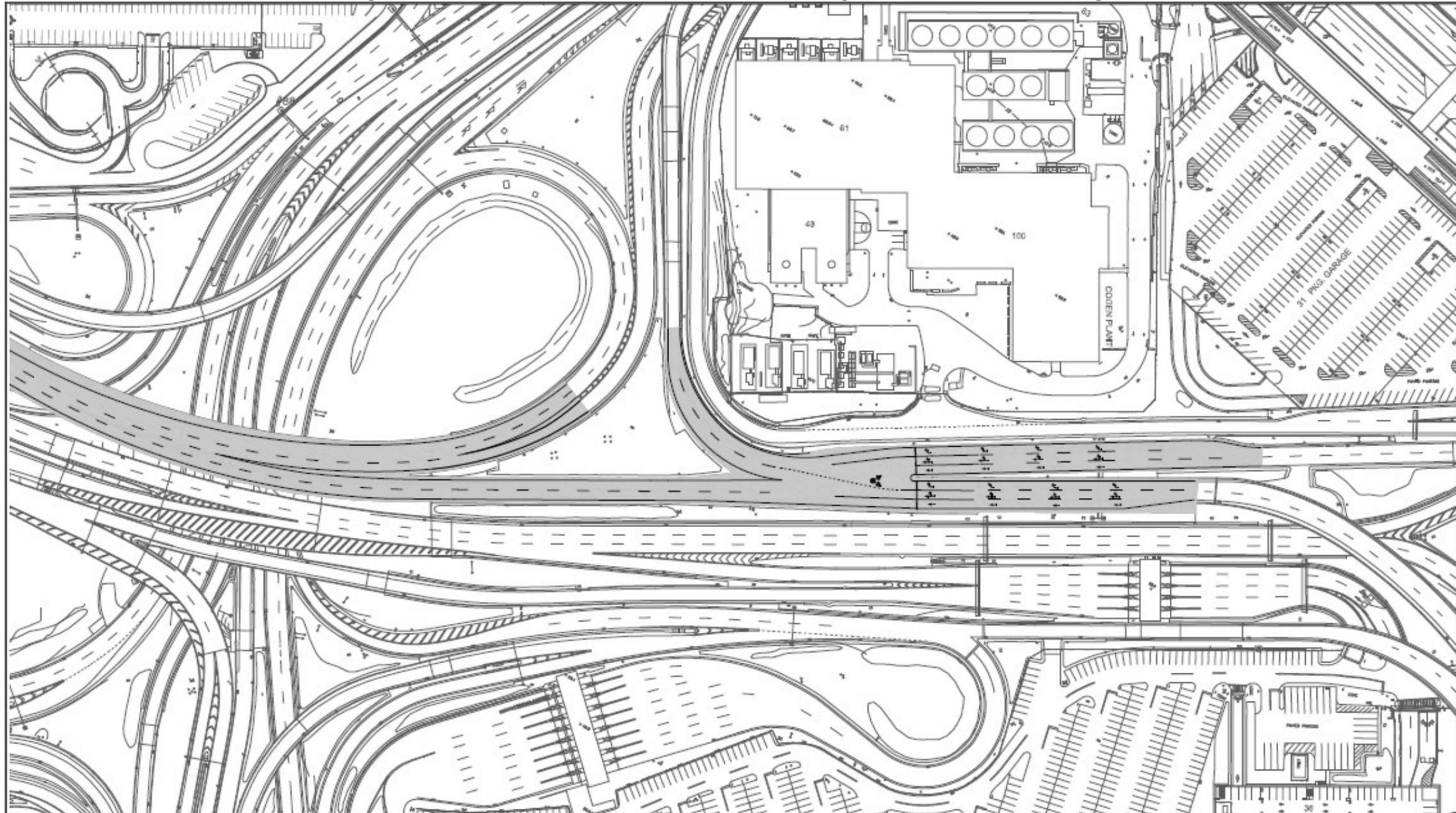


Figure IIA-F: Intersection BQ-024 Alternate Intersection Configuration –Flyover

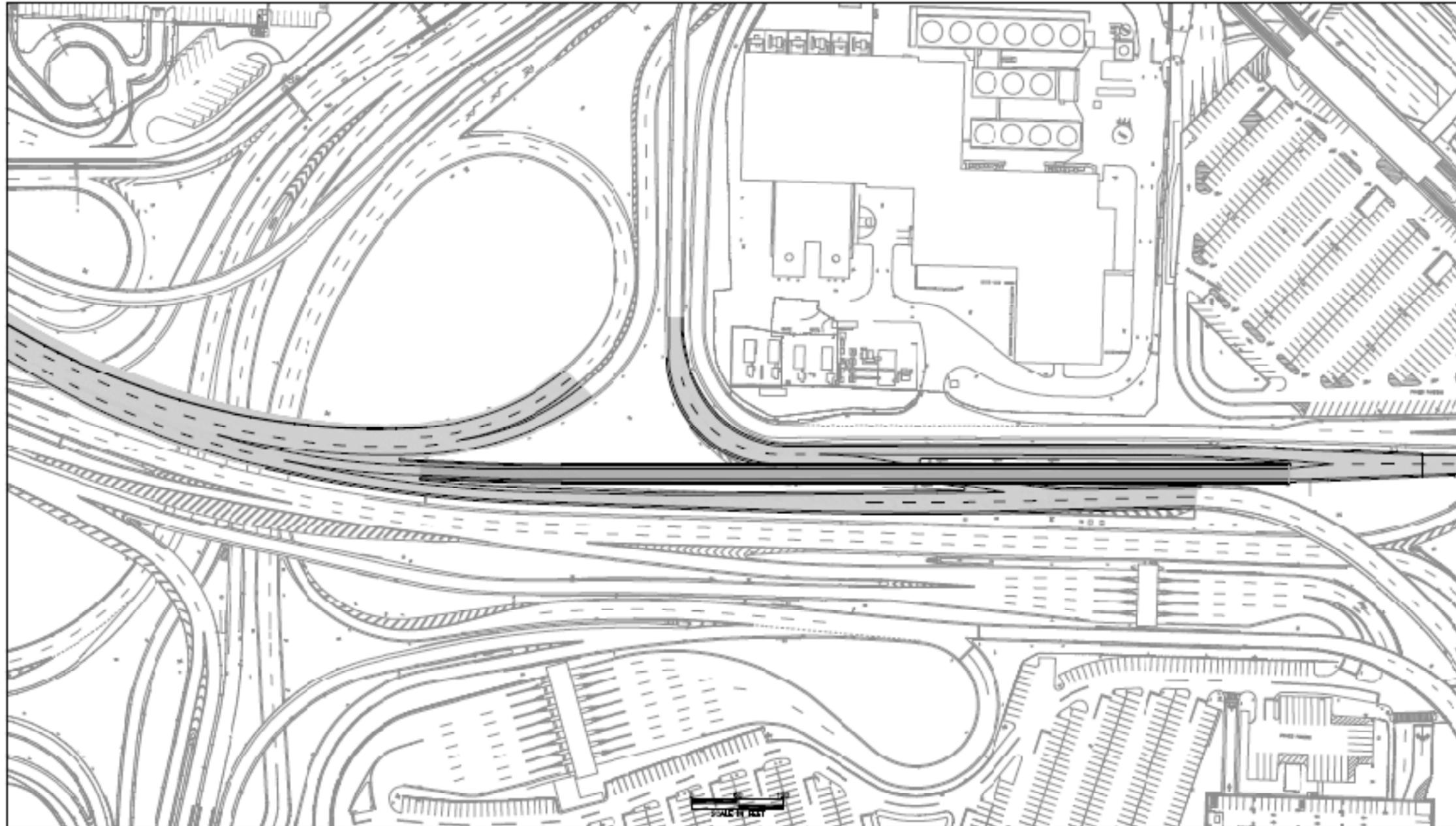
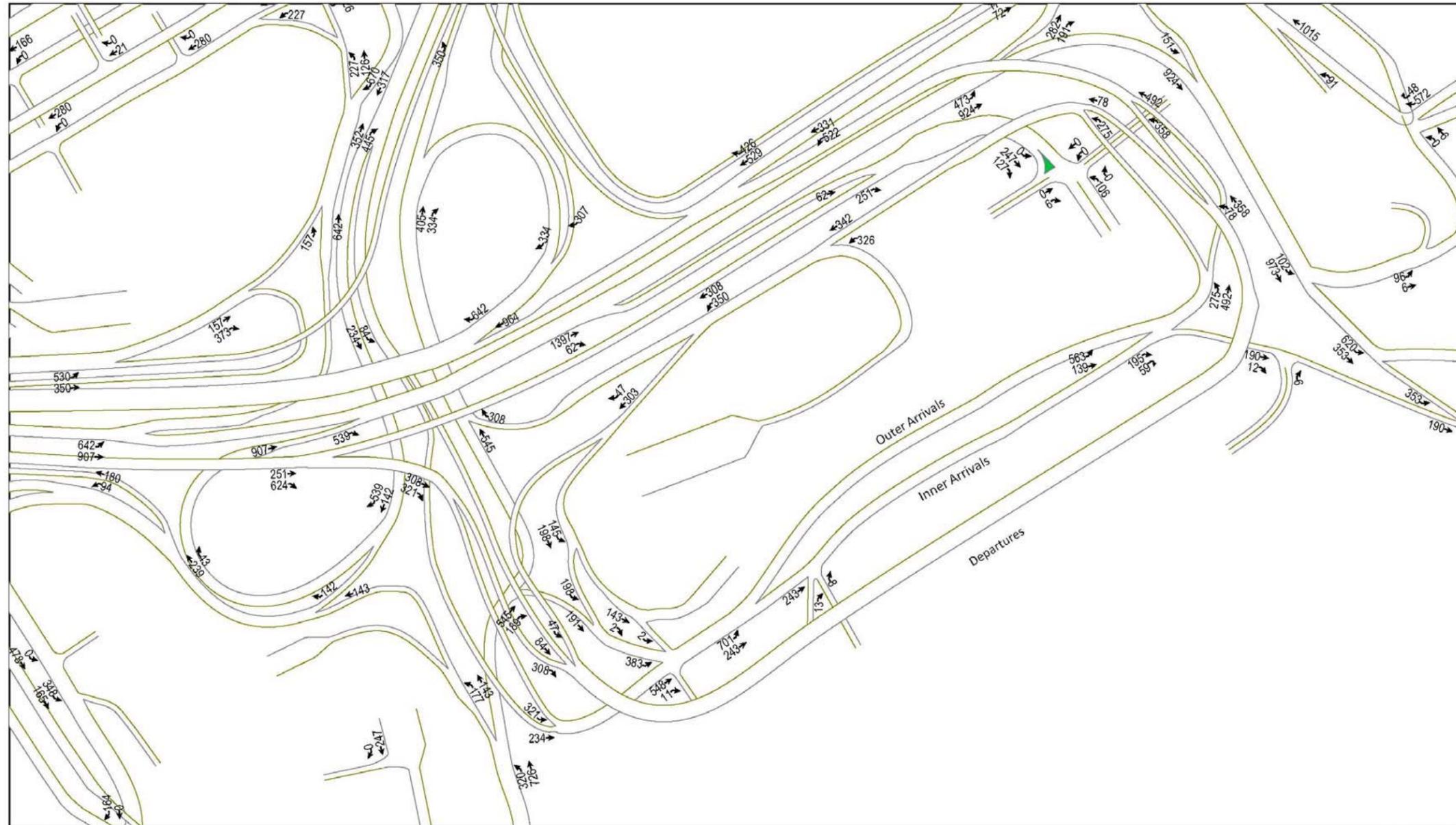


Figure IIA-H: Volume Map for Arriving Flights Frontage Peak Hour

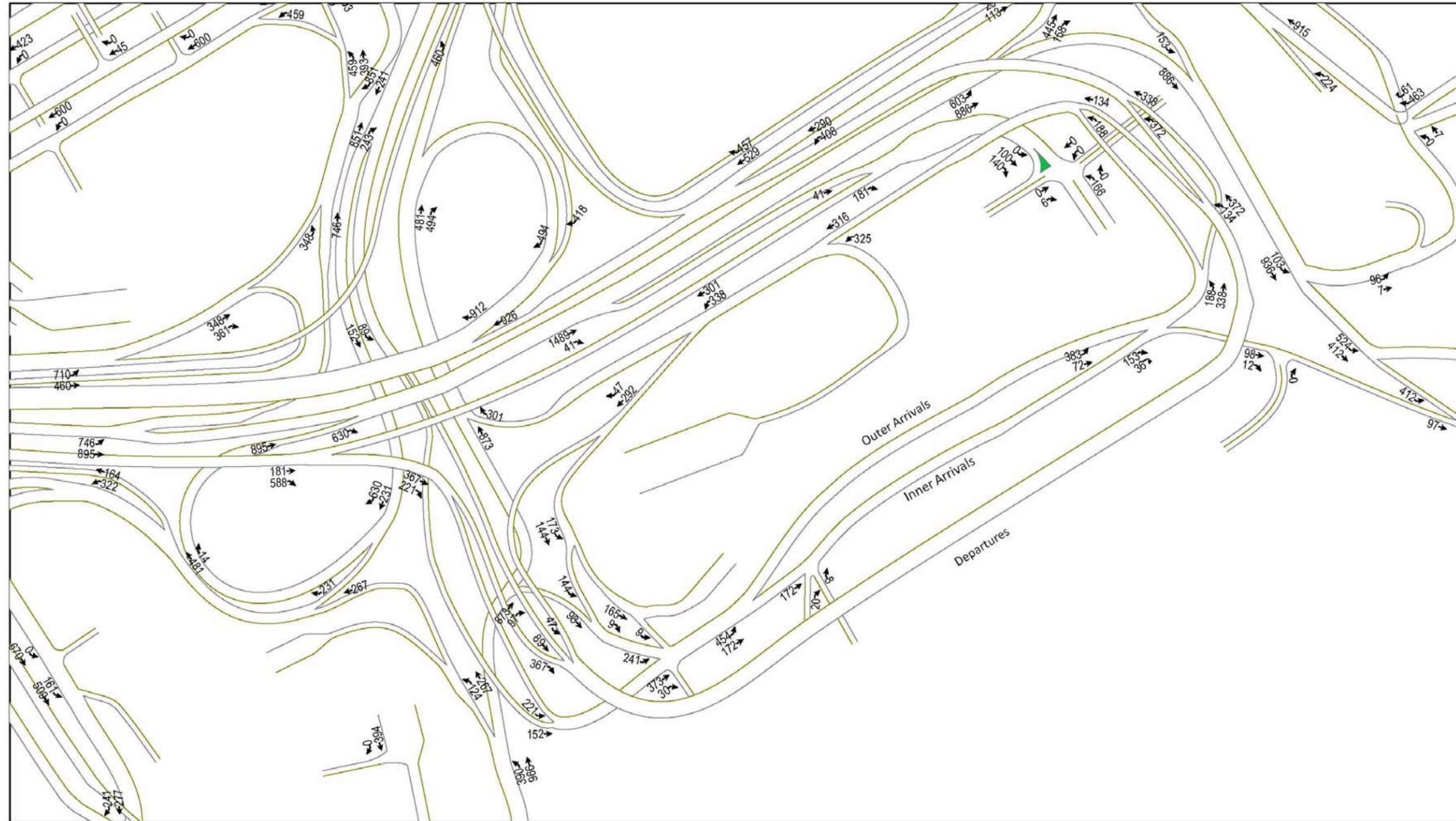


Blue Quadrant
Arriving Flights Frontage Peak Hour

2:15 - 3:15 PM



Figure IIA-I: Volume Map for Departing Flights Frontage Peak Hour



Blue Quadrant
Departing Flights Frontage Peak Hour

7:15 - 8:15 PM



Table IIA-A: Intersection LOS Analysis Summary (Existing)

DELTA TERMINAL REDEVELOPMENT (Existing)						
SIGNALIZED INTERSECTION TRAFFIC LEVELS OF SERVICE						
Blue Quadrant System Peak Hour (4:45 - 5:45 PM)						
Int. ID	INTERSECTION & APPROACH	App.	Mvt.	V/C	Delay	LOS
JFK-BQ-015	Terminal 4 Entrance Ramps Merge East Side					
	From Van Wyck Expwy	EB	TR	0.48	11.7	B
	From Ramp to BQ Parking Entrance	SB	L	0.03	20.7	C
	From Green Quadrant and Recirculation Rd.	SE	L	0.30	14.6	B
	Overall Intersection	-	-	0.43	12.6	B
JFK-BQ-016	Terminal 4 Passenger Drop-off Pedestrian Crossing West Side					
	Terminal 4 Outer Rd.	EB	T	0.39	9.1	A
	Overall Intersection	-	-	0.39	9.1	A
JFK-BQ-017	Terminal 4 Taxi and Bus Entrance					
	From Other Terminals to Inner Rd.	EB	T	0.40	0.40	A
	From Employees Parking Lot	NB	R	0.40	30.0	C
	Liveries Driveway	NE	R	0.19	28.3	C
	Overall Intersection	-	-	0.51	24.6	C
JFK-BQ-018	Terminal 4 Passenger Drop-off Pedestrian Crossing East Side					
	Terminal 4 Outer Rd.	EB	T	0.39	3.1	A
	Overall Intersection	-	-	0.39	3.1	A
JFK-BQ-019	Terminal 4 Taxi and Bus Pick-up Pedestrian Crossing					
	Terminal 4 Inner Rd.	EB	T	0.22	8.0	A
	Overall Intersection	-	-	0.22	8.0	A
JFK-BQ-020	Terminal 4 West Side Merge					
	Terminal 4 From Outer Rd. to Exit	EB	L	0.64	12.3	B
	Terminal 4 From Outer Rd. to Yellow Quadrant	EB	LT	0.65	12.6	B
	Terminal 4 From Inner Rd. to Exit	NB	RR2	0.25	2.3	A
	Overall Intersection	-	-	0.39	9.1	A
JFK-BQ-022	Terminal 4 Parking Ramps and Exits					
	From Outside Parking Lot to Garage	EB	TR	0.01	15.0	B
	From Closed Rd. to Garage and Outdoor Parking Lot	WB	LT	0.00	0.00	A
	From Garage to Outdoor Parking Lot	NB	L	0.70	30.4	C
	From Garage to Closed Rd.	NB	R	0.00	0.00	A
	From Toll Lanes to Garage	SB	LT	0.41	28.9	C
	From Toll lanes to Outdoor Parking Lot	SB	R	0.33	8.9	A
Overall Intersection	-	-	0.32	26.0	C	
JFK-BQ-023	Terminal 4 Parking Ramps and Exits					
	From Recirculation Rd. to Terminal and exits	WB	T	0.48	11.0	B
	From Parking Lot exit to Terminal and exits	NB	L	0.31	12.1	B
	Overall Intersection	-	-	0.41	11.5	B
Intersection BQ-024 Peak Hour (4:45 - 5:45 PM)						
JFK-BQ-024	Terminals 4 and 6 Ramp Exits to Airport Exit					
	Terminals 4 Exiting to Van Wyck Expwy	WB	L	0.84	32.6	C
	Terminals 4 Exiting to Van Wyck Expwy and JFK Expwy	WB	LT	0.86	34.2	C
	From Yellow Quadrant to Van Wyck Expwy and JFK Expwy	SW	TR	0.91	29.5	C
	Overall Intersection	-	-	0.89	31.3	C

Table IIA-B: Intersection LOS Analysis Summary (Scenario 2)

DELTA TERMINAL REDEVELOPMENT (SCENARIO 2)						
SIGNALIZED INTERSECTION TRAFFIC LEVELS OF SERVICE						
Blue Quadrant System Peak Hour (2:15 - 3:15 PM)						
Int. ID	INTERSECTION & APPROACH	App.	Mvt.	V/C	Delay	LOS
JFK-BQ-015	Terminal 4 Entrance Ramps Merge East Side					
	From Van Wyck Expwy	EB	TR	0.42	11.3	B
	From Ramp to BQ Parking Entrance	SB	L	0.01	20.0	B
	From Green Quadrant and Recirculation Rd.	SE	L	0.39	14.8	B
	Overall Intersection	-	-	0.43	12.7	B
JFK-BQ-016	Terminal 4 Passenger Drop-off Pedestrian Crossing West					
	Terminal 4 Outer Rd.	EB	T	0.44	9.6	A
	Overall Intersection	-	-	0.44	9.6	A
JFK-BQ-017	Terminal 4 Taxi and Bus Entrance					
	From Other Terminals to Inner Rd.	EB	T	0.36	15.2	B
	From Employees Parking Lot	NB	R	0.05	20.4	C
	Liveries Driveway	NE	R	0.08	20.6	C
	Overall Intersection	-	-	0.48	15.7	B
JFK-BQ-018	Terminal 4 Passenger Drop-off Pedestrian Crossing East					
	Terminal 4 Outer Rd.	EB	T	0.44	3.6	A
	Overall Intersection	-	-	0.44	3.6	A
JFK-BQ-019	Terminal 4 Taxi and Bus Pick-up Pedestrian Crossing					
	Terminal 4 Inner Rd.	EB	T	0.20	7.8	A
	Overall Intersection	-	-	0.20	7.8	A
JFK-BQ-020	Terminal 4 West Side Merge					
	Terminal 4 From Outer Rd. to Exit	EB	L	0.68	11.2	B
	Terminal 4 From Outer Rd. to Yellow Quadrant	EB	LT	0.68	10.9	B
	Terminal 4 From Inner Rd. to Exit	NB	RR2	0.23	3.0	A
	Overall Intersection	-	-	0.41	8.7	A
JFK-BQ-022	Terminal 4 Parking Ramps and Exits					
	From Outside Parking Lot to Garage	EB	TR	0.20	11.0	B
	From Closed Rd. to Garage and Outdoor Parking Lot	WB	LT	-	-	-
	From Garage to Outdoor Parking Lot	NB	L	0.38	26.3	C
	From Garage to Closed Rd.	NB	R	-	-	-
	From Toll Lanes to Garage	SB	LT	0.39	23.3	C
	From Toll lanes to Outdoor Parking Lot	SB	R	0.48	27.4	C
Overall Intersection	-	-	0.22	24.9	C	
JFK-BQ-023	Terminal 4 Parking Ramps and Exits					
	From Recirculation Rd. to Terminal and exits	WB	T	0.43	10.4	B
	From Parking Lot exit to Terminal and exits	NB	L	0.29	11.9	B
	Overall Intersection	-	-	0.37	11.1	B
Intersection BQ-024 Peak Hour (4:30 - 5:30 PM)						
JFK-BQ-024	Terminals 4 and 6 Ramp Exits to Airport Exit					
	Existing intersection configuration					
	Terminals 4 Exiting to Van Wyck Expwy Only	WB	L	0.72	26.2	C
	Terminals 4 Exiting to Van Wyck Expwy and JFK Expwy	WB	LT	0.74	26.8	C
	From Yellow Quadrant to Van Wyck Expwy and JFK Expwy	SW	TR	0.86	22.4	C
	Overall Intersection	-	-	0.81	24.0	C
JFK-BQ-024	Terminals 4 and 6 Ramp Exits to Airport Exit					
	Alternative 3: 3-lane approach from T4 and Yellow Quadrant					
	Terminals 4 Exiting to Van Wyck Expwy Only	WB	L	0.47	16.8	B
	Terminals 4 Exiting to Van Wyck Expwy and JFK Expwy	WB	LT	0.48	15.1	B
	From Yellow Quadrant to Van Wyck Expwy and JFK Expwy	SW	TR	0.69	16.3	B
	From Yellow Quadrant to JFK Expwy Only	SW	R	0.73	23.5	C
	Overall Intersection	-	-	0.61	17.4	B

II-B. Traffic Impacts on the Green Quadrant

The following documents the traffic impacts on the Green Quadrant resulting from the implementation of the Delta Airlines Redevelopment Plan known as Scenario 2. This plan calls for the relocation of Delta international flights to Terminal 4 in the Blue Quadrant and the consolidation of the domestic flights to Terminal 2 in the Green Quadrant. Terminal 3 will be demolished, and the flight operations of Terminal 1 will be unaffected.

The flight schedule below lists the future Delta international and domestic flights under Scenario 2 and represents a typical day. All traffic volume projections used in this study were derived from this flight schedule.

- **Delta and KLM 16 Gates** from March 26, 2009. Referred in this report as flight schedule 2012(3).

For analysis purposes, the traffic generated by the international flights of flight schedule 2012(3) was assigned to the Blue Quadrant, while the traffic generated by the domestic flights was assigned to Terminal 2. The resulting volumes were used for the operational analyses of key land-side facilities, such as signalized intersections, roadway segments, terminal frontages, and the parking facility. This white paper summarizes the methodologies and results of these studies due to the consolidation of Delta’s domestic flights to Terminal 2 and the relocation of Delta's international flights to Terminal 4.

The results of the analysis indicate that under Scenario 2, all signalized intersections in the Green Quadrant operate at Level-of-Service (LOS) C or better, all critical roadway segments leading into and out of the quadrant operate at LOS C or better, and the maximum occupancy rate for the Green Parking facility, which is currently at 70% capacity, is projected to decrease to 61% at the time of its peak parking demand. Even though there is an anticipated increase in traffic volume for Terminal 2, the terminal frontages are still expected to operate under capacity.

Overall, Scenario 2 represents a viable option for the Green Quadrant roadway network.

Introduction

This white paper summarizes the findings of a traffic study conducted for the Green Quadrant roadway network associated with the implementation of the Delta Redevelopment plan known as Scenario 2. This plan proposes to consolidate all Delta Airlines domestic flights to Terminal 2 and relocate Delta international flights to Terminal 4, which will leave Terminal 3 demolished. The flight operations of Terminal 1 in the Green Quadrant would remain unaffected.

Future traffic volumes on the roadway network resulting from this plan were calculated and used to perform traffic operational analyses at signalized intersections, key roadway segments, Terminal 2 frontages, and the parking facility in the Green Quadrant.

Operational Analysis Methodology

The methods presented in the Highway Capacity Manual, along with a Synchro-7 traffic simulation model developed for this study, and several specialized Excel spreadsheets were the main tools used to perform the operational analyses. The parameters describing the quality of service of each roadway facility evaluated in this study are: the average vehicular delay at signalized intersections, the Volume to Capacity (V/C) ratio at critical roadway segments, and the Capacity Utilization (CU) factor for the terminal frontages and parking facility.

Vehicular Traffic Generated By the Flight Schedules

The traffic volumes destined for Terminal 2 under Scenario 2 were derived from the following flight schedule:

- Delta and KLM 16 Gates from March 26, 2009. Referred in this report as flight schedule 2012(3), and

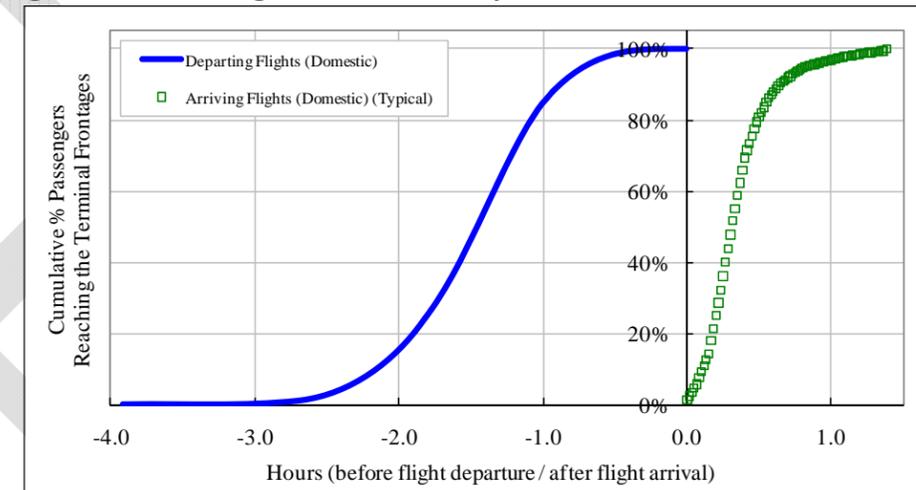
The 2012(3) schedule lists the proposed future Delta Airlines flights, of which only the Domestic flights are relevant in this white paper. See **Figure IIB-A** in the Appendix for flight schedule 2012(3).

A daily vehicular demand profile was calculated for each flight using the air-passenger capacity of each plane (expressed in number of seats) as a key parameter. The vehicular demand was grouped into two main categories: vehicles generated by arriving flights and vehicles generated by departing flights. The conversion from air-passenger capacity per plane to vehicle demand required the utilization of the following factors:

- Number of seats per plane,
- Load Factors- establishes the percentage utilization of each plane’s capacity (90% was used for this study),
- Passengers Arrival Distribution- describes how long after each flight arrival time will passengers start reaching the Arriving Flights frontage (see **Figure IIB-1**),

- Passengers Departure Distribution- describes how long before each flight departure time will passengers start reaching the Departing Flights frontage (see **Figure IIB-1**),
- Passenger Transfer Rates- the percentage of passengers in transit for connecting flights,
- Modal Splits- the ratios by mode of transportation that are utilized by the air-passengers, and
- Vehicle Occupancy Rates- the average number of air-passengers using each vehicle type.

Figure IIB-1: Passengers Arrival and Departure Distributions for Terminal 2



Source: Delta Airlines, JFK Redevelopment Concept Design Final Report, April 2008 (Departing Flights)

These profiles were then added (in 15-minute intervals) by category (Arrivals and Departures) to produce a 24-hour total traffic demand profile. The factors used in the study are shown in **Table IIB-1**.

Table IIB-1: Factors Used to Convert From Air-Passengers to Traffic Demand

Flight Schedule	Vehicle Type	Departing Flights						Arriving Flights					
		Transfer Rates		Modal Split		Vehicle Occupancy		Transfer Rates		Modal Split		Vehicle Occupancy	
		Intern.	Dom.	Intern.	Dom.	Intern.	Dom.	Intern.	Dom.	Intern.	Dom.	Intern.	Dom.
2012(3) Future Delta plus KLM	Autos	54.5%	32.9%	31%	31%	1.99	1.99	54.4%	32.7%	31%	31%	1.53	1.53
	Taxis	54.5%	32.9%	24%	24%	2.07	2.07	54.4%	32.7%	24%	24%	1.42	1.42
	Black Cars	54.5%	32.9%	17%	17%	1.86	1.86	54.4%	32.7%	17%	17%	1.79	1.79
	Shuttle Buses	54.5%	32.9%	8%	8%	4.51	4.51	54.4%	32.7%	8%	8%	4.22	4.22
	Mass Transit	54.5%	32.9%	3%	3%	4.73	4.73	54.4%	32.7%	3%	3%	4.00	4.00
	Others (e.g., AirTrain)	54.5%	32.9%	17%	17%	-	-	54.4%	32.7%	17%	17%	-	-

Source: Delta Airlines, JFK Redevelopment Concept Design Final Report, April 2008 (Departing Flights)

Figures IIB-2 and IIB-3 show the resulting 24-hour volume profiles for air-passengers and vehicles generated by the 2012(3) flight schedule.

Figure IIB-2: Air-Passenger Profiles Generated by the Domestic Flights of Flight Schedule 2012(3)

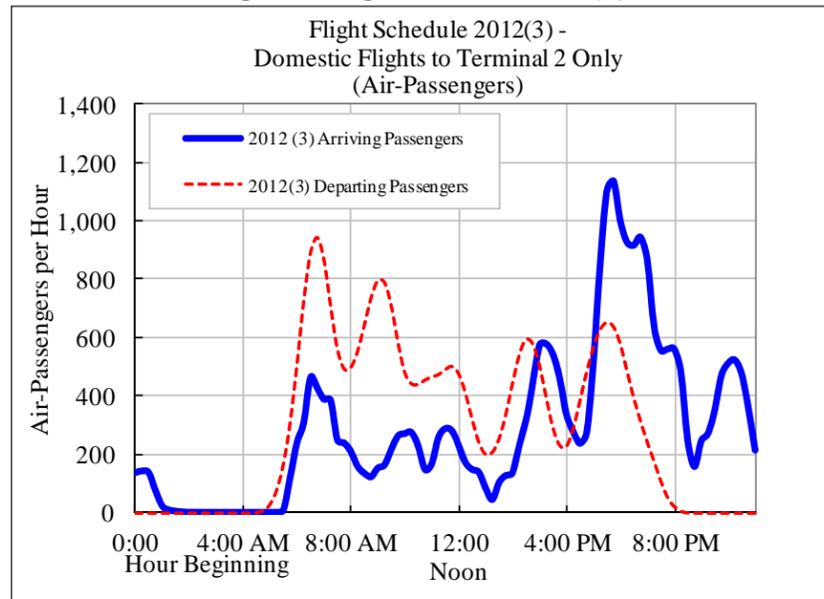
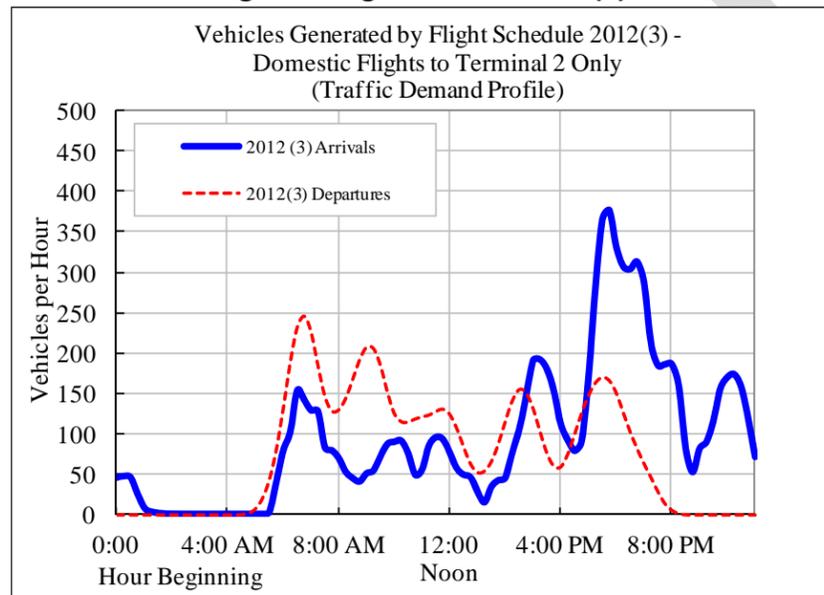


Figure IIB-3: Traffic Demand Profiles Generated by the Domestic Flights of Flight Schedule 2012(3)



To determine the resulting volumes in the Green Quadrant, the existing traffic volumes associated with Terminals 2 and 3 were removed from the roadway network and the Green Parking facility. Once the existing volumes were removed, the resulting vehicular demand profiles associated with the future flight schedule were assigned to the roadway network through a set of routes previously defined to reproduce traffic patterns observed in the field. The most relevant patterns are: the percentage of traffic using the Van Wyck Expressway vs. the JFK Expressway, the recirculation percentages, and the percentage of vehicles using the Green Parking facility. These percentage splits were calculated and applied to the demand profiles in 15-minute intervals for the entire day to produce traffic volumes for each vehicular movement in the roadway network.

Overall Traffic Indicators

The total number of flights, passengers, and vehicular demand expected for Terminal 2 in the Green Quadrant on a typical day under Scenario 2 are shown in **Table IIB-2**.

Table IIB-2: Daily Volumes Destined to Terminal 2

Number of Daily:	Daily Volumes Generated by Flight Schedule 2012(3) that are Destined for Terminal 2
Flights	84
Air-Passengers	13,738
Vehicles	4,063

-Air-Passengers produced include those connecting to other flights
 -Vehicles shown are destined for the curb

A comparison of the 24-hour traffic demand for the Green Quadrant between the existing conditions and Scenario 2 was performed and presented in **Figure IIB-4**. The demands shown represent the hourly traffic volumes entering the Green Quadrant. The highest peak traffic demand for both conditions occurs at the same hour (3:00 to 4:00 PM). The existing conditions peak demand is 2,012 vehicles per hour, whereas the Scenario 2 peak demand is 1,156 vehicles per hour. The total number of vehicles entering the Green Quadrant on a typical day under existing conditions is about 22,100 vehicles, while Scenario 2 forecasts about 13,700 daily vehicles.

Figure IIB-4: Terminal 2 Traffic Demand Profile – Resulting Volumes Entering the Green Quadrant (Existing vs. Scenario 2)

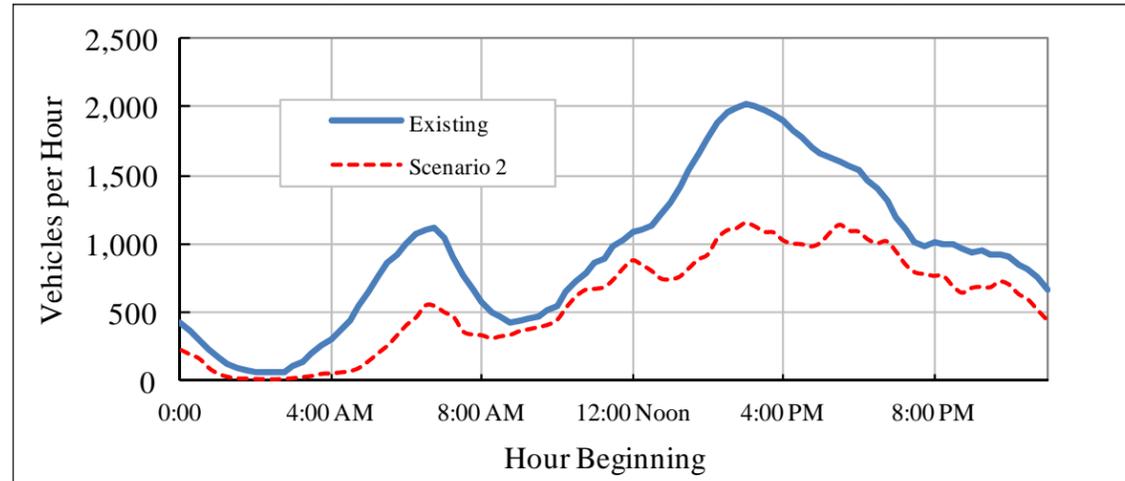


Table IIB-3B: Parking Volumes During the System-wide Peak Hour (Scenario 2)

System-wide Peak Hour :		3:45 - 4:45 PM
Destination	Number of vehicles entering the parking lot	% Entering parking facility (by Destination)
Vehicles traveling straight to Parking	205	56%
Parking Vehicles using Arriving Flights Frontages	100	27%
Parking Vehicles using Departing Flights Frontage	61	17%
Total Vehicles Parking	366	100%

Tables IIB-3A and IIB-3B summarize the key traffic volumes routed in the Green Quadrant during the system-wide peak hour of Scenario 2 (3:45 to 4:45 PM). They illustrate the general traffic patterns of vehicles bound for the terminal frontages, recirculation road, and/or parking facility.

Table IIB-3A: Key Traffic Volumes and Operational Characteristics During the System-wide Peak Hour (Scenario 2)

System-wide Peak Hour :		3:45 - 4:45 PM	
Destination	Traffic volume entering the quadrant	% Entering the quadrant (by Destination)	% Recirculating back to frontage and/or parking
Vehicles traveling straight to Parking	205	18%	-
Vehicles traveling to the Arriving Flights Frontages	485	43%	37%
Vehicles traveling to the Departing Flights Frontage	433	39%	8%
Total	1123	100%	

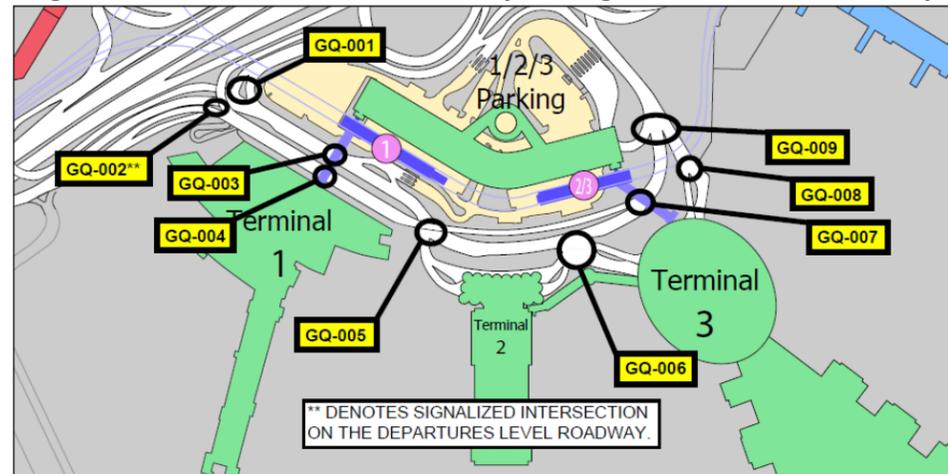
Traffic Analysis

This section describes the methodologies and main findings of the traffic operational analyses performed for the Green Quadrant roadway network under Scenario 2. A comparison with the existing conditions was also conducted to better illustrate the traffic impacts. Traffic volumes used for the existing conditions analyses are based on data collected in the summer of 2007. The signalized intersections and roadway segment analyses were conducted during the system-wide peak hour (3:45 to 4:45 PM for both the existing conditions and Scenario 2), while the frontage analyses were performed during each terminal frontage’s respective peak hour.

Signalized Intersection Analysis

The traffic operational analyses for all signalized intersections were conducted using a Synchro-7 model that was developed for the study area. There are nine signalized intersections examined, and their locations are shown in Figure IIB-5. They are rated in terms of their Level of Service (LOS), with LOS A having the best operational conditions and LOS F having the worst.

Figure IIB-5: Green Quadrant Roadway and Signalized Intersections Map



Existing Conditions

Under the existing conditions, all intersections are operating at LOS C or better. Intersection GQ-001 experiences the highest delay of 33.4 seconds per vehicle (LOS C), and its Volume to Capacity (V/C) ratio (a measure of congestion where values over 1.0 indicate overcapacity conditions) reaches 0.56. Intersection GQ-009 experiences the highest V/C ratio of 0.70, and its overall intersection delay is 24.1 seconds per vehicle (LOS C). For a complete LOS summary for the existing conditions, see **Table IIB-A** in the Appendix.

Scenario 2

For Scenario 2, one intersection (GQ-001) is anticipated to operate at LOS C, while the rest operate at LOS B or better. Intersection GQ-001 experiences the highest delay at about 34 seconds per vehicle (LOS C), and its V/C ratio is 0.30. Intersection GQ-009 is expected to have the highest V/C ratio at 0.42, and its delay is expected to be 16.5 seconds per vehicle. For a complete LOS summary for Scenario 2, see **Table IIB-B** in the Appendix.

Roadway Segment Analysis

The level of service of key roadway segments in the Green Quadrant was calculated for the system-wide peak hour. Under the existing conditions, all key roadway segments in the quadrant operate at LOS C or better with the exception of the roadway segment located immediately downstream of intersection GQ-009 (LOS D) where all exiting and recirculating traffic of the Green Quadrant converge.

For Scenario 2, the roadway segment located immediately downstream of intersection GQ-009 is expected to operate at LOS C, while the other key segments are anticipated to operate at LOS B or better.

Terminal Frontage Analysis

Under Scenario 2, Terminal 3 would be demolished, and Terminal 1 remains unchanged. Therefore, the frontage analysis was only conducted for Terminal 2.

Terminal 2 has a total of five frontages: two are common frontages used by vehicles dropping off departing passengers, and the other three are used by vehicles picking up arriving passengers. The Departing Flights frontages have a combined available effective curb length of about 480 feet, and the Arriving Flights frontages have a combined available effective curb length of about 1,150 feet. **Table IIB-4** summarizes the different terminal frontages and their total available effective curb lengths. All curb measurements exclude the curbs along pedestrian crossings.

Table IIB-4: Terminal 2 Frontage Curb Lengths

Terminal Frontage		Total Effective Curb Length (ft)
Departures	Inner Frontage	240
	Outer Frontage	240
Arrivals Inner Frontage	Taxis Curb	230
	Outer Curb	230
Arrivals Middle Frontage	Inner Curb	230
	Outer Curb	230
Arrivals Outer Frontage		230

The methodology employed for this analysis uses the Poisson distribution to calculate the minimum curb length required to accommodate a predetermined hourly demand volume. The following inputs are required:

- Total traffic volume destined for the terminal frontage during the peak hour,
- Traffic composition (by vehicle type),
- Average dwell times (by vehicle type), and
- Average curb length occupied by each vehicle type.

Listed in **Table IIB-5** are the dwell times and vehicle lengths used in the analysis. These values were field measured.

Table IIB-5: Dwell Times and Vehicle Lengths

Vehicle Type	Departing Flights Frontages		Arriving Flights Frontages	
	Dwell Times (min)	Vehicle Length plus gap (feet)	Dwell Times (min)	Vehicle Length plus gap (feet)
Autos	1.49	25	1.65	25
Taxis	1.15	25	1.63	25
Black Cars	1.50	25	1.81	25
Shuttle Buses	1.17	30	1.68	30
Mass Transit	1.00	40	4.18	40
Others (e.g., AirTrain)	2.00	30	2.00	30

The minimum curb length required for all frontages was calculated, and the resulting values were divided by the available curb lengths to determine the Capacity Utilization (CU) factors. CU percentages that are within the 90 – 100% range indicate an undesirable level of service for airport patrons, and any value greater than 100% indicate a frontage operating over its capacity and represents operational failure. The CU for the Arriving Flights frontages were calculated for the curb areas designated for each vehicle type, whereas the Departing Flights frontages were evaluated based on all vehicle types sharing a common frontage.

Existing Conditions

In 2007, the highest traffic volume (all vehicle types) entering the Departing Flights frontage was 121 vehicles in one hour, and took place from 2:45 to 3:45 PM. The minimum curb length required to accommodate this volume is 184 feet resulting in a CU factor of 38%.

The traffic volume entering the three Arriving frontages reached its peak from 3:45 to 4:45 PM with 191 vehicles. The Arriving Flights Outer frontage, which is currently utilized by mass transit, shuttle buses, and other authorized vehicles, is operating with the highest CU (52%). All arrival frontages have enough capacity to process the traffic demand.

Scenario 2

Under this scenario, the highest traffic volume anticipated for the Departing Flights frontages is 187 vehicles per hour, which would take place from 6:45 to 7:45 AM. This demand requires a minimum curb length of 160 feet and results in a frontage CU of 33%.

The traffic volume entering the three Arriving Flights frontages reached its peak from 5:45 to 6:45 PM with 347 vehicles. If the existing designated areas for the various vehicles types are maintained, the Arriving Flights Outer frontage is expected to operate closest to its capacity with a CU of 73%. All arrival frontages have enough capacity to process the traffic demand.

Table IIB-6 summarizes the curb length requirement for the Departing and Arriving Flights frontages under the existing conditions and the three frontage configurations evaluated under Scenario 2.

Table IIB-6: Terminal 2 Frontage Analyses Results

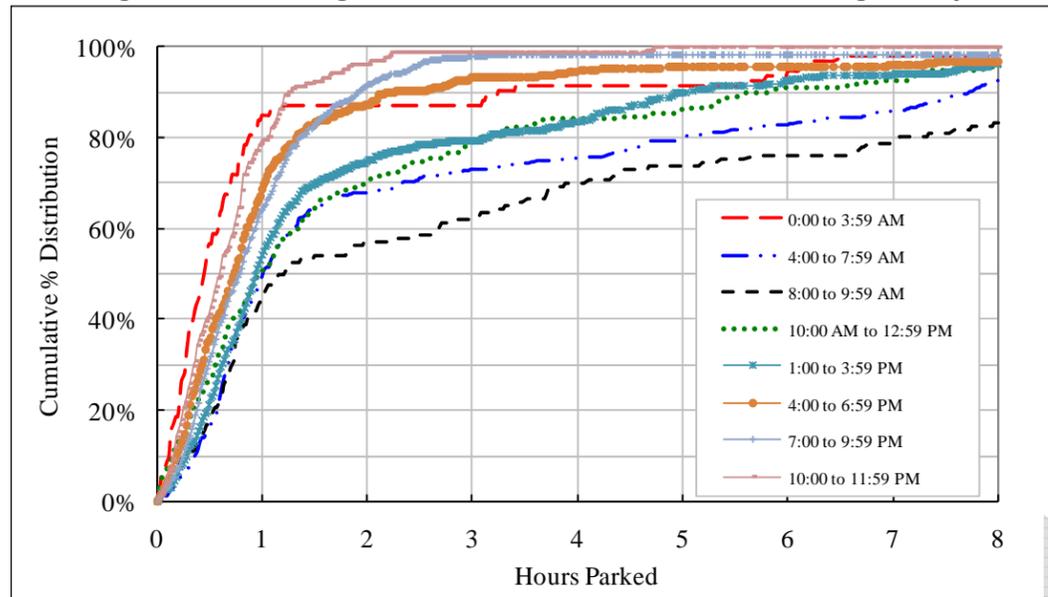
Terminal Frontage	Peak Hour	Vehicle Volumes During the Peak Hour									Curb Length (feet)		Capacity Utilization (%)
		Autos	Taxis	Black Cars	Shuttles (Departures Level only)	Shuttles: Buses (Arrivals Level Only)	Shuttles: Vans (Arrivals Level Only)	Mass Transit	Others	Total	Minimum Curb Length Required	Available Curb Length	
TERMINAL 2: EXISTING CONDITIONS													
Departing Flights Frontage (Common Frontage)	2:45 - 3:45 PM	43	21	52	5	-	-	-	-	121	184	480	38%
Arriving Flights Inner Frontage (Taxis Curb)	3:45 - 4:45 PM	-	70	-	-	-	-	-	-	70	80	230	35%
Arriving Flights Inner Frontage (Outer Curb)		-	-	-	-	-	6	-	-	6	24	230	10%
Arriving Flights Middle Frontage (Inner Curb)		-	-	33	-	-	-	-	-	33	76	230	33%
Arriving Flights Middle Frontage (Outer Curb)		59	-	-	-	-	-	-	-	59	91	230	40%
Arriving Flights Outer Frontage		-	-	-	-	12	-	7	4	23	120	230	52%
TERMINAL 2: SCENARIO 2													
Departing Flights Frontage (Common Frontage)	6:45 - 7:45 AM	71	54	38	18	-	-	6	-	187	160	480	33%
Arriving Flights Inner Frontage (Taxis Curb)	5:45 - 6:45 PM	-	101	-	-	-	-	-	-	101	121	230	53%
Arriving Flights Inner Frontage (Outer Curb)		-	-	-	-	-	12	-	-	12	37	230	16%
Arriving Flights Middle Frontage (Inner Curb)		-	-	71	-	-	-	-	-	71	106	230	46%
Arriving Flights Middle Frontage (Outer Curb)		129	-	-	-	-	-	-	-	129	151	230	66%
Arriving Flights Outer Frontage		-	-	-	-	21	-	13	-	34	169	230	73%

The above analysis assumes that all departures HOVs go to the Departures Frontage.

Parking Analysis

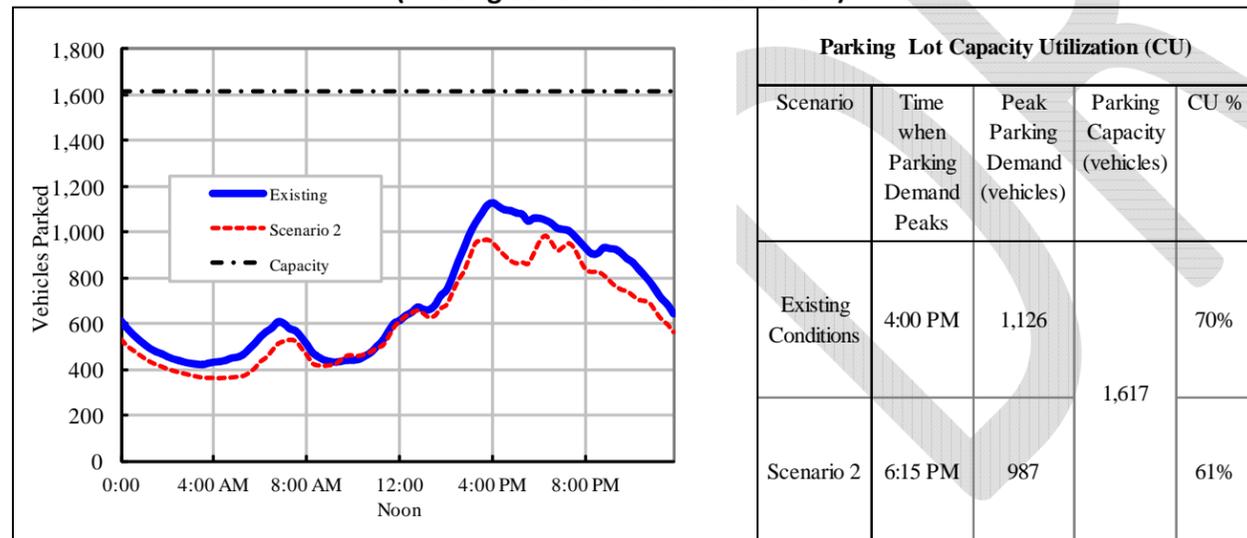
To evaluate the parking demand needs for the Green Parking facility, a parking study was conducted. Parking data containing the exact time that vehicles entered and exited the parking facility were gathered and processed to produce eight typical “parked time” distributions throughout a typical day. This data was collected in March 2009, and Figure IIB-6 shows the eight distributions used in the analysis. For example, for vehicles entering the parking facility between the hours of 8:00 AM and 9:59 AM, 70% remained parked for four hours or less.

Figure IIB-6: Parking Time Distributions for the Green Parking Facility



These distributions were applied to the vehicular volumes entering the parking lot under Scenario 2 to determine the future 24-hour parking accumulation profile. Figure IIB-7 compares the 24-hour parking accumulation profiles of the existing conditions and Scenario 2.

Figure IIB-7: Green Parking Facility Parking Accumulation Profiles (Existing Conditions and Scenario 2)



Existing Conditions

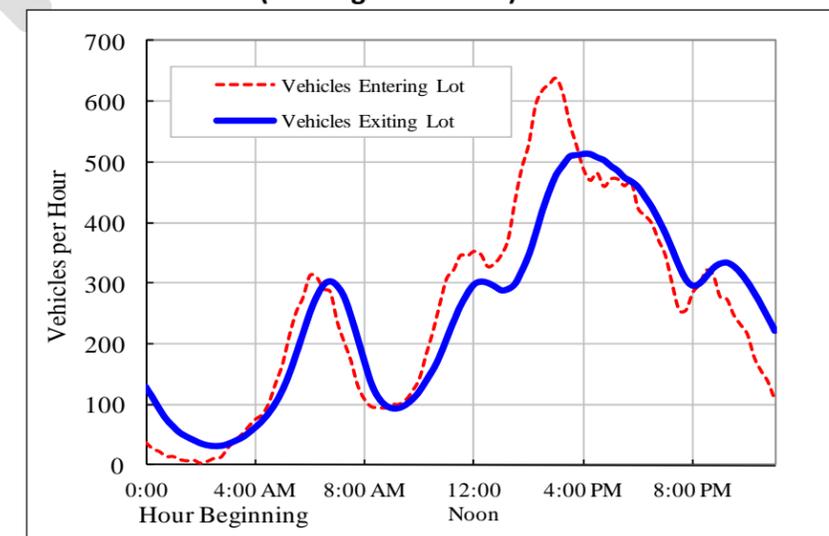
The demand for parking in the Green Quadrant under existing conditions experiences a five-hour peak period starting at 4:00 PM. It reaches its highest peak demand of 1,126 vehicles at 4:00 PM. There is also a morning peak at around 6:45 AM when parking demand is about 610 vehicles (46% less than the evening peak).

The Green Parking facility, which has a parking capacity of 1,617 vehicles, is currently operating at 70% of its capacity. This is an acceptable Capacity Utilization percentage as it indicates relative freedom in finding a vacant spot. Other pertinent information includes:

- Highest hourly volume entering the parking facility = 637 vehicles (occurs around 3:00 PM)
- Highest hourly volume exiting the parking facility = 514 vehicles (occurs around 4:00 PM)
- During the system peak hour (3:45 to 4:45 PM), about 530 vehicles enter and 510 vehicles exit the parking facility.

Figure IIB-8 is a graphical representation of vehicles entering and exiting the Green Parking facility during a typical day.

Figure IIB-8: Hourly Volumes Entering and Exiting the Green Parking Facility (Existing Conditions)



Scenario 2

For Scenario 2, the Green Parking facility will be used only by vehicles bound for Terminals 1 and 2. The 24-hour parking demand profile anticipated for the Green Quadrant is similar to the existing conditions profile. A five-hour peak period is anticipated to start at around 3:30

PM. It reaches its highest peak parking demand of 987 vehicles at 6:15 PM. There is also a morning peak period that occurs around 7:15 AM when the parking demand is about 530 vehicles (46% less than the evening peak).

After reviewing this information, it can be concluded that the Green Parking facility, which has a parking capacity of 1,617 vehicles, would operate at 61% of its capacity under Scenario 2. This is an acceptable Capacity Utilization percentage as it indicates great freedom in finding a vacant spot. Other pertinent information includes:

- Highest hourly volume entering the parking facility = 563 vehicles (occurs around 2:30 PM)
- Highest hourly volume exiting the parking facility = 438 vehicles (occurs around 6:00 PM)
- During the system peak hour (3:45 to 4:45 PM), about 370 vehicles enter and 420 vehicles exit the parking facility.

Figure IIB-9 is a graphical representation of vehicles entering and exiting the Green Parking facility during a typical day.

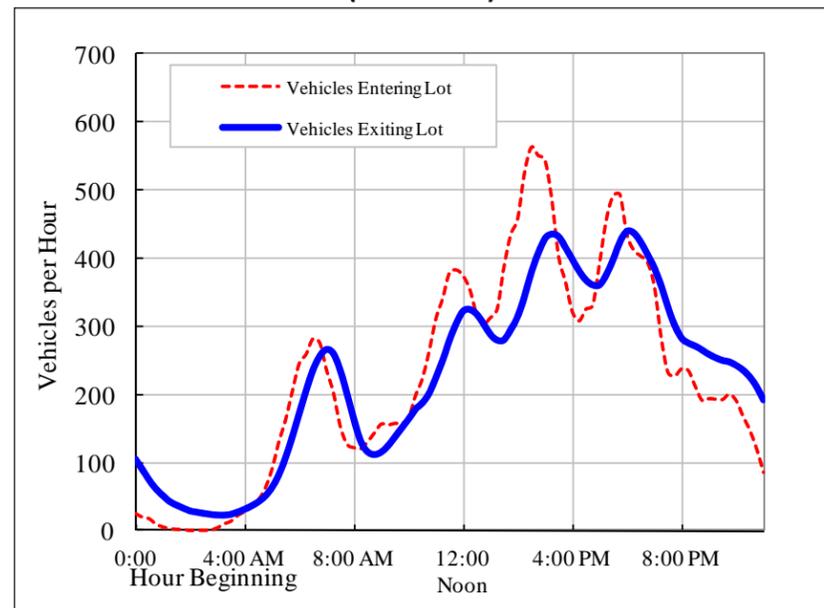
Conclusion

This white paper summarizes the methodologies and findings of a traffic study conducted for the Green Quadrant in which critical land-side infrastructures were evaluated under Scenario 2 of the Delta Airlines Redevelopment Plan. These infrastructures included all signalized intersections, critical roadway segments, Terminal 2 frontages, and the Green Parking facility.

Under this scenario, Delta Airlines will consolidate its domestic flights to Terminal 2 in the Green Quadrant and its international flights will be relocated to Terminal 4 in the Blue Quadrant. Terminal 1 will remain unchanged and Terminal 3 will be demolished. As a result, the roadways in the Green Quadrant will have vehicles bound for Terminals 1 and 2 only.

The analyses revealed that Scenario 2 is a feasible option for the Green Quadrant roadway network since it can effectively accommodate the new traffic patterns resulting from the proposed plan with acceptable levels of service to the airport patrons.

Figure IIB-9: Hourly Volumes Entering and Exiting the Green Parking Facility (Scenario 2)



SCENARIO II – PART B
APPENDIX

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Figure IIB-A: Flight Schedule 2012(3) – Only Domestic Flights (“DOM”) are Destined for Terminal 2 in the Green Quadrant

Delta + KLM - 16 Gate Flight Schedule

March 26, 2009

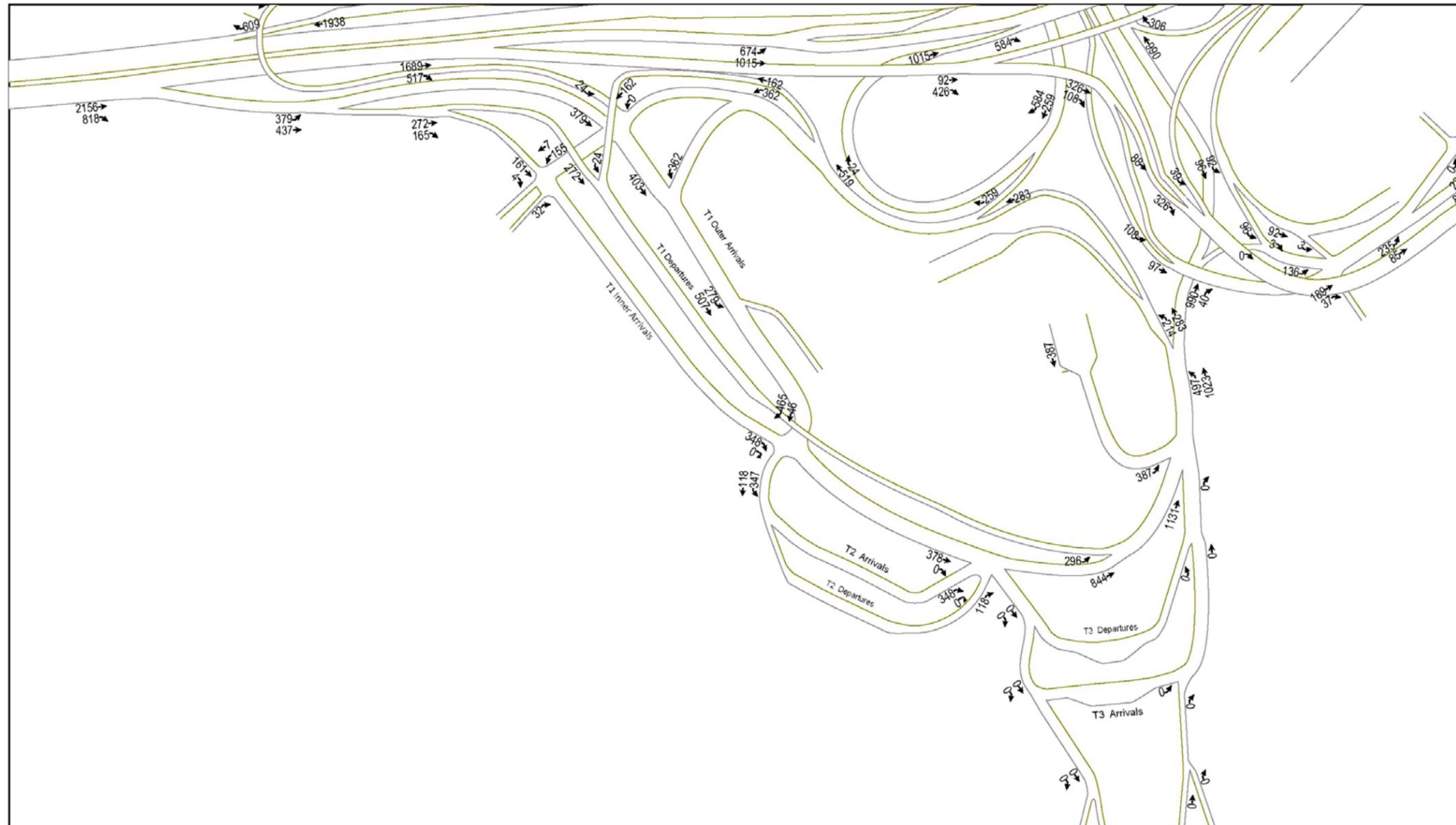
Airline	Flt #	Origin	Arriv. Time	A/C	Gate	Airline	Flt #	Dest.	Dep. Time	A/C	Gate
DL	120	INT	6:10	787	B27	DL	403	DOM	8:45	787	B27
DL	374	INT	14:55	757	B27						
DL	5389	DOM	15:55	73W	B27	DL	1003	DOM	17:00	73W	B27
						DL	449	INT	18:05	738	B27
DL	5495	DOM	18:45	73W	B27	DL	5539	DOM	19:35	73W	B27
KLM		INT	20:20	74M	B27	KLM		INT	22:55	74M	B27
DL	17	INT	6:40	77B	B29	DL	175	DOM	13:50	77B	B29
DL	81	INT	14:55	787	B29	DL	148	INT	17:05	787	B29
DL	1008	DOM	17:29	73W	B29	DL	5488	DOM	18:25	73W	B29
						DL	417	DOM	19:35	738	B29
DL	2	INT	20:10	787	B29	DL	121	INT	22:20	787	B29
DL	87	INT	6:05	77B	B31	DL	5117	DOM	10:00	77B	B31
DL	155	INT	14:35	757	B31						
DL	5114	DOM	15:35	757	B31	DL	480	DOM	16:10	757	B31
DL	414	DOM	17:48	738	B31	DL	611	DOM	18:50	738	B31
DL	428	DOM	19:12	738	B31	DL	1581	DOM	19:55	738	B31
DL	5366	DOM	21:33	73W	B31						
DL	8016	INT	6:00	77B	B28	DL	8045	INT	12:00	77B	B28
DL	6	INT	13:35	787	B28						
DL	118	DOM	15:00	757	B28	DL	123	DOM	16:35	757	B28
DL	53	DOM	17:00	757	B28						
DL	932	DOM	17:58	757	B28	DL	2	DOM	18:40	757	B28
DL	96	DOM	19:10	757	B28	DL	5965	DOM	19:55	757	B28
						DL	80	INT	21:05	787	B28
						DL	5	INT	22:00	787	B28
DL	430	DOM	7:07	738	B32	DL	429	DOM	8:50	738	B32
DL	5197	DOM	14:05	73W	B32	DL	5532	DOM	14:55	73W	B32
DL	550	DOM	15:20	757	B32	DL	5637	DOM	15:59	757	B32
DL	8045	INT	17:10	77B	B32						
DL	705	DOM	18:12	757	B32	DL	8003	INT	20:30	757	B32
						DL	86	INT	22:05	77B	B32
DL	8008	INT	6:00	757	B36						
DL	422	DOM	7:05	738	B36	DL	425	DOM	8:35	738	B36
						DL	535	DOM	9:55	757	B36
DL	4	INT	11:15	787	B36						
DL	8001	INT	12:30	76L	B36						
						DL	166	INT	17:05	76L	B36
DL	5980	DOM	18:59	77B	B36						
						DL	1	INT	20:30	787	B36
DL	344	INT	21:00	738	B36						
DL	9999	DOM	22:15	787	B34	DL	3	INT	8:55	787	B34
DL	1417	DOM	10:14	738	B34	DL	941	DOM	10:55	738	B34
DL	165	INT	11:45	76L	B34						
						DL	97	DOM	13:25	738	B34
DL	30	DOM	14:57	738	B34	DL	8009	INT	16:00	738	B34
						DL	82	INT	17:35	76L	B34
DL	744	DOM	17:57	757	B34						

DL	5983	DOM	18:50	76L	B34		DL	8010	INT	22:00	76L	B34
DL	408	DOM	6:25	738	B38		DL	419	DOM	8:25	738	B38
							DL	1001	DOM	10:55	738	B38
DL	127	INT	13:40	787	B38		DL	132	INT	15:50	787	B38
DL	94	DOM	16:11	738	B38		DL	79	DOM	17:05	738	B38
DL	136	DOM	17:35	76L	B38		DL	112	INT	19:45	76L	B38
							DL	96	INT	21:00	757	B38
DL	1000	DOM	21:29	738	B38							
DL	438	DOM	0:26	738	B37		DL	441	INT	8:00	738	B37
DL	5988	DOM	8:25	73W	B37		DL	494	INT	10:20	73W	B37
							DL	6139	DOM	11:40	73W	B37
DL	133	INT	14:20	787	B37		DL	30	INT	16:20	787	B37
DL	167	INT	17:20	76L	B37		DL	84	DOM	19:20	76L	B37
DL	402	DOM	20:03	738	B37		DL	1667	DOM	20:50	738	B37
DL	8040	INT	5:45	738	B40		DL	249	DOM	8:25	738	B40
DL	4995	DOM	9:30	757	B40		DL	1862	DOM	10:55	757	B40
DL	1861	DOM	11:37	757	B40							
DL	123	INT	13:30	757	B40		DL	8008	INT	14:45	757	B40
DL	8003	INT	15:30	757	B40		DL	375	INT	16:00	757	B40
KLM		INT	16:50	772	B40		KLM		INT	19:00	772	B40
DL	316	DOM	20:01	757	B40		DL	154	INT	22:10	757	B40
DL	410	DOM	22:31	738	B40							
DL	129	INT	6:30	76T	B41							
DL	436	DOM	7:42	738	B41		DL	8006	INT	10:00	738	B41
							DL	9999	DOM	11:05	738	B41
DL	175	INT	12:15	757	B41							
DL	89	INT	14:00	76L	B41							
							DL	128	INT	15:50	76T	B41
DL	99	INT	17:10	76T	B41		DL	98	INT	19:15	76T	B41
DL	8006	INT	20:00	738	B41		DL	423	DOM	20:45	738	B41
DL	486	INT	22:05	738	B41							
							DL	309	DOM	9:00	757	B42
							DL	5492	DOM	11:00	73W	B42
DL	8000	INT	11:30	76L	B42		DL	88	INT	16:15	76L	B42
DL	8002	INT	16:50	76L	B42		DL	140	INT	19:00	76L	B42
DL	566	INT	21:01	757	B42		DL	162	INT	22:25	757	B42
							DL	431	INT	9:00	757	B39
							DL	8005	INT	10:00	77B	B39
DL	119	INT	11:15	787	B39		DL	411	DOM	12:20	787	B39
DL	5507	DOM	12:43	73W	B39		DL	5356	DOM	13:50	73W	B39
DL	8005	INT	14:30	77B	B39							
DL	83	INT	15:30	76L	B39		DL	8001	INT	17:30	76L	B39
DL	5112	DOM	17:55	77B	B39							
							DL	8016	INT	20:00	77B	B39
							DL	16	INT	20:55	77B	B39
DL	493	INT	22:03	73W	B39							
							DL	307	INT	9:00	757	B47
							DL	5508	DOM	11:05	73W	B47
DL	97	INT	11:50	757	B47							
DL	450	INT	13:29	738	B47		DL	407	DOM	13:59	738	B47
DL	79	INT	14:20	76L	B47		DL	72	INT	17:00	76L	B47

DL	135	INT	17:30	76L	B47		DL	8002	INT	19:30	76L	B47
DL	314	INT	21:01	757	B47		DL	54	INT	22:55	757	B47
DL	8004	INT	8:09	77B	B43		DL	5246	DOM	8:30	77B	B43
DL	1858	DOM	6:30	738	B43		DL	8007	INT	10:00	738	B43
							DL	565	INT	11:15	757	B43
							DL	415	DOM	12:40	738	B43
DL	107	INT	13:55	76L	B43		DL	243	DOM	16:30	76L	B43
DL	85	INT	16:55	76L	B43		DL	160	INT	19:00	76L	B43
							DL	136	INT	20:50	76L	B43
							DL	102	INT	22:05	757	B43
DL	481	DOM	22:31	738	B43							
							DL	929	DOM	8:20	757	B45
DL	5505	DOM	10:32	73W	B45		DL	5248	DOM	11:15	73W	B45
DL	5982	DOM	11:50	73W	B45		DL	5017	DOM	12:50	73W	B45
DL	141	INT	13:55	76L	B45		DL	8000	INT	16:00	76L	B45
DL	73	INT	16:50	76L	B45		DL	106	INT	19:05	76L	B45
DL	102	DOM	20:15	77B	B45		DL	8004	INT	22:30	77B	B45
DL	782	DOM	23:19	738	B45							

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Figure IIB-C Volume Map for Arriving Flights Frontage Peak Hour



Green Quadrant
Terminal 2 Arriving Flights Frontage Peak Hour

5:45 - 6:45 PM



Table IIB-A: Intersection LOS Analysis Summary (Existing)

DELTA TERMINAL REDEVELOPMENT (Existing)						
SIGNALIZED INTERSECTION TRAFFIC LEVELS OF SERVICE						
Green Quadrant Peak Hour (3:45 - 4:45 PM)						
Int. ID	INTERSECTION & APPROACH	App.	Mvt.	V/C	Delay	LOS
JFK-GQ-001	Terminal 1 Lower Level Entrance Ramps Merge					
	From Van Wyck Expressway to Inner Arrivals	EB	TR	0.28	21.1	C
	From Van Wyck Expressway to Outer Arrivals	EB	T	0.57	24.5	C
	From Terminal 8 Ramp	SE	L	0.25	33.9	C
	From JFK Expressway/Recirculation Road to Inner Roadway	SB	T	0.33	31.3	C
	From JFK Expressway/Recirculation Road to Outer Roadway	SB	L	0.69	38.3	D
	Overall Intersection	-	-	0.56	33.4	C
JFK-GQ-002	Terminal 1 Upper Level Entrance Ramps Merge					
	From Van Wyck Expressway	EB	T	0.37	9.8	A
	From JFK Expressway/Recirculation Road	SB	L	0.09	14.5	B
	Overall Intersection	-	-	0.27	10.4	B
JFK-GQ-003	Terminal 1 Lower Level Exposed Pedestrian Crossing					
	Roadway	EB	T	0.62	22.0	C
	Overall Intersection	-	-	0.62	22.0	C
JFK-GQ-004	Terminal 1 Lower Level Covered Pedestrian Crossing					
	Roadway	EB	T	0.29	11.4	B
	Overall Intersection	-	-	0.29	11.4	B
JFK-GQ-005	Terminal 1 Lower Level Exit Merge					
	From Outer Roadway	EB	TR	0.37	0.8	A
	From Inner Roadway	NE	RR2	0.65	16.5	B
	Overall Intersection	-	-	0.44	5.2	A
JFK-GQ-006a	Terminal 2 All Levels Exit Ramps Merge					
	Outer Roadway (1st stop light) & T2 Ped Crossing	EB	T	0.62	21.7	C
	Overall Intersection	-	-	0.62	21.7	C
JFK-GQ-006b	Terminal 2 All Levels Exit Ramps Merge					
	Outer Roadway (2nd stop light)	EB	TR	0.65	4.7	A
	Outer Roadway (2nd stop light) to Terminal 3	EB	R	0.58	5.6	A
	From Terminal 2 Lower Level	NE	RR2	0.79	64.8	E
	From Terminal 2 Upper Level	NB	RR2	0.18	17.4	B
	Overall Intersection	-	-	0.48	13.6	B
JFK-GQ-007	Terminal 3 Middle Level Pedestrian Crossing					
	From Terminal 2 roadways	EB	T	0.45	4.7	A
	From T1 Upper Level	SE	L	0.39	14.6	B
	Overall Intersection	-	-	0.45	8.0	A
JFK-GQ-008	Terminal 3 All Levels Exit Ramps Merge					
	From Terminal 3 Upper Level	NE	L	0.02	7.1	A
	From Terminal 3 Lower Level	NB	T	0.29	7.7	A
	Overall Intersection	-	-	0.30	7.6	A
JFK-GQ-009	Terminal 3 Exit to Airport Exit and Parking					
	From Green Garage	EB	L	0.77	45.1	D
	From Terminals 1 and 2	NB	T	0.61	8.0	A
	From Terminal 3	NW	R	0.81	35.6	D
	Overall Intersection	-	-	0.70	24.1	C

Table IIB-B: Intersection LOS Analysis Summary (Scenario 2-Part B)

DELTA TERMINAL REDEVELOPMENT (SCENARIO 2)						
SIGNALIZED INTERSECTION TRAFFIC LEVELS OF SERVICE						
Green Quadrant Peak Hour (3:45 - 4:45PM)						
Int. ID	INTERSECTION & APPROACH	App.	Mvt.	V/C	Delay	LOS
JFK-GQ-001	Terminal 1 Lower Level Entrance Ramps Merge					
	From Van Wyck Expressway to Inner Arrivals	EB	TR	0.25	18.1	B
	From Van Wyck Expressway to Outer Arrivals	EB	T	0.19	16.9	B
	From Terminal 8 Ramp	SE	L	0.32	42.9	D
	From JFK Expressway/Recirculation Road to Inner Roadway	SB	T	0.45	38.1	D
	From JFK Expressway/Recirculation Road to Outer Roadway	SB	L	0.30	35.8	D
	Overall Intersection	-	-	0.30	33.9	C
JFK-GQ-002	Terminal 1 Upper Level Entrance Ramps Merge					
	From Van Wyck Expressway	EB	T	0.38	9.9	A
	From JFK Expressway/Recirculation Road	SB	L	0.10	15.3	B
	Overall Intersection	-	-	0.27	10.6	B
JFK-GQ-003	Terminal 1 Lower Level Exposed Pedestrian Crossing					
	Roadway	EB	T	0.19	11.2	B
	Overall Intersection	-	-	0.19	11.2	B
JFK-GQ-004	Terminal 1 Lower Level Covered Pedestrian Crossing					
	Roadway	EB	T	0.26	11.0	B
	Overall Intersection	-	-	0.26	11.0	B
JFK-GQ-005	Terminal 1 Lower Level Exit Merge					
	From Outer Roadway	EB	TR	0.14	2.9	A
	From Inner Roadway	NE	RR2	0.67	21.5	C
	Overall Intersection	-	-	0.25	12.1	B
JFK-GQ-006a	Terminal 2 All Levels Exit Ramps Merge					
	Outer Roadway (1st stop light) & T2 Ped Crossing	EB	T	0.26	6.3	A
	Overall Intersection	-	-	0.26	6.3	A
JFK-GQ-006b	Terminal 2 All Levels Exit Ramps Merge					
	Outer Roadway (2nd stop light)	EB	TR	0.40	2.4	A
	From Terminal 2 Lower Level	NE	RR2	0.55	43.4	D
	From Terminal 2 Upper Level	NB	RR2	0.11	19.6	B
	Overall Intersection	-	-	0.32	11.6	B
JFK-GQ-007	Terminal 3 Middle Level Pedestrian Crossing					
	From Terminal 2 roadways	EB	T	0.38	3.8	A
	From T1 Upper Level	SE	L	0.36	9.0	A
	Overall Intersection	-	-	0.38	5.6	A
JFK-GQ-008	Terminal 3 All Levels Exit Ramps Merge					
	From Terminal 3 Upper Level	NE	L	0.00	0.0	-
	From Terminal 3 Lower Level	NB	T	0.00	0.0	-
	Overall Intersection	-	-	0.00	0.0	A
JFK-GQ-009	Terminal 3 Exit to Airport Exit and Parking					
	From Green Garage	EB	L	0.77	50.7	D
	From Terminals 1 and 2	NB	T	0.34	0.7	A
	From Terminal 3	NW	R	0.00	0.0	-
	Overall Intersection	-	-	0.42	16.5	B

II-C. Traffic Impacts on the Red Quadrant

The following documents the traffic impacts on the Red Quadrant resulting from the implementation of the Delta Airlines Redevelopment Plan known as Scenario 2. This plan calls for the relocation of several International Air Terminal (IAT) flights associated with seven gates in Terminal 4 (Blue Quadrant) to Terminal 8 (Red Quadrant). One additional gate will be made available for the relocated IAT flights in the Red Quadrant, which will bring the total number of gates used by IAT to eight. The additional IAT airlines and their flights will share Terminal 8 with American Airlines.

A portion of the following flight schedule lists the typical daily flights to be added to the eight gates allocated for IAT flights in Terminal 8:

- **IAT Typical Day with Live Hardstands** from May 14, 2009. Referred in this report as flight schedule 2012(4).

Section B of flight schedule 2012(4) represents the flights associated with seven IAT gates that will be relocated to Terminal 8 in the Red Quadrant, therefore all traffic volumes added to the Red Quadrant roadway network were derived from this section of the flight schedule.

For analysis purposes, the air-passengers generated by Section B of this flight schedule were converted into vehicles on the roadway network by using field observed traffic patterns, estimated transfer rates, modal splits, and vehicle utilization factors. This conversion produced 24-hour vehicular volume profiles for each key movement in the roadway network that were used for the operational analyses of key land-side facilities, such as signalized intersections, roadway segments, terminal frontages, the parking facility, and weaving sections. This white paper summarizes the methodologies and results of these studies due to the addition of several IAT flights to the Red Quadrant.

The results of the traffic analyses for the Red Quadrant indicate that under Scenario 2, all signalized intersections operate at Level-of-Service (LOS) B or better, and all roadway segments leading into and out of the quadrant operate at LOS C or better, with the exception of the entrance ramp from the Van Wyck Expressway which operates at LOS D. Additionally, the maximum occupancy rate for the Red Parking facility, which is currently at 38% capacity, is projected to increase to 64%. The critical weaving section where recirculating traffic merges with the inbound Van Wyck Expressway vehicles would operate at LOS B, with occasional traffic queues spilling back into the weaving area from the downstream intersections. These queues would clear within the next signal cycle.

The results of the terminal frontage analyses indicate that all frontages, with the exception of the shuttles-only curb segment in the Arriving Flights Middle frontage, have enough capacity to process the anticipated traffic demand. The shuttles-only curb is expected to operate over capacity (CU = 128%) if they are to remain in their existing designated area. A portion of the adjacent upstream curb used by private autos and for-hires in the Middle frontage may be used by the shuttles to alleviate the congestion in the shuttles curb.

If the aforementioned recommendation for the shuttles-only curb is followed, then Scenario 2 represents a viable option for the Red Quadrant roadway network.

Introduction

This white paper summarizes the findings of a traffic study conducted for the Red Quadrant roadway network corresponding with the expansion plan of Terminal 4 (Blue Quadrant) known as Scenario 2. Under this plan, International Air Terminal (IAT) flights associated with seven gates would be relocated from the Blue Quadrant to Terminal 8 (Red Quadrant). Moreover, an additional gate will be made available to other IAT flights. In all, 54 flights associated with eight IAT-dedicated gates will be combined with the current operations of American Airlines in Terminal 8.

Future traffic volumes on the roadway network derived from the proposed plan were calculated and used to perform traffic operational analyses at signalized intersections, key roadway segments, terminal frontages, the parking facility, and a critical weaving section in the Red Quadrant.

Operational Analysis Methodology

The methods presented in the Highway Capacity Manual, along with a Synchro-7 traffic simulation model developed for this study, and several specialized Excel spreadsheets were the main tools used to perform the operational analyses. The parameters describing the quality of service of each roadway facility evaluated in this study are: the average vehicular delay at signalized intersections, the Volume to Capacity (V/C) ratio at critical roadway segments, and the Capacity Utilization (CU) factor for terminal frontages and the parking facility.

Vehicular Traffic Generated By the Flight Schedules

Traffic volume projections for all key movements in the roadway network under Scenario 2 were derived from the following flight schedule:

- **IAT Typical Day with Live Hardstands** from May 14, 2009. Referred in this report as flight schedule 2012(4).

Future IAT flights are shown in flight schedule 2012(4), and this schedule was divided into three main sections for the purpose of this study: Section B contains the flights that will be relocated to Terminal 8, whereas Sections A and C will remain in the Blue Quadrant. This white paper focuses on the operational impacts on the Red Quadrant caused by the additional traffic generated by flights on Section B. See **Figure IIC-A** in the Appendix for a working copy of flight schedule 2012(4).

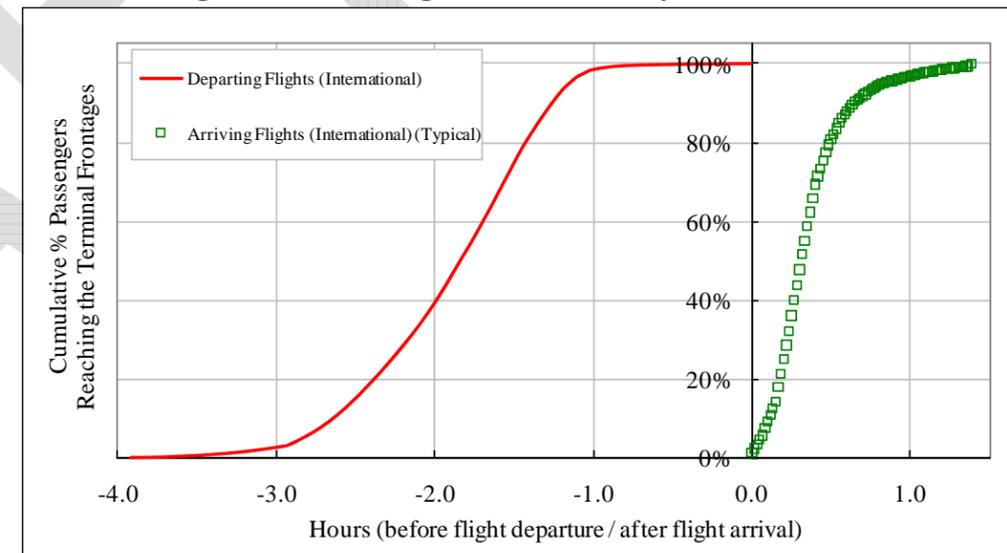
A daily vehicular demand profile was calculated for each flight using the air-passenger capacity of each plane (expressed in number of seats) as a key parameter. The vehicular demand was grouped into two main categories: vehicles generated by arriving flights and vehicles generated by departing flights. The conversion from air-passenger capacity per plane to vehicle demand required the utilization of the following factors:

- Number of seats per plane,

- Load Factors- establishes the percentage utilization of each plane’s capacity (90% was used for this study),
- Passengers Arrival Distribution- describes how long after each flight arrival time will passengers start reaching the arriving flights frontage (see **Figure IIC-1**),
- Passengers Departure Distribution- describes how long before each flight departure time will passengers start reaching the departing flights frontage (see **Figure IIC-1**),
- Passenger Transfer Rates- the percentage of passengers in transit for connecting flights,
- Modal Splits- the ratios by mode of transportation that are utilized by the air-passengers, and
- Vehicle Occupancy Rates- the average number of air-passengers using each vehicle type.

These profiles were then added (in 15-minute intervals) to produce a 24-hour total traffic demand profile by category (Arrivals and Departures). The factors used in the study are shown in **Table IIC-1**.

Figure IIC-1: Passengers Arrival and Departure Distributions



Source: Delta Airlines, JFK Redevelopment Concept Design Final Report, April 2008 (Departing Flights)

Table IIC-1: Factors Used to Convert From Air-Passengers to Traffic Demand

Flight Schedule	Vehicle Type	Departing Flights						Arriving Flights					
		Transfer Rates		Modal Split		Vehicle Occupancy		Transfer Rates		Modal Split		Vehicle Occupancy	
		Intern.	Dom.	Intern.	Dom.	Intern.	Dom.	Intern.	Dom.	Intern.	Dom.	Intern.	Dom.
2012(4) Future IAT	Autos	20.0%	20.0%	31%	31%	1.99	1.99	30.0%	30.0%	31%	31%	1.53	1.53
	Taxis	20.0%	20.0%	24%	24%	2.07	2.07	30.0%	30.0%	24%	24%	1.42	1.42
	Black Cars	20.0%	20.0%	17%	17%	1.86	1.86	30.0%	30.0%	17%	17%	1.79	1.79
	Shuttle Buses	20.0%	20.0%	8%	8%	4.51	4.51	30.0%	30.0%	8%	8%	4.22	4.22
	Mass Transit	20.0%	20.0%	3%	3%	4.73	4.73	30.0%	30.0%	3%	3%	4.00	4.00
	Other (e.g., AirTrain)	20.0%	20.0%	17%	17%	-	-	30.0%	30.0%	17%	17%	-	-

Source: JFK Abstract Week Traffic Surveys, August 2007

Figures IIC-2 and IIC-3 show the resulting 24-hour volume profiles for air-passengers and vehicles generated by Section B of the flight schedule 2012(4).

Figure IIC-2: Air-Passenger Profiles Generated by Section B of Flight Schedule 2012(4)

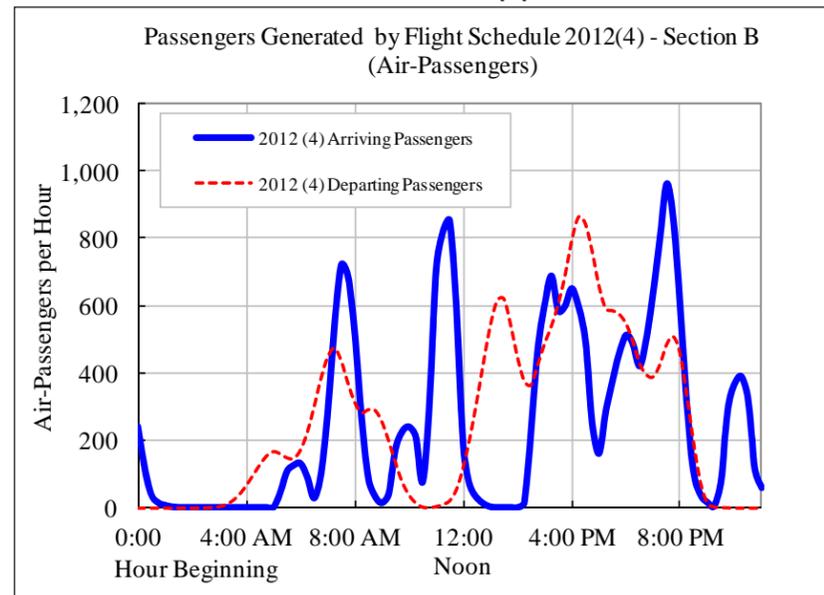
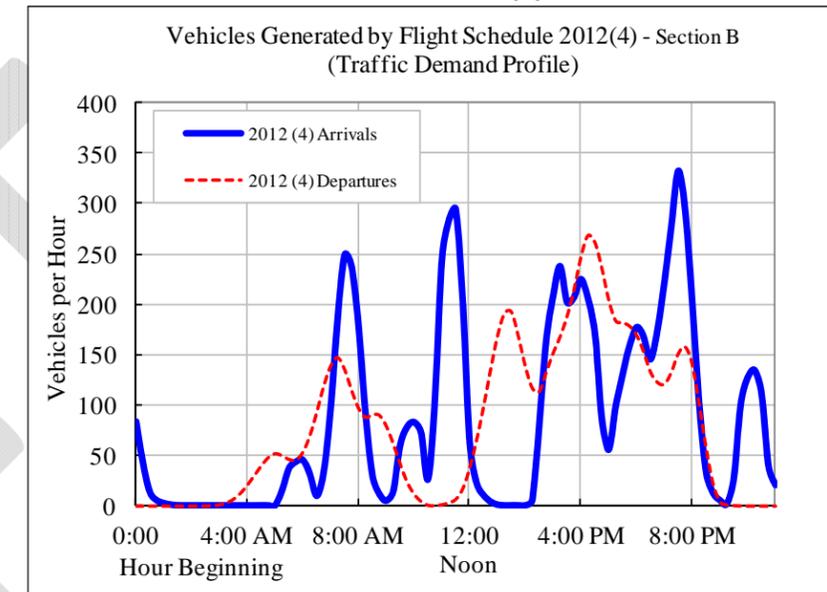


Figure IIC-3: Traffic Demand Profiles Generated by Section B of Flight Schedule 2012(4)



Once the vehicular demand profile associated with the future flight schedule was calculated, it was assigned to the roadway network through a set of routes previously defined to reproduce traffic patterns observed in the field. For example, during the morning period, about 80% of the traffic entering the Red Quadrant that was destined for the departing flights frontage used the Van Wyck Expressway (VWE), of which 13% went straight to parking and the remaining 87% went directly to the Departing Flights frontages. The latter were then further broken down by vehicles heading toward the airport exit, recirculating back to the frontage, parking, or doing a combination of the three. Leaving the quadrant, 56% of the traffic used the VWE and the remaining 44% used the JFK Expressway. These percentage splits were calculated and applied to the demand profiles in 15-minute intervals for the entire day to produce traffic volumes for all existing movements.

The network volumes resulting from this assignment process were added to the existing traffic volumes in the Red Quadrant roadway network. The resulting volumes represent the traffic conditions in the Red Quadrant under Scenario 2 and were used in the operational analyses.

Overall Traffic Indicators

The total numbers of additional flights, passengers, and vehicular demand expected for the Red Quadrant on a typical day under Scenario 2 are shown in **Table IIC-2**.

Table IIC-2: Daily Volumes Added to the Red Quadrant

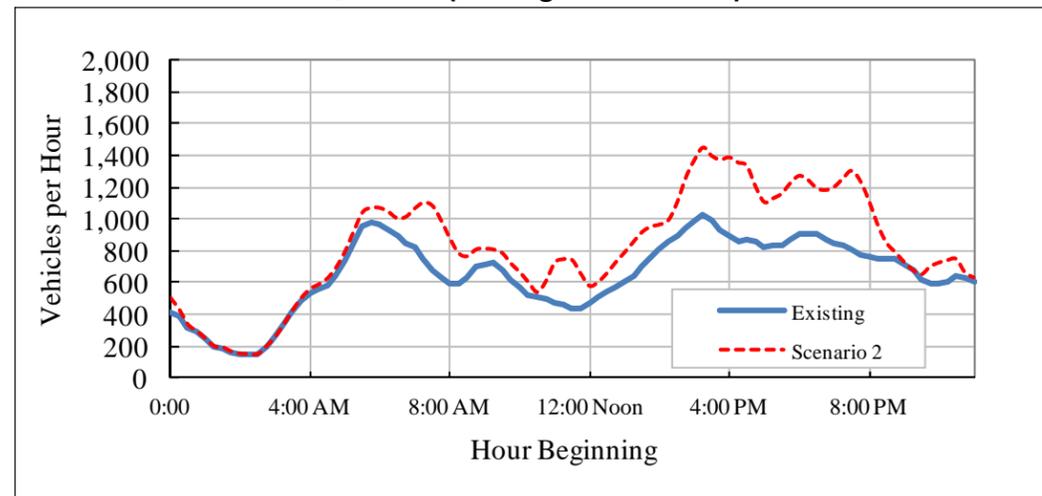
Number of Daily:	Daily Volumes Generated by Flight Schedule 2012(4)- To be Added to the Red Quadrant
Flights	54
Air-Passengers	11,844
Vehicles	3,878

-Air-Passengers produced include those connecting to other flights

-Vehicles shown are destined for the curb

A comparison of the 24-hour traffic demand entering the quadrant was performed between the existing conditions and Scenario 2 and is presented in **Figure IIC-4**. Generally, these two profiles follow similar trends. Under Scenario 2, a total of about 3,900 daily vehicles are to be added to the existing 15,505 vehicles entering the Red Quadrant. The peak traffic demand for the existing conditions and Scenario 2 occurs from 3:15 to 4:15 PM, when the existing conditions peak to 1,025 vehicles per hour. This is about 425 vehicles per hour less than Scenario 2’s peak traffic demand.

Figure IIC-4: Terminal 8 Traffic Demand Profile – Volumes Entering the Red Quadrant (Existing vs. Scenario 2)



Three specific hours are critical for the Red Quadrant analysis under Scenario 2 as they reflect the peak traffic demand on the roadways and terminal frontages. The whole roadway network (system-wide) peaks from 3:15 to 4:15 PM, and the Departing Flights and Arriving Flights frontages peak from 7:00 to 8:00 AM and from 7:30 to 8:30 PM, respectively.

Tables IIC-3A through IIC-5B summarize key traffic volumes routed in the Red Quadrant during the three critical hours. They illustrate the general traffic patterns of vehicles bound for the terminal frontages, recirculation road, and/or parking facility.

Table IIC-3A: Key Traffic Volumes and Operational Characteristics During the System-wide Peak Hour (Existing and Scenario 2)

System-wide Peak Hour :					3:15 - 4:15 PM
Destination	Existing Traffic Volume Entering the Quadrant	Added Traffic Volume Entering the Quadrant	Scenario 2: Resulting Traffic Volume (Existing + Added)	Scenario 2: % Entering the Quadrant (by Destination)	Scenario 2: % Recirculating Back to Frontage and/or Parking
Vehicles traveling straight to Parking	107	79	186	13%	-
Vehicles traveling to the Arriving Flights Frontage	405	203	608	42%	31%
Vehicles traveling to the Departing Flights Frontage	513	142	655	45%	29%
Total	1025	424	1449	100%	

Table IIC-3B: Parking Volumes During the System-wide Peak Hour (Existing and Scenario 2)

System-wide Peak Hour :					3:15 - 4:15 PM
Destination	Existing Traffic Volume Going to Park	Number of Vehicles Added to Parking	Scenario 2: Resulting Traffic Volume (Existing + Added)	Scenario 2: % Entering Parking Facility (by Destination)	
Vehicles traveling straight to Parking	107	79	186	53%	
Parking Vehicles using Arriving Flights Frontage	57	42	99	28%	
Parking Vehicles using Departing Flights Frontage	38	28	66	19%	
Total Vehicles Parking	202	149	351	100%	

Table IIC-4A: Key Traffic Volumes and Operational Characteristics During the Departing Flights Frontage Peak Hour (Existing and Scenario 2)

Departing Flights Frontage Peak Hour :					7:00 - 8:00 AM
Destination	Existing Traffic Volume Entering the Quadrant	Added Traffic Volume Entering the Quadrant	Scenario 2: Resulting Traffic Volume (Existing + Added)	Scenario 2: % Entering the Quadrant (by Destination)	Scenario 2: % Recirculating Back to Frontage and/or Parking
Vehicles traveling straight to Parking	75	48	123	12%	-
Vehicles traveling to the Arriving Flights Frontage	135	83	218	20%	34%
Vehicles traveling to the Departing Flights Frontage	606	120	726	68%	25%
Total	816	251	1067	100%	

Table IIC-5A: Key Traffic Volumes and Operational Characteristics During the Arriving Flights Frontage Peak Hour (Existing and Scenario 2)

Arriving Flights Frontage Peak Hour :					7:30 - 8:30 PM
Destination	Existing Traffic Volume Entering the Quadrant	Added Traffic Volume Entering the Quadrant	Scenario 2: Resulting Traffic Volume (Existing + Added)	Scenario 2: % Entering the Quadrant (by Destination)	Scenario 2: % Recirculating Back to Frontage and/or Parking
Vehicles traveling straight to Parking	115	106	221	17%	-
Vehicles traveling to the Arriving Flights Frontage	465	267	732	56%	37%
Vehicles traveling to the Departing Flights Frontage	229	121	350	27%	37%
Total	809	494	1303	100%	

Table IIC-4B: Parking Volumes During the Departing Flights Frontage Peak Hour (Existing and Scenario 2)

Departing Flights Frontage Peak Hour :					7:00 - 8:00 AM
Destination	Existing Traffic Volume Going to Park	Number of Vehicles Added to Parking	Scenario 2: Resulting Traffic Volume (Existing + Added)	Scenario 2: % Entering Parking Facility (by Destination)	
Vehicles traveling straight to Parking	75	48	123	59%	
Parking Vehicles using Arriving Flights Frontage	23	15	38	18%	
Parking Vehicles using Departing Flights Frontage	29	19	48	23%	
Total Vehicles Parking	127	82	209	100%	

Table IIC-5B: Parking Volumes During the Arriving Flights Frontage Peak Hour (Existing and Scenario 2)

Arriving Flights Frontage Peak Hour :					7:30 - 8:30 PM
Destination	Existing Traffic Volume Going to Park	Number of Vehicles Added to Parking	Scenario 2: Resulting Traffic Volume (Existing + Added)	Scenario 2: % Entering Parking Facility (by Destination)	
Vehicles traveling straight to Parking	115	106	221	53%	
Parking Vehicles using Arriving Flights Frontage	72	67	139	33%	
Parking Vehicles using Departing Flights Frontage	30	28	58	14%	
Total Vehicles Parking	217	201	418	100%	

Traffic Analysis

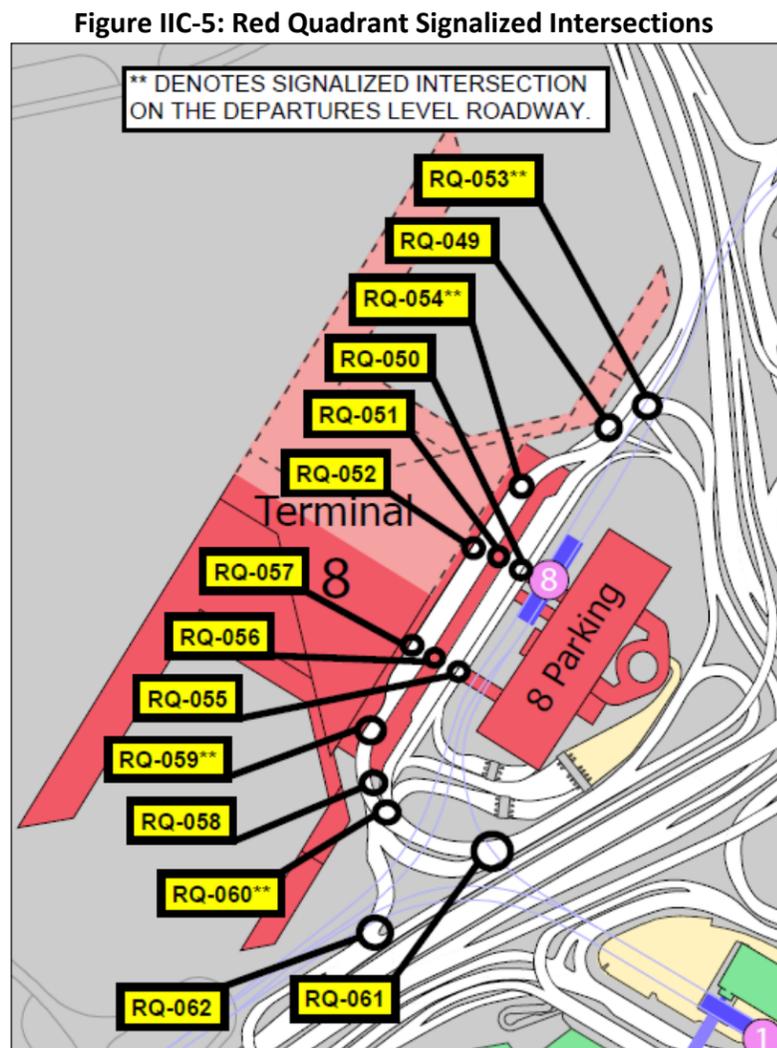
This section describes the methodologies and main findings of the traffic operational analyses performed for the Red Quadrant roadway network under Scenario 2. A comparison with the existing conditions was also conducted to better illustrate traffic impacts. See **Figure IIC-B** in the Appendix for a Red Quadrant map showing existing roadway and intersection configurations.

Traffic volumes used for the existing conditions analyses are based on data collected in the summer of 2007. Traffic operational analyses were performed for all signalized intersections and key roadway segments during the system-wide peak hour (3:15 to 4:15 PM for both the existing

conditions and Scenario 2), whereas the terminal frontage analyses for Departures and Arrivals were performed during their respective peak hours.

Signalized Intersection Analysis

Traffic operational analyses for all signalized intersections were performed using a Synchro-7 model that was developed for the study area. Overall, there are 14 signalized intersections in question, and their locations are shown in Figure IIC-5. They are rated in terms of their Level of Service (LOS), with LOS A having the best operational conditions and LOS F having the worst.



Existing Conditions

Under the existing conditions, one signalized intersection in the Red Quadrant, RQ-062, operates at LOS B, while the rest operate at LOS A. Intersection RQ-062 experiences the highest overall delay of about 10 seconds per vehicle, and its Volume to Capacity (V/C) ratio (a measure of congestion where values over 1.0 indicate overcapacity conditions) is 0.31. For a complete LOS summary of the existing conditions, see Table IIC-A in the Appendix.

Scenario 2

For Scenario 2, all of the intersections are expected to operate at LOS B or better. Intersection RQ-061 would experience the highest delay of about 13 seconds per vehicle, while RQ-049 would operate with the highest V/C ratio of 0.46. In all, four intersections would degrade their LOS from A to B due to the addition of vehicles. For a complete LOS summary for Scenario 2, see Table IIC-B in the Appendix.

Roadway Segment Analysis

The level of service of the key roadway segments in the Red Quadrant was calculated for the system peak hour (3:15 to 4:15 PM for both the existing conditions and Scenario 2).

Existing Conditions

Most of the key roadway segments leading into and out of the quadrant operate at LOS B or better during the existing conditions. The exception is the entrance ramp from the VWE to the Red Quadrant that operates at LOS C.

Scenario 2

It is anticipated that most of the key roadway segments leading into and out of the quadrant would operate at LOS C or better under Scenario 2 due to the increase in volume on the roadways. The exception is the entrance ramp from the VWE to the Red Quadrant that is expected to operate at LOS D.

Terminal Frontage Analysis

Terminal 8 has five terminal frontages; two are common frontages used by vehicles dropping off departing passengers, and the other three are used by vehicles picking up arriving passengers.

Table IIC-6 summarizes the different terminal frontages and their total effective curb lengths. All curb measurements exclude the curbs along pedestrian crossings.

Table IIC-6: Terminal Frontage Curb Lengths

Terminal Frontage	Total Effective Curb Length (ft)	
Departures Inner	550	
Departures Outer	630	
Arrivals Inner	Inner Curb	450
	Outer Curb-Taxis	450
Arrivals Middle	Shuttles Curb	150
	Public Curb	400
Arrivals Outer	490	

The methodology employed for this analysis uses the Poisson distribution to calculate the minimum curb length required to accommodate a predetermined hourly demand volume. The following inputs are required:

- Total traffic volume destined for the terminal frontage during the peak hour,
- Traffic composition (by vehicle type),
- Average dwell times (by vehicle type), and
- Average curb length occupied by each vehicle type.

Listed in **Table IIC-7** are the dwell times and vehicle lengths used in the analysis.

Table IIC-7: Dwell Times and Vehicle Lengths

Vehicle Type	Departing Flights Frontages		Arriving Flights Frontages	
	Dwell Times (min)	Vehicle Length plus gap (feet)	Dwell Times (min)	Vehicle Length plus gap (feet)
Autos	1.82	25	1.76	25
Taxis	1.15	25	1.77	25
Black Cars	1.41	25	1.96	25
Shuttle Buses	1.39	30	2.76	30
Mass Transit	1.67	40	2.68	40
Others	2.00	30	2.00	30

Dwell times are typical of similar terminal operations

The demand for curb length in all frontages was calculated, and the resulting values were divided by the effective curb lengths to determine the Capacity Utilization (CU) factors. CU values that are within the 90 - 100% range indicate an undesirable level of service for airport patrons, and any value

greater than 100% represents operational failure. The CU for the inner, middle, and outer Arriving Flights frontages were calculated for the curb areas designated for each vehicle type, whereas the Departing Flights frontages were evaluated based on all vehicle types sharing a common frontage.

Existing Conditions

In 2007, the highest traffic volume (all vehicle types) entering the two Departing Flights frontages was 729 vehicles in one hour, which took place from 5:30 to 6:30 AM. The combined minimum curb length required to accommodate this volume is 544 feet resulting in a CU factor of 46%.

The traffic volume entering the three Arriving Flights frontages (inner, middle, and outer) reaches its peak from 6:15 to 7:15 PM with 547 vehicles. All of the individual frontages in the Arrivals level are operating below their capacity, with the CU ranging from 10% for the inner curb of the Inner frontage to 64% for the shuttles-only curb. All existing terminal frontages in the Red Quadrant have enough capacity to accommodate the existing demand for dwelling space.

Scenario 2

Under this scenario, the highest traffic demand for dwelling space anticipated for the two Departing Flights frontages is 820 vehicles per hour, which would take place from 7:00 to 8:00 AM. This demand requires at least 572 feet of curb and results in a frontage Capacity Utilization factor of 48%. Traffic demand destined for the three Arriving Flights frontages would peak from 7:30 to 8:30 PM with a total of 853 vehicles per hour. All of the frontages in the Arrivals level are expected to operate below capacity, with the exception of the curb area designated for shuttles-only, which is anticipated to operate over capacity (CU = 128%).

Currently, the total effective curb length designated for shuttles is about 150 feet, which is not long enough to accommodate future volumes. A portion of the adjacent upstream curb used by private autos and for-hires may be used by the shuttles to alleviate the congestion in the shuttles curb.

Table IIC-8 below summarizes the minimum curb length requirement for the Departing and Arriving Flights frontages under both the existing conditions and Scenario 2.

Table IIC-8: Terminal Frontage Analyses Results

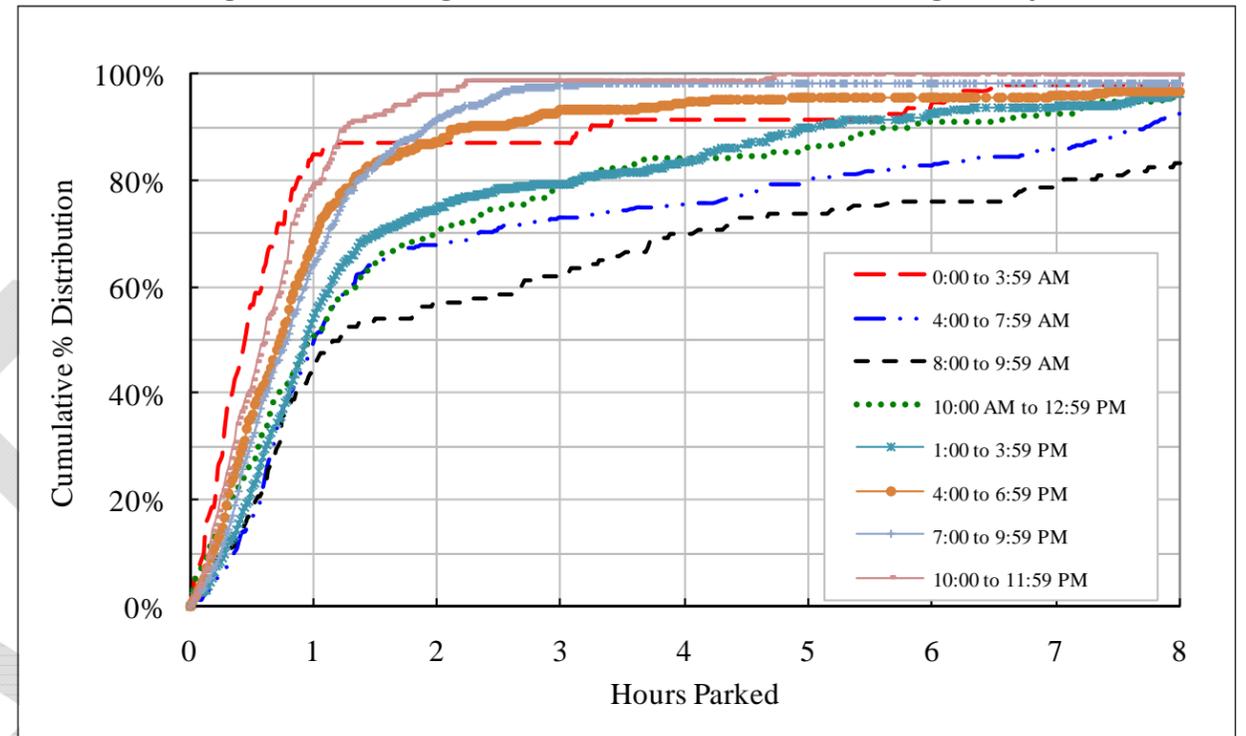
Terminal Frontage	Peak Hour	Traffic Volumes During the Peak Hour					Curb Length (feet)		Capacity Utilization (%)
		Autos and Black Cars	Taxis	Shuttles	Mass Transit (Non-MTA) and Others	Total	Minimum Curb Length Required	Available Curb Length	
EXISTING CONDITIONS									
Departing Flights Frontage (Common Frontage)	5:30 - 6:30 AM	573	104	30	22	729	544	1180	46%
Arriving Flights Inner Frontage (Inner Curb)	6:15 - 7:15 PM	-	-	-	8	8	43	450	10%
Arriving Flights Inner Frontage (Outer Curb-Taxis)		-	141	-	-	141	166	450	37%
Arriving Flights Middle Frontage (Shuttles Curb)		-	-	39	-	39	96	150	64%
Arriving Flights Middle (Public Curb) and Outer Frontage		359	-	-	-	359	320	890	36%
SCENARIO 2 (with Existing Frontage Configuration)									
Departing Flights Frontage (Common Frontage)	7:00 - 8:00 AM	475	238	79	28	820	572	1180	48%
Arriving Flights Inner Frontage (Inner Curb)	7:30 - 8:30 PM	-	-	-	33	33	128	450	28%
Arriving Flights Inner Frontage (Outer Curb-Taxis)		-	245	-	-	245	257	450	57%
Arriving Flights Middle Frontage (Shuttles Curb)		-	-	81	-	81	192	150	128%
Arriving Flights Middle (Public Curb) and Outer Frontage		494	-	-	-	494	440	890	49%

The above analysis assumes that all departures HOVs go to the Departures Frontage.

Parking Analysis

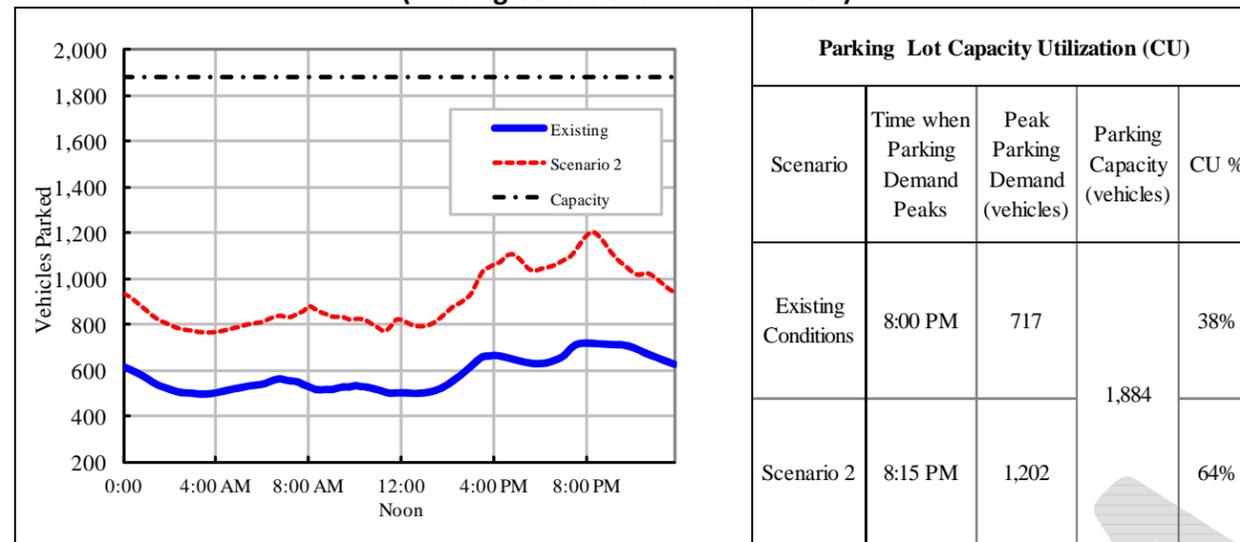
To evaluate the parking demand needs for the Red Parking facility, a parking study was conducted. Parking data containing the exact time that vehicles entered and exited the parking facility were gathered and processed to produce eight typical “parked time” distributions throughout a typical day. This data was collected in March 2009, and **Figure IIC-6** shows the eight distributions used in the analysis representing eight distinct time periods. For example, for vehicles entering the parking facility between the hours of 8:00 AM and 9:59 AM, 70% remained parked for four hours or less.

Figure IIC-6: Parking Time Distributions for the Red Parking Facility



These distributions were applied to the new vehicular volumes entering the parking lot under Scenario 2 to determine the future 24-hour parking accumulation profile. **Figure IIC-7** compares the 24-hour parking accumulation profiles of the existing conditions and Scenario 2.

Figure IIC-7: Red Parking Facility Parking Accumulation Profiles (Existing Conditions and Scenario 2)



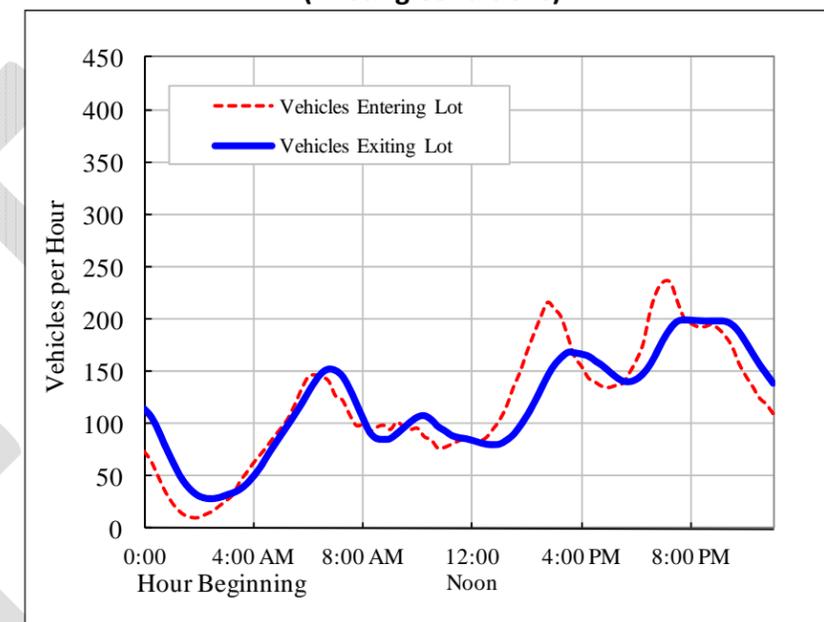
Existing Conditions

Under the existing conditions, the demand for parking peaks at 8:00 PM when 717 vehicles are parked in the Red Parking facility. With a parking capacity of 1,884 vehicles, this indicates a Capacity Utilization (CU) of 38%, certainly adequate to accommodate vehicles that park. With the exception of the afternoon/early evening peak period, the demand for parking is relatively constant at around 550 vehicles parked in a given hour. Other pertinent information includes:

- Highest hourly volume entering the parking facility = 236 vehicles (occurs around 7:00 PM),
- Highest hourly volume exiting the parking facility = 199 vehicles (occurs around 8:00 PM),
- During the system peak hour (3:15 to 4:15 PM), about 200 vehicles enter and 160 vehicles exit the parking facility.

See **Figure IIC-8** for a graphical representation of vehicles entering and exiting the Red Parking facility during a typical day.

Figure IIC-8: Hourly Volumes Entering and Exiting the Red Parking Facility (Existing Conditions)



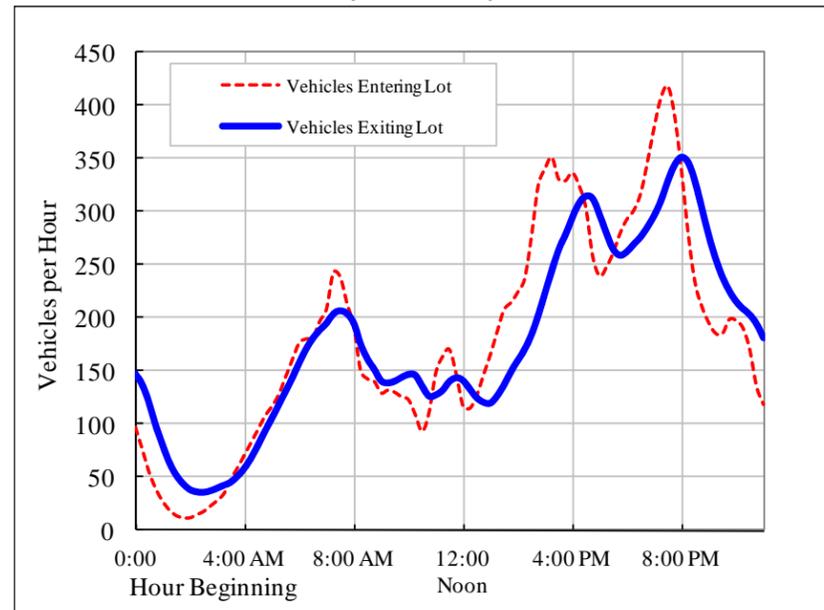
Scenario 2

The 24-hour parking demand profile anticipated for the Red Quadrant under Scenario 2 is similar to the existing conditions profile. With the additional incoming traffic from the relocated IAT flights, the expected peak parking demand is 1,202 parked vehicles occurring from 8:15 to 9:15 PM. This is an increase of 485 parked vehicles from the existing conditions. The CU factor is 64%, which still indicates relative freedom in finding a vacant spot. Other pertinent information includes:

- Highest hourly volume entering the parking facility = 418 vehicles (occurs around 7:30 PM),
- Highest hourly volume exiting the parking facility = 350 vehicles (occurs around 8:00 PM),
- During the system peak hour (3:15 to 4:15 PM), about 351 vehicles are anticipated to enter and 245 vehicles are expected exit the parking facility.

See **Figure IIC-9** for a graphical representation of vehicles entering and exiting the Red Parking facility during a typical day.

Figure IIC-9: Hourly Volumes Entering and Exiting the Red Parking Facility (Scenario 2)



Weaving Analysis

A weaving analysis was conducted for a critical roadway segment in the Red Quadrant located upstream from intersection RQ-049, where traffic recirculating to the frontages merges with the inbound traffic from the VWE. Refer to **Figure IIC-B** in the Appendix for the location of the weaving section. All analyses were done during the weaving section’s peak hour (3:15 to 4:15 PM for both existing conditions and Scenario 2).

Existing Conditions

Under current conditions, the weaving section operates at LOS A.

Scenario 2

The weaving section selected for analysis in the Red Quadrant operates at LOS B under Scenario 2. This analysis assumes that the weaving section is isolated and independent from any adjacent intersections.

Since there are two signalized intersections located immediately downstream of the weaving area (RQ-049 and RQ-053), a SimTraffic simulation analysis was performed to determine whether or not those intersections would impact traffic flow within the weaving section. The simulation shows that traffic queues generated by the signalized intersection RQ-049 will occasionally spill back into the weaving section at a rate of about one cycle failure per hour

(during the peak hour). This queue spillback impacts the last 50 feet of the left lane in the weaving section and will fully clear during the following cycle. Although this operation is not ideal, it is reasonable acceptable and does not warrant any roadway improvement since it could be mitigated by adjusting the signal timing plans to better manage queues on both approaches to intersection RQ-049.

Traffic enforcement in the Arriving Flights Middle frontage is suggested, especially during the peak periods. Due to its proximity to intersection RQ-049 (200 feet apart), any minor disruption in the frontage could generate a traffic queue that will quickly impact intersection RQ-049 and therefore the weaving section in question.

Conclusion

This white paper summarizes the methodologies and findings of a traffic study conducted for the Red Quadrant in which critical land-side infrastructures were evaluated under Scenario 2 of the Delta Airlines Redevelopment Plan. These infrastructures included all signalized intersections, critical roadway segments, all terminal frontages, and the Red Parking facility.

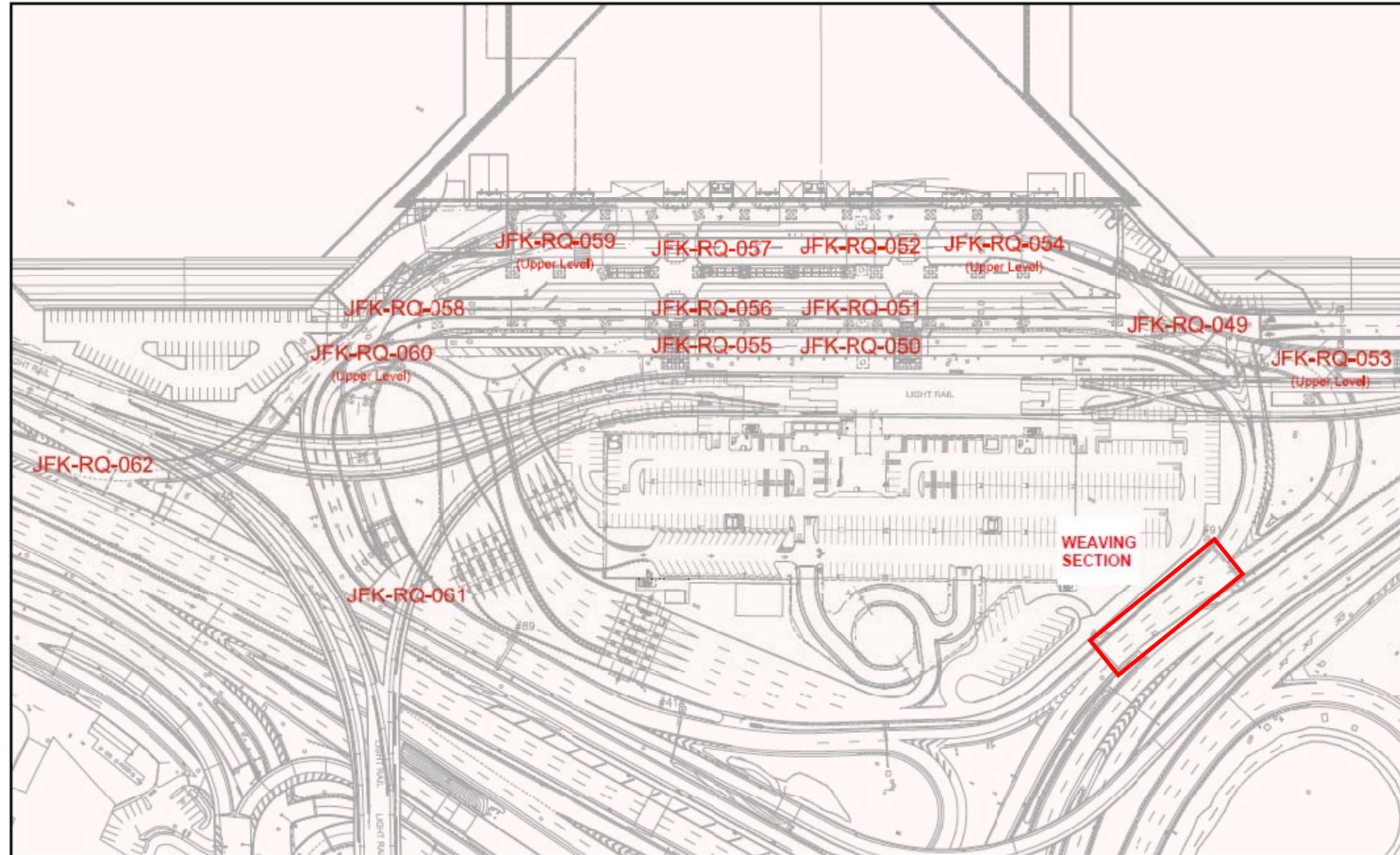
Under this scenario, a portion of the IAT flights currently operating out of Terminal 4 will be relocated into Terminal 8 in the Red Quadrant. These flights will be added to the existing operations of American Airlines in the Red Quadrant.

The analyses revealed that Scenario 2 is a feasible option for the Red Quadrant land-side infrastructures since it can effectively accommodate the new traffic patterns resulting from the proposed plan with acceptable levels of service to the airport patrons. The frontage analysis, however, suggests that the shuttles-only curb in the Arriving Flights Middle frontage will result in overcapacity conditions and should be extended to a portion of the adjacent upstream curb in the Middle frontage.

SCENARIO II – PART C
APPENDIX

DRAFT

Figure IIC-B: Red Quadrant Intersections and Roadways



JFK - RED QUADRANT
SIGNALIZED INTERSECTIONS MAP
NOVEMBER 2009



Figure IIC-C: Volume Map for System Peak Hour

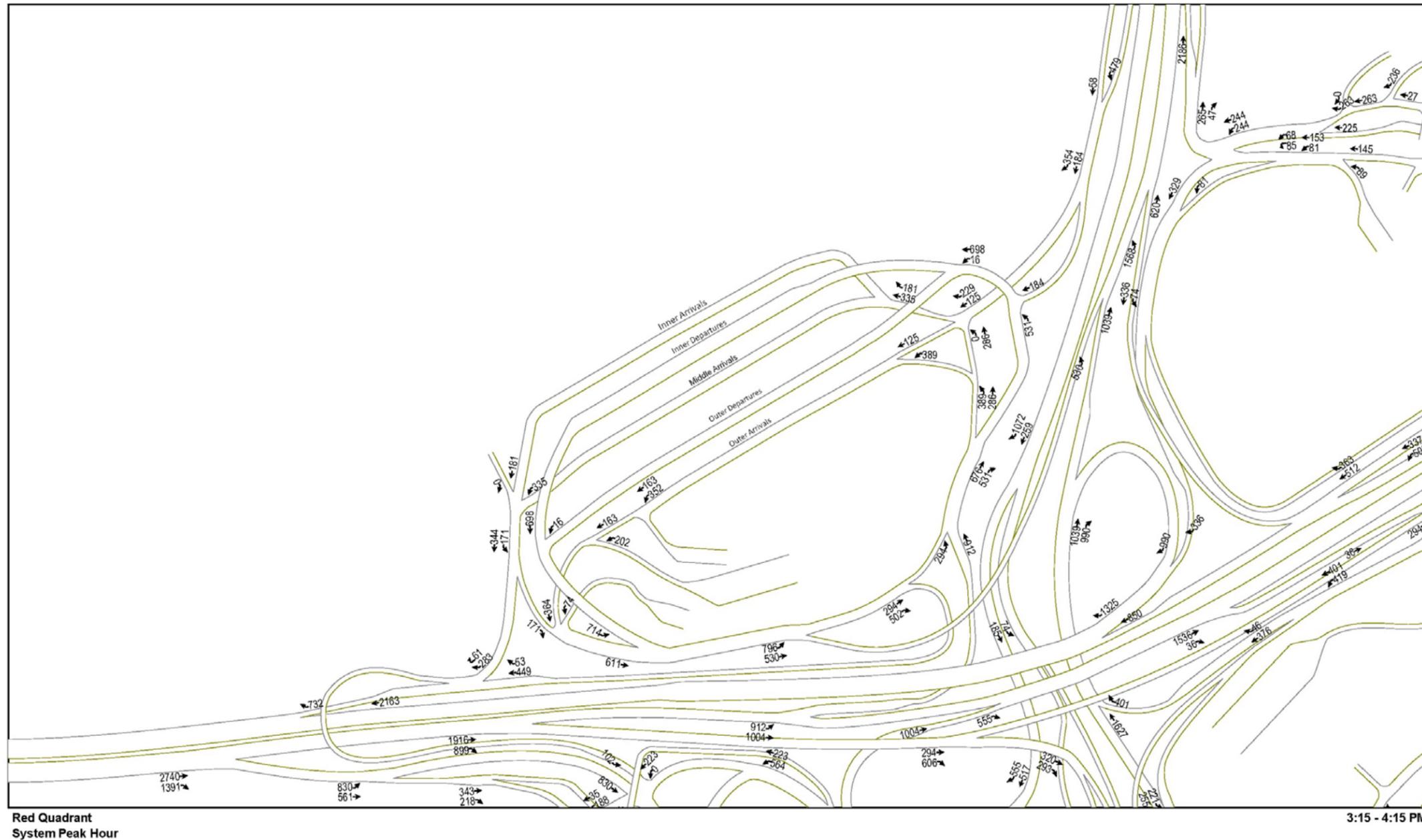


Figure IIC-E: Volume Map for Departing Flights Frontage Peak Hour

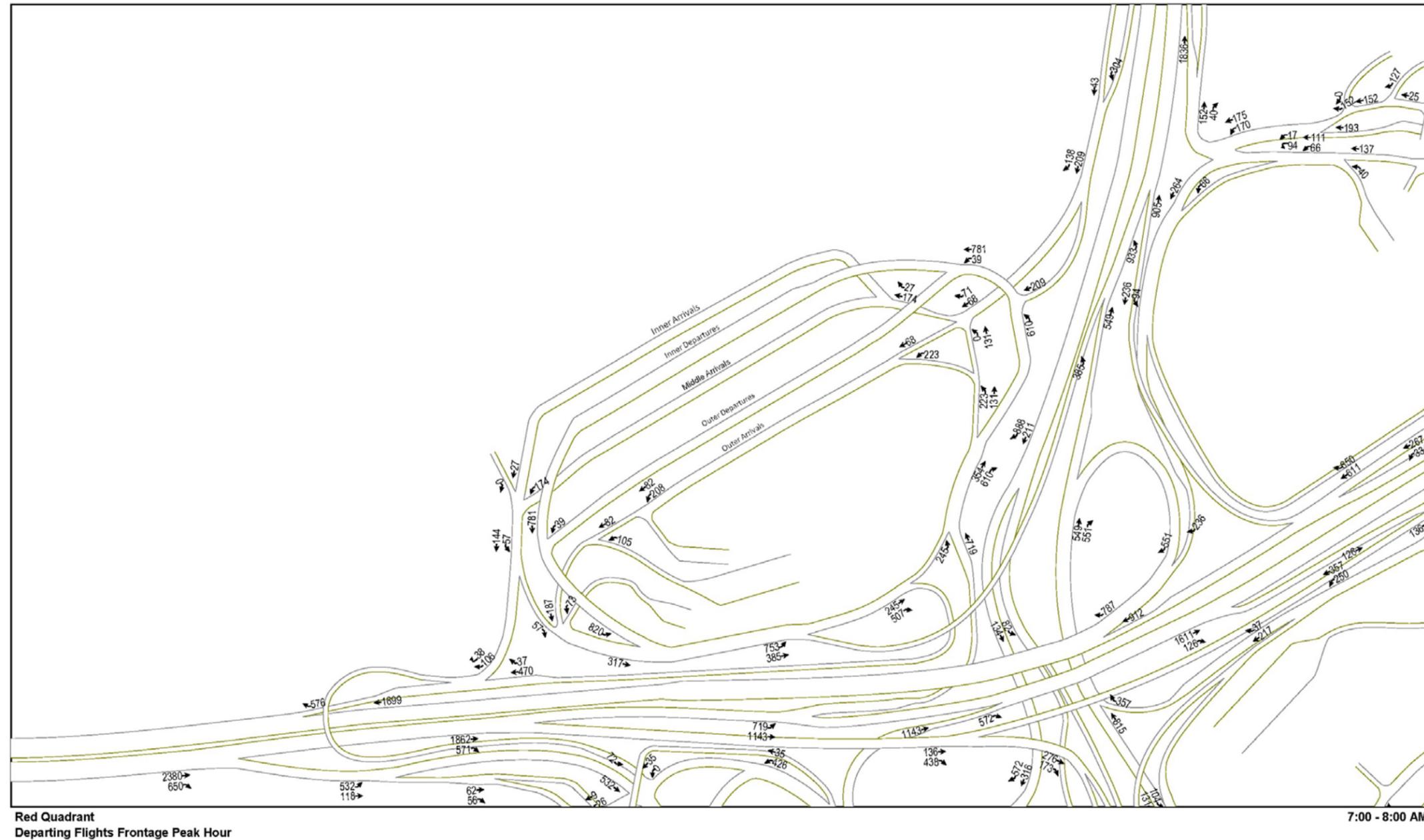


Table IIC-A: Intersection LOS Analysis Summary (Existing)

DELTA TERMINAL REDEVELOPMENT (Existing)						
SIGNALIZED INTERSECTION TRAFFIC LEVELS OF SERVICE						
Red Quadrant Peak Hour (15:15 - 16:15)						
Int. ID	INTERSECTION & APPROACH	App.	Mvt.	V/C	Delay	LOS
JFK-RQ-049	Terminal 8 Lower Level Entrance					
	From JFK Expwy to Outer Arrivals	WB	T	0.09	8.8	A
	From JFK Expwy to Inner Arrivals	WB	R	0.24	9.9	A
	From Recirculation Rd.	NB	LT	0.30	10.3	B
	Overall Intersection	-	-	0.37	9.9	A
JFK-RQ-050	Terminal 8 Lower Level Outer Pedestrian Crossing					
	Outer Arrivals Rd.	WB	T	0.14	7.3	A
	Overall Intersection	-	-	0.14	7.3	A
JFK-RQ-051	Terminal 8 Lower Level Middle Crossing					
	Middle Arrivals Rd.	WB	T	0.13	7.3	A
	Overall Intersection	-	-	0.13	7.3	A
JFK-RQ-052	Terminal 8 Lower Level Inner Crossing					
	Inner Arrivals Rd.	WB	T	0.07	5.1	A
	Overall Intersection	-	-	0.07	5.1	A
JFK-RQ-053	Terminal 8 Upper Level Entrance Ramp					
	From JFK Expwy to Upper Level	WB	T	0.24	9.7	A
	From Van Wyck Expwy & Recirculation Rd.	NB	L	0.32	9.7	A
	Overall Intersection	-	-	0.28	9.7	A
JFK-RQ-054	Terminal 8 Upper Level Pedestrian Crossing					
	Upper Level Pedestrian Crossing	WB	T	0.12	0.1	A
	Overall Intersection	-	-	0.12	0.1	A
JFK-RQ-055	Terminal 9 Lower Level Outer Pedestrian Crossing					
	Outer Arrivals Rd.	WB	T	0.14	0.3	A
	Overall Intersection	-	-	0.14	0.3	A
JFK-RQ-056	Terminal 9 Lower Level Middle Crossing					
	Middle Arrivals Rd.	WB	T	0.13	7.3	A
	Overall Intersection	-	-	0.13	7.3	A
JFK-RQ-057	Terminal 9 Lower Level Inner Crossing					
	Inner Arrivals Rd.	WB	T	0.07	1.8	A
	Overall Intersection	-	-	0.07	1.8	A
JFK-RQ-058	Terminal 9 Lower Level Merge					
	From Middle Arrivals Rd.	WB	L	0.40	4.8	A
	From Inner Arrivals Rd.	SB	T	0.08	2.8	A
	From Service Rd.	SE	R	0.00	0.0	A
	Overall Intersection	-	-	0.17	4.1	A
JFK-RQ-059	Terminal 9 Upper Level Pedestrian Crossing					
	From Inner Arrivals Rd.	WB	T	0.12	0.1	A
	Overall Intersection	-	-	0.12	0.1	A
JFK-RQ-060	Terminal 9 Upper Level Exit Ramps					
	From Outer Departures Rd.	WB	L	0.03	18.8	B
	From Inner Departures Rd.	SB	T	0.26	3.8	A
	Overall Intersection	-	-	0.22	4.2	A
JFK-RQ-061	Terminal 9 Upper Level and Lower Level Merge					
	From Lower Level	EB	T	0.17	5.8	A
	From Upper Level	SB	L	0.53	12.6	B
	Overall Intersection	-	-	0.31	9.9	A
JFK-RQ-062	Terminal 9 Lower Level Van Wyck Exit					
	From Upper Level exiting Van Wyck Expwy	WB	TR	0.30	8.7	A
	From Lower Level exiting Van Wyck Expwy	SB	RR2	0.32	12.4	B
	Overall Intersection	-	-	0.31	10.2	B

Table IIC-B: Intersection LOS Analysis Summary (Scenario 2)

DELTA TERMINAL REDEVELOPMENT (SCENARIO 2)						
SIGNALIZED INTERSECTION TRAFFIC LEVELS OF SERVICE						
Red Quadrant Peak Hour (15:15 - 16:15)						
Int. ID	INTERSECTION & APPROACH	App.	Mvt.	V/C	Delay	LOS
JFK-RQ-049	Terminal 8 Lower Level Entrance					
	From JFK Expwy to Outer Arrivals	WB	T	0.19	10.4	B
	From JFK Expwy to Inner Arrivals	WB	R	0.32	11.2	B
	From Recirculation Rd.	NB	LT	0.48	12.4	B
	Overall Intersection	-	-	0.46	11.6	B
JFK-RQ-050	Terminal 8 Lower Level Outer Pedestrian Crossing					
	Outer Arrivals Rd.	WB	T	0.34	10.6	B
	Overall Intersection	-	-	0.34	10.6	B
JFK-RQ-051	Terminal 8 Lower Level Middle Crossing					
	Middle Arrivals Rd.	WB	T	0.22	9.6	A
	Overall Intersection	-	-	0.22	9.6	A
JFK-RQ-052	Terminal 8 Lower Level Inner Crossing					
	Inner Arrivals Rd.	WB	T	0.11	7.9	A
	Overall Intersection	-	-	0.11	7.9	A
JFK-RQ-053	Terminal 8 Upper Level Entrance Ramp					
	From JFK Expwy to Upper Level	WB	T	0.29	10.2	B
	From Van Wyck Expwy & Recirculation Rd.	NB	L	0.41	10.3	B
	Overall Intersection	-	-	0.35	10.3	B
JFK-RQ-054	Terminal 8 Upper Level Pedestrian Crossing					
	Upper Level Pedestrian Crossing	WB	T	0.16	0.1	A
	Overall Intersection	-	-	0.16	0.1	A
JFK-RQ-055	Terminal 9 Lower Level Outer Pedestrian Crossing					
	Outer Arrivals Rd.	WB	T	0.34	3.7	A
	Overall Intersection	-	-	0.34	3.7	A
JFK-RQ-056	Terminal 9 Lower Level Middle Crossing					
	Middle Arrivals Rd.	WB	T	0.21	8.0	A
	Overall Intersection	-	-	0.21	8.0	A
JFK-RQ-057	Terminal 9 Lower Level Inner Crossing					
	Inner Arrivals Rd.	WB	T	0.12	1.3	A
	Overall Intersection	-	-	0.12	1.3	A
JFK-RQ-058	Terminal 9 Lower Level Merge					
	From Middle Arrivals Rd.	WB	L	0.37	9.7	A
	From Inner Arrivals Rd.	SB	T	0.20	8.7	A
	From Service Rd.	SE	R	0.00	0.0	A
	Overall Intersection	-	-	0.29	9.4	A
JFK-RQ-059	Terminal 9 Upper Level Pedestrian Crossing					
	From Inner Arrivals Rd.	WB	T	0.16	0.1	A
	Overall Intersection	-	-	0.16	0.1	A
JFK-RQ-060	Terminal 9 Upper Level Exit Ramps					
	From Outer Departures Rd.	WB	L	0.05	21.9	C
	From Inner Departures Rd.	SB	T	0.31	3.7	A
	Overall Intersection	-	-	0.27	4.1	A
JFK-RQ-061	Terminal 9 Upper Level and Lower Level Merge					
	From Lower Level	EB	T	0.28	8.9	A
	From Upper Level	SB	L	0.64	17.3	B
	Overall Intersection	-	-	0.42	13.2	B
JFK-RQ-062	Terminal 9 Lower Level Van Wyck Exit					
	From Upper Level exiting Van Wyck Expwy	WB	TR	0.38	9.3	A
	From Lower Level exiting Van Wyck Expwy	SB	RR2	0.42	13.2	B
	Overall Intersection	-	-	0.40	11.0	B

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 Existing Conditions (2010) and conditions for the year 2015 under both the No-Build/No-Action and the Proposed Action.

The Airport is located 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}). 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 Plan (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.² The USEPA considers the presence of the following six criteria pollutants to be indicators of air quality:

- Ozone (O₃);
- Carbon monoxide (CO);
- Nitrogen dioxide (NO₂);
- Particulate matter (PM₁₀ and PM_{2.5});³
- Sulfur dioxide (SO₂); and,

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 USEPA, Code of Federal Regulations, Title 40, Part 50 (40 CFR Part 50) *National Primary and Secondary Ambient Air Quality Standards* (NAAQS), July 2006.

³ PM₁₀ 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.

- Lead (Pb).⁴

The standards for the criteria pollutants, known as the NAAQS, are summarized in **Table C-1**. 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 nonattainment area is a homogeneous geographical area⁵ (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.

⁴ 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. However, the USEPA and FAA have determined that an exceedence of the lead standard would be unlikely at an airport because of the use of low-lead fuel for piston-engine aircraft. Therefore, emissions of lead were not considered in this analysis.

⁵ 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
Sulfur Dioxide (SO ₂)	Annual Arithmetic Mean	0.03 PPM	None
	24-Hour Average	0.14 PPM	None
	3-Hour Average	None	0.50 PPM
Particulate Matter (PM ₁₀)	24-Hour Average	150 µg/m ³	Same as Primary
Particulate Matter (PM _{2.5})	Annual Arithmetic Mean (1997 Std)	15 µg/m ³	Same as Primary
	24-Hour Average (2006 Std)	35µg/m ³	
Carbon Monoxide (CO)	8-Hour Average	9 PPM	None
	1-Hour Average	35 PPM	
Ozone (O ₃)	8-Hour Average (1997 Std)	0.084 PPM	Same as Primary
	8-Hour Average (2008 Std)	0.075 PPM	
	1-Hour Average (revoked)	0.12 PPM	
Nitrogen Dioxide (NO ₂)	1-Hour Daily Maximum	0.080-0.100 PPM	Same as Primary
	Annual Arithmetic Mean	0.053 PPM	
Lead (Pb)	Rolling 3-Month Average	0.15 µg/m ³	Same as Primary
	3-Month Arithmetic Mean	1.5 µg/m ³	

Notes: PPM is parts per million; Std is Standard.
µg/m³ is micrograms per cubic meter.

Sources: USEPA, 40 CFR Part 50.4 through Part 50.13, *National Primary and Secondary Ambient Air Quality Standards* (July 1, 2008).
71 FR 61144, *Final Rule National Ambient Air Quality Standards for Particulate Matter* (October 17, 2006); revisions to the standards for PM₁₀ and PM_{2.5}.
73 FR 16436, *Final Rule National Ambient Air Quality Standards for Ozone* (Thursday, March 27, 2008).
73 FR 66964 (November 12, 2008) and USEPA *Fact Sheet: Final Revisions to the National Ambient Air Quality Standards for Lead*, available at <http://www.epa.gov/air/lead/pdfs/20081015pbfactsheet.pdf>

According to FAA guidelines⁶ 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**.

⁶ 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
<i>Environmental Impacts: Policies and Procedures FAA Order 1050.1E Change 1, Section 2, Air Quality</i>
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 [<i>de minimis</i>] thresholds.

Note: National Environmental Policy Act, (NEPA). National Ambient Air Quality Standards, (NAAQS). Federal Aviation Administration, (FAA).

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 Federal action (proposed action conditions). 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.⁷

⁷ The Proposed Action at JFK is not exempt under General Conformity. The Final Notice for the FAA Presumed to Conform list was published in the Federal Register on July 30, 2007 (72 FR 41565)

The USEPA promulgated the conformity regulations on November 24, 1993⁸ 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 pollutants⁹ 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.¹⁰ An evaluation relative to the General Conformity Rule (the Rule), published under 40 CFR Part 93,¹¹ 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 project¹²;
- Not identified as an exempt project¹³ under the CAA;

and includes airport projects that would not require evaluation under the General Conformity regulations.

⁸ 58 FR 62188, dated November 24, 1993.

⁹ 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 (NH₃).

¹⁰ The OTR 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.

¹¹ USEPA, 40 CFR Part 93, Subpart B, *Determining Conformity of General Federal Actions to State or Federal Implementation Plans*, July 1, 2006.

¹² Highway and transit projects are defined under Title 23 U.S. Code and the Federal Transit Act.

¹³ 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.

- Not a project identified on the approving Federal agency's Presumed to Conform list;¹⁴ and,
- Located within a nonattainment or maintenance area.

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**. 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 pollutants¹⁵ 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 (NH₃).¹⁶

¹⁴ The provisions of the CAA allow a Federal agency to submit a list of actions demonstrated to have low emissions that would have no potential to cause an exceedence of the NAAQS and are presumed to conform to the CAA conformity regulations. This list would be referred to as the "Presumed to Conform" list. The FAA Presumed to Conform list was published in the Federal Register on February 12, 2007 (72 FR 6641-6656) and includes airport projects that would not require evaluation under the General Conformity regulations. The final rule on the list has not been published.

¹⁵ In ozone maintenance areas SO₂ may be considered a precursor pollutant. The airport is included in an ozone nonattainment area, where the USEPA has not designated SO₂ as a precursor pollutant.

¹⁶ Emissions of NH₃ are generally associated with commercial animal agriculture, including feeding operations. Therefore, emissions of NH₃ were not included in this analysis.

Table C-3
DE MINIMIS THRESHOLDS
John F. Kennedy International Airport

THRESHOLDS OF SIGNIFICANCE		
SUBPART B – <i>Determining Conformity of General Federal Actions to State or Federal Implementation Plans</i> 40 CFR PART 93.153, <i>Applicability, (b)(1) & (b)(2)</i> :		
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
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

Notes: 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 (NH₃); Sulfur oxides (SO).

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 NH₃ 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.

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 project proposed at JFK are CO, NO_x, VOC, PM_{2.5}, and SO_x. The relevant *de minimis* thresholds are 100 tons per year for all of these pollutants except VOCs, which would be limited to 50 tons.

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.¹⁷ 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,¹⁸ or involve Federal highways. In such case, 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 alternatives under consideration at JFK would not have any effect on regional transportation plans or programs, and no involvement with Federal highways. 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*

¹⁷ 40 CFR Part 93.153.

¹⁸ USEPA, 40 CFR Part 93.153, *Applicability*, July 1, 2006.

Bases,¹⁹ 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.

C.2 Modeling Approach

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.

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 aircraft engines, due to 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 2010 Existing Conditions. Therefore, the Proposed Action would not increase the total number aircraft of operations as compared to the 2015 No Action/No Build. However, the Proposed Action which includes the removal of Terminal 3, the extension of Concourses B of Terminal 4, and the extension of Terminal 8 would have the potential to change average taxi time at the Airport. Therefore, the only changes to emissions from aircraft would be a result of a change in average taxi-time. Aircraft that are currently gated at Terminal 3 would be gated at Terminal 4 and a portion of the aircraft that currently park at Terminal 4 would be gated at the Terminal 8 extension.

¹⁹ FAA, *Air Quality Procedures for Civilian Airports & Air Force Bases*, Appendix J, April 1997.

Three centralized gate areas were defined for EDMS modeling – the Terminal 3 gate area, the Terminal 4 gate area, and the Terminal 8 gate area. The gate areas encompass all the area where aircraft are parked and where the ground support equipment operate.

Taxiway paths for each aircraft between the gate and runway end were assigned based on the existing Airport layout and the runway use given in Table 7 of the *Noise Analysis of Proposed Runway 13R Threshold Relocation Briefing Paper* prepared in July 23, 2008. The EDMS default taxi speed of 15 knots was used, where the EDMS program automatically calculates the length of each taxiway segment. EDMS determines the path taken on the taxiways for each aircraft based on its gate and runway assignment.

To determine the fleet mix used in the modeling JFK CATR data for the month of April 2010 was utilized. EDMS aircraft types were applied to the fleet and those aircraft were assigned a terminal based on OAG data. Only the fleet mix currently using Terminal 3, 4, and 8 were analyzed. It is assumed that there would be no change to any other terminals as a result of the Proposed Action. The fleet was then scaled up to meet annual projections for 2015. For the Proposed Action a portion of the aircraft (approximately 23%) that currently park at Terminal 4 were relocated to the Terminal 8 gate area.

APU

The larger jet aircraft 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 APU use from the 2015 No Action/No Build to the 2015 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 Action/No Build to the 2015 Proposed Action.

C.2.3 Ground Access Vehicles on Roadways

On-airport traffic counts were obtained from the Port Authority and were used in the analysis. The average operating speed of 35 miles per hour was assumed. The proposed modifications to the terminals would change the distribution of the vehicles in the terminal area.

Emissions from ground access vehicles (GAVs) on roadways were estimated using EDMS Version 5.1.2 computer program. The EDMS computer program is the FAA-required and USEPA-approved model for estimating emissions and calculating pollutant concentrations from airport-specific sources. The model is also approved

for predicting emissions from GAV on roadways and in parking lots. The EDMS model includes vehicular emissions factors provided through MOBILE6.2, a USEPA mobile source emission program.

Data relating to motor vehicles traversing the airport's access roadways were obtained from Delta Airlines *Redevelopment Traffic Impact Study*. Refer to Section 5.3 in Chapter 5.0, *Environmental Consequences* for more detailed information and analysis with regard to traffic conditions in the terminal area.

C.2.4 Ground Access Vehicles in Parking Lots

Emissions from GAVs in parking lots and garages were also estimated using EDMS. The number of vehicles in each of the parking lots and garages were obtained from Delta Airlines *Redevelopment Traffic Impact Study* and adjusted for passenger and operating levels projected in 2015. It is assumed the number of total vehicles in parking lots would be the same for the Proposed Action and the 2015 No Action/No Build. The EDMS default of 10 miles per hour was given for all vehicles in the parking lots. The average distance for the vehicles was determined by measuring from the entrance of the parking facility to the last parking space to represent a worst case scenario. Refer to Section 5.3 in Chapter 5.0, *Environmental Consequences* for more detailed information and analysis with regard to GAVs parking in the Blue, Red, and Green quadrants.

C.2.5 Stationary Sources

Stationary sources modeled for the study included electricity and natural gas usage for Terminal 3, Terminal 4, and Terminal 8. It is assumed that the 2010 Existing Conditions would be the same as for the 2015 No Action/No Build. The Proposed Action would actually have the potential to increase efficiency and reduce the amount of electricity and natural gas needed due to Terminal 3 no longer being used. Refer to Section 5.15 in Chapter 5.0, *Environmental Consequences* for more detailed information.

C.2.6 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. The construction schedule was based on the implementation phasing provided in Chapter 2.0, *Purpose and Need*.

The construction emissions inventory was calculated using the National Mobile Inventory Model (NMIM)²⁰ for diesel-powered nonroad equipment, such as excavators and backhoes, and diesel-powered onroad vehicles typically used for construction, such as dump trucks and cement trucks.

The following procedures were used to project the emissions caused by equipment and vehicles during construction of the Proposed Action:

- Develop the list of construction equipment and materials necessary for each construction task;
- Calculate total operating hours for each piece of equipment required for each construction task using a Microsoft® EXCEL 2003 spreadsheet;
- Enter construction equipment information into the NMIM, which incorporates data from the USEPA NONROAD2005 and MOBILE 6.02 programs, to calculate construction emissions.

To provide a reasonable representation of emissions likely to occur from construction, the calculation of emissions using NMIM assumed the use of nonroad diesel equipment compliant to the Federal Tier 1 and Tier 2 emission standards applicable in 2007.²¹ 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-4**.

**Table C-4
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}
2010	2.14	0.30	3.56	0.06	0.30	0.27
2011	2.66	0.35	4.35	0.08	0.37	0.34
2012	4.18	0.51	6.70	0.12	0.58	0.54
2013	28.94	3.19	42.99	0.75	3.12	2.87
2014	5.56	0.68	8.84	0.16	0.76	0.70
de minimis THRESHOLD	100	50	100	100	100	100

Total emissions may not sum exactly due to rounding.
Source: L&B Analysis, 2010.

²⁰ USEPA, NMIM, 2005; computer interface for USEPA NONROAD 2005 and MOBILE 6.02 computer programs.

²¹ USEPA, Code of Federal Regulations, Title 40, Part 89 (40 CFR Part 89), July 1, 2008.

The increase in CO and NO_x emissions in 2013 are due to the demolition of Terminal 3 which is anticipated to occur in one year.

Construction emissions from the Proposed Action would be expected to contribute to fugitive emissions of particulate matter in and around the construction site. 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*.²² The following methods of controlling dust and other airborne particles will be implemented to the maximum possible extent:

- 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.

C.3 Emissions Inventory

The emissions inventory was prepared using the FAA-required and USEPA-approved Emissions and Dispersion Modeling System (EDMS) version 5.1.2 computer program released in November 2009. The EDMS is an emissions inventory and air dispersion model designed specifically to estimate emissions at airports.

The results of the emission inventory for the 2010 Existing Conditions are provided in **Table C-5**.

²² 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).

**Table C-5
2010 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	1,110.95	196.27	1,858.86	154.86	15.97	15.97
GSE	1,179.31	41.46	138.35	3.28	5.13	4.93
APUs	44.26	4.11	54.63	6.87	6.86	6.86
Parking Facilities	860.23	77.38	100.40	0.53	2.54	1.56
Roadways	464.13	30.43	53.78	0.40	1.88	1.16
Stationary Sources	4.58	0.30	5.64	0.04	0.42	0.42
Total	3,663.46	349.95	2,211.66	165.98	32.81	30.90

Total emissions may not sum exactly due to rounding.
Source: L&B Analysis, 2010.

The results of the emission inventory for the 2015 No-Build/No-Action Conditions are provided in **Table C-6**. Emissions from GSE decrease from the existing conditions to both the Proposed Action and the No Action/No Build because emissions factors applied in EDMS decrease in future years.

**Table C-6
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	1,238.33	218.49	2,066.52	172.41	17.79	17.79
GSE	621.61	22.41	77.79	2.27	3.48	3.33
APUs	49.48	4.59	60.83	7.67	7.65	7.65
Parking Facilities	815.18	62.88	67.66	0.63	2.27	1.21
Roadways	345.30	19.58	28.42	0.36	1.31	0.69
Stationary Sources	4.58	0.30	5.64	0.04	0.42	0.42
Total	3,074.48	328.26	2,306.86	183.36	32.93	31.10

Total emissions may not sum exactly due to rounding.
Source: L&B Analysis, 2010.

The results of the emission inventory for the 2015 Proposed Action Conditions are provided in **Table C-7**.

Table C-7
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	1,222.01	217.22	2,009.73	171.59	17.74	17.74
GSE	621.61	22.41	77.79	2.27	3.48	3.33
APUs	49.48	4.59	60.83	7.67	7.65	7.65
Parking Facilities	815.18	62.88	67.66	0.63	2.27	1.21
Roadways	344.39	19.53	28.35	0.36	1.31	0.69
Stationary Sources	3.64	0.24	4.48	0.03	0.34	0.34
Total	3,056.30	326.88	2,248.84	182.54	32.78	30.95

Total emissions may not sum exactly due to rounding.
Source: L&B Analysis, 2010.

C.3.1 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-8** shows that the estimated net emissions would be less than the applicable *de minimis* thresholds. Because 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.

Table C-8
GENERAL CONFORMITY EVALUATION
John F. Kennedy International Airport

EMISSION SOURCES	ANNUAL EMISSIONS					
	(tons per year)					
	CO	VOC	NO _x	SO _x	PM ₁₀	PM _{2.5}
2015 No-Build/No-Action	3,074.48	328.26	2,306.86	183.36	32.93	31.10
2015 Proposed Action	3,056.30	326.88	2,248.84	182.54	32.78	30.95
NET EMISSIONS	-18.18	-1.38	-58.03	-0.83	-0.15	-0.14
<i>de minimis</i> THRESHOLD	100	50	100	100	100	100

Total emissions may not sum exactly due to rounding.
Source: EDMS version 5.1.2, L&B Analysis, 2010.

C.4 Emissions Dispersion (Hot Spot Analysis)

A dispersion analysis was conducted to determine whether emissions due to GAV on roadways and in parking facilities from the Proposed Action 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 receptor grids. The dispersion analysis was conducted using the same FAA EDMS Version 5.1.2 computer model.

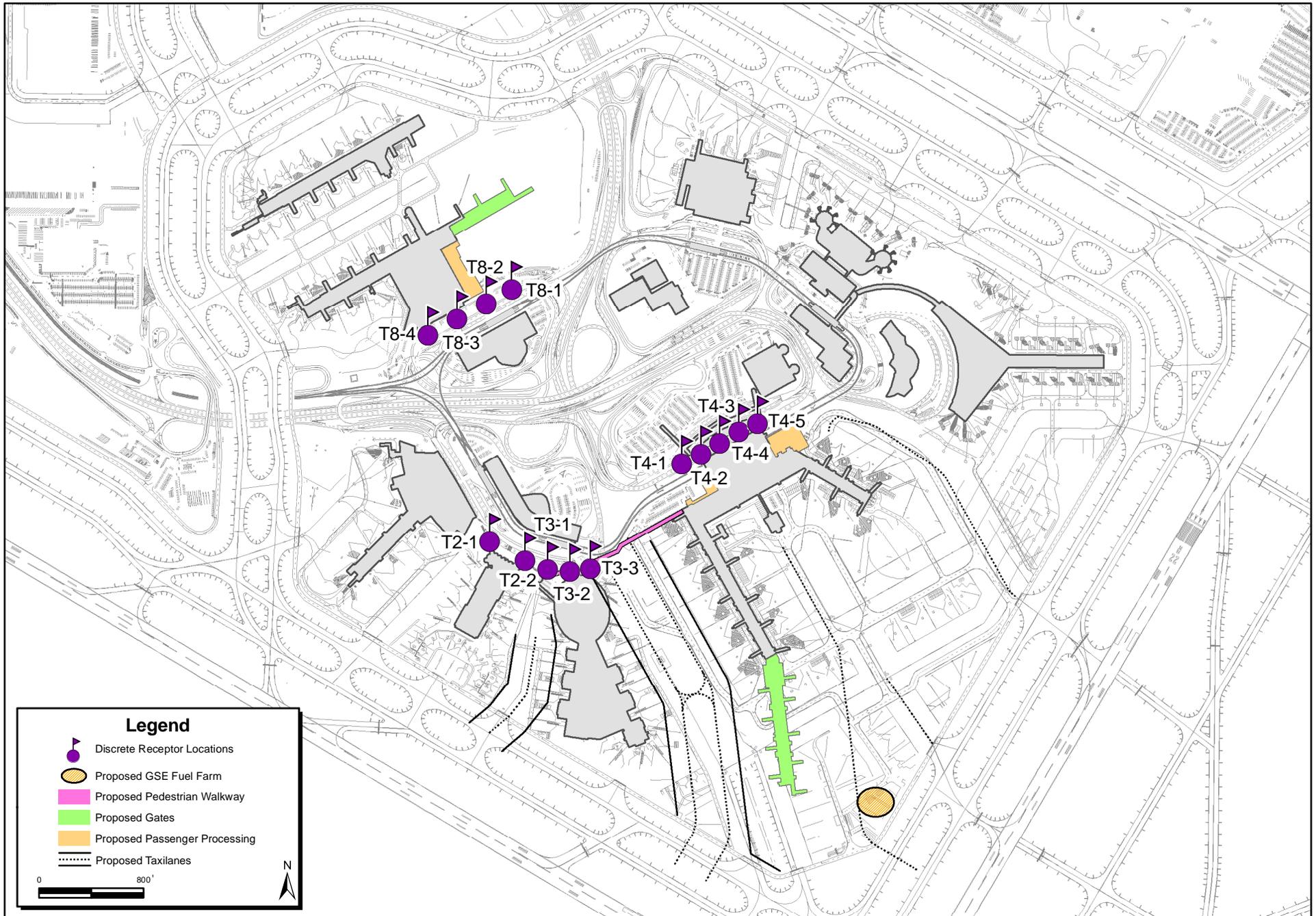
Dispersion calculations require one full year of meteorological data that includes several parameters such as temperature, pressure, relative humidity, wind speed, and wind direction for each hour of the year. 2009 weather data was used for this analysis. The meteorological parameters are used to estimate the most probable pollutant concentrations that can be expected at theoretical receptor locations. The receptor locations were selected based on the proximity of the receptor to public areas and are shown in **Exhibit C-1**.

In order to show the total potential emissions concentration at each receptor location, background concentrations must be 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.²³

Table C-9 and **C-10** shows the estimated probable total maximum emissions concentrations at each receptor under the No-Build/No-Action and the Proposed Action. As the table shows, none of the NAAQS would be exceeded under the Proposed Action.

²³ 2009 Region 2 Air Quality Data, Department of Environmental Conservation. New York State Ambient Air Quality Report for 2009. Accessed online May 2010. Highest Values for Queens College 2 monitor were used.



Legend

-  Discrete Receptor Locations
-  Proposed GSE Fuel Farm
-  Proposed Pedestrian Walkway
-  Proposed Gates
-  Proposed Passenger Processing
-  Proposed Taxilanes

0 800'

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Table C-9
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													
	T2-1	T2-2	T3-1	T3-2	T3-3	T4-1	T4-2	T4-3	T4-4	T4-5	T8-1	T8-2	T8-3	T8-4
2015 No Action	1.0	0.8	0.9	0.9	0.6	0.6	0.5	0.5	0.5	0.6	0.9	0.8	0.9	1.1
Background	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
Total	2.9	2.7	2.8	2.8	2.5	2.5	2.4	2.4	2.4	2.5	2.8	2.7	2.8	3.0
2015 Proposed Action	1.0	0.8	0.8	0.7	0.6	0.6	0.5	0.5	0.5	0.6	1.0	1.0	1.0	1.2
Background	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
Total	2.9	2.7	2.7	2.6	2.5	2.5	2.4	2.4	2.4	2.5	2.9	2.9	2.9	3.1

Note: Pollutant concentrations are given in parts per million (PPM). USEPA is the U.S. Environmental Protection Agency.

Sources: EDMS Version 5.1.2, 2009, FAA.
Landrum & Brown analysis, 2010.

Table C-10
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													
	T2-1	T2-2	T3-1	T3-2	T3-3	T4-1	T4-2	T4-3	T4-4	T4-5	T8-1	T8-2	T8-3	T8-4
2015 No Action	2.3	2.1	1.8	1.7	2.4	2.5	2.6	2.3	2.5	2.8	1.7	1.6	1.4	1.6
Background	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1
Total	5.4	5.2	4.9	4.8	5.5	5.6	5.7	5.4	5.6	5.9	4.8	4.7	4.5	4.7
2015 Proposed Action	2.4	2.1	1.7	1.7	2.2	2.5	2.7	2.5	2.5	2.8	2.1	1.9	1.6	1.8
Background	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1
Total	5.5	5.2	4.8	4.8	5.3	5.6	5.8	5.6	5.6	5.9	5.2	5.0	4.7	4.9

Note: Pollutant concentrations are given in parts per million (PPM). USEPA is the U.S. Environmental Protection Agency.

Sources: EDMS Version 5.1.2, 2009, FAA.
Landrum & Brown analysis, 2010.

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C.5 Conclusions

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 Action/No Build. 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. As a result, no adverse impact on local or regional air quality is expected by implementation of the Proposed Action.

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Appendix D

Legal Notice 16450581

REQUEST FOR PROPOSALS
The Board of Education of Hicksville Union Free School District of the Town of Oyster Bay, Nassau County, New York, in accordance with Section 103 of Article 5-A of the General Municipal Law, hereby invites the submission of proposals at 11:00 AM on June 8, 2010.

Field Work and Survey
For use in the Schools of the District, proposals will be received until 11:00 A.M. on June 8th, 2010 in the Office at the Hicksville U.F.S.D. Administration Building on 200 Division Avenue, Hicksville, New York 11801, at which time and place all proposals will be publicly opened.

Specifications and proposal forms may be obtained at the Administrative Building, Office of the Purchasing Agent, between the hours of 9:00 A.M. and 3:00 P.M. Requests for specifications only, may be faxed to Mike Margulis, Purchasing Agent (516) 733-6584 or by email to mmarguli@mail.nasboecs.org

The Board of Education reserves the right to reject all proposals and to award the contract to other than the lowest bidder for any reason deemed in the best interest of the District. Any proposal submitted will be binding for One Hundred Twenty (120) days subsequent to the date of bid opening.

BOARD OF EDUCATION
HICKSVILLE UNION FREE SCHOOL DISTRICT
Town of Oyster Bay, Nassau County, New York

Legal Notice 16450806

NOTICE OF SALE
SUPREME COURT: SUFFOLK COUNTY: HABITAT FOR HUMANITY OF SUFFOLK, INC., PLAINTIFF VS WARREN HORTON, ET AL DEFENDANTS

Pursuant to judgment of foreclosure and sale dated JANUARY 28, 2009, I will sell at public auction to the highest bidder at SOUTHBOLD TOWN HALL, MAIN ROAD, SOUTHBOLD, NEW YORK 11971, on JUNE 30, 2010 at 10:30 A.M. Premises in GREENPORT, NEW YORK and described as follows: All that tract or parcel of land situate in the town of Southold, County of Suffolk and State of N.Y. known and designated as Lot No. 79 on a certain map entitled "Map of Greenport Driving Park" filed in the Suffolk County Clerk's office on 12-1-09 as Map No. 369, District: 1000; Block: 0480; Block: 02.00; Lot: 026.000. Premises known as 210 FLINT ST. (A/K/A 731 FLINT ST.), GREENPORT, N.Y. Sold subject to all the terms and conditions contained in said judgment and terms of sale. Also sold subject to covenants and restrictions which require that the premises may only be used for affordable housing purposes. Approximate amount if judgment \$3,838,70 plus interest and costs. INDEX NO. 07-2782 MICHAEL H. AHEARN, ESQ. REFEREE.

THE PORT AUTHORITY OF NEW YORK AND NEW JERSEY

NOTICE OF AVAILABILITY and REQUEST FOR COMMENT

Environmental Assessment
Delta Air Lines - Terminals 3 and 4 Redevelopment 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 an Environmental Assessment (EA) for the Delta Air Lines - Terminals 3 and 4 Redevelopment 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 Spanpanalo
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 EA document for this project will be available at these locations until June 15, 2010.

In addition, a copy of this document may be viewed online at
http://www.airportsites.net/JFK-Delta-EA.

In accordance with NEPA, The Port Authority is inviting the Public to submit, in writing, comments regarding the Delta Air Lines - Terminals 3 and 4 Redevelopment Project Environmental Assessment at the John F. Kennedy International Airport. The Port Authority is accepting comment on this EA document. The official comment period for this document will close on Monday, June 15, 2010. Comments must be received by close of business on Monday, June 15, 2010 in order to be considered.

All 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. If you have any questions on this notice please contact Edward Knoesel at (212) 435-3747.

Legal Notice 16451162

NOTICE TO BIDDERS
SEALED BIDS will be received by the Department of Public Works of the Town of North Hempstead in the Town Board Room located on the second floor of the Town Hall, 200 Plandome Road, Manhasset, New York 11030 on Wednesday, the 30th day of June, 2010 at 10:30 a.m., at which time they will be publicly opened and read and the Contract awarded as soon thereafter as practicable for IMPROVEMENTS TO THE MANORHAVEN POOL COMPLEX AT MANORHAVEN BEACH PARK

DPW PROJECT NO. 07-11R
Bids may be mailed or delivered to the Town Clerk, 200 Plandome Road, Manhasset, New York 11030, provided the Bid is actually received by the Town Clerk prior to the time of public opening, or Bids may be delivered to the place of public opening (i.e., the Town Board Room) immediately prior to the time of public opening. All Bids must be sealed and submitted in the pre-marked envelope provided with the Bid Documents, or must be sealed and submitted in a package (envelope) MARKED IN THE SAME WAY as the pre-marked envelope provided with the Bid Documents.

All BIDDERS MUST complete the required Contractor's Qualifications Statement and must provide a copy of the required Statement of Financial Conditions, even if a Bidder is currently executing work for the Town. In addition, please be advised that, pursuant to New York General Municipal Law §104(5) you are required to submit with your bid the names of subcontractors you intend to use to perform the following work on the contract, as well as the agreed-upon amounts to be paid to each:

- *Plumbing;
*HVAC; and
*Electrical.

The list of subcontractors is to be submitted in a separate sealed envelope by completing the attached "Subcontractors Identification Form" for any subcontractors intended to be used in any of the three trades listed above. If Bidder intends to use its own forces for any of the above listed work, Bidder should submit a signed statement to that effect. Failure to submit the completed Subcontractor Identification Form that includes the names of the subcontractors and the agreed-upon amounts to be paid to such subcontractors will render your bid non-responsive. The Bids shall be in accordance with the requirements of the Specifications, Contract Plans and terms of the proposed Contract.

No bids shall be received unless made in writing on forms furnished, and unless accompanied by a Certified Check or Bid Bond made payable to the Town of North Hempstead for an amount not less than five-

(5%) percent of the Bid price. BIDDERS ARE HEREBY ADVISED THAT ALL BONDS AND INSURANCE DOCUMENTS SUBMITTED WILL BE VERIFIED FOR AUTHENTICITY BY DIRECT COMMUNICATION WITH THE SURETY/INSURANCE COMPANY. ALL BONDING AND INSURANCE COMPANIES MUST BE LICENSED TO DO BUSINESS IN THE STATE OF NEW YORK. The Town reserves the right to reject any and all Bids, and to waive any informalities therein. The Town will not accept Bids from, nor award a Contract to, anyone who cannot prove to the satisfaction of the Town Board that he has sufficient experience in this type of construction and financially able and organized to successfully carry out the work covered by the Plans and Specifications in the required completion time. Special qualification requirements are contained in the Contract Documents.

It is the policy of the Town of North Hempstead to encourage the participation of DBE and WBE, by bidding on this project, the contractor acknowledges its understanding and support of this policy. Contract Plans, Specifications, and other Contract Documents may be examined at the office of the Department of Public Works, Town of North Hempstead, 285 Denton Avenue, New Hyde Park, New York 11040, or at the office of the Town Clerk at Town Hall, 200 Plandome Road, Manhasset, New York 11030, on and after June 1, 2010. On and after this date, copies may be purchased only at the office of the Town Clerk.

A deposit of \$100.00 is required for each set of Plans and Specifications. The deposit shall be in cash or certified check in the name of the Town of North Hempstead. The deposit of each bidder will be refunded for return of one set, in good condition, within thirty days following the Award of Contract, or within sixty days following the opening of bids, if no Contract is awarded. All other deposits will be returned on the basis of fifty (50%) percent of the deposit amount, for sets returned in good condition within the same period. Sets are to be returned to the office of the Town Clerk at the above address for full or partial deposit refund.

THERE WILL BE A PRE-BID WALK-THROUGH ON WEDNESDAY, JUNE 9, 2010 AT 9:00 AM AT MANORHAVEN BEACH PARK POOL, 158 MANORHAVEN BLVD., PORT WASHINGTON, NEW YORK 11050. ALL PROSPECTIVE BIDDERS ARE STRONGLY ENCOURAGED TO ATTEND. BY ORDER OF THE TOWN BOARD OF THE TOWN OF NORTH HEMPSTEAD: LESLIE GROSS, TOWN CLERK; JILLIAN GUINNEY, P.E.; ACTING COMMISSIONER PUBLIC WORKS

Legal Notice 16451041

PROPOSED ORDINANCE NO. 65-2010
AN ORDINANCE supplemental to the annual appropriation ordinance in connection with the Health Department. WHEREAS, Nassau County has received certain revenue; and WHEREAS, such funds have not been otherwise appropriated; and WHEREAS, the County Executive, by communication dated May 11, 2010, addressed to the County Legislature, has recommended the appropriation of such funds not otherwise appropriated; and, WHEREAS, this supplemental appropriation is within the scope of section 307 of the County Government Law; now, therefore, BE IT ORDAINED by the County Legislature of the County of Nassau, as follows: Section 1. There is hereby appropriated from monies not otherwise appropriated, the following sums of money to the following accounts:

Table with columns: TOTAL AMOUNT (in dollars), SOURCE OF FUNDS, APPROPRIATED TO: (FUND, DEPT. CODE/Index, OBJ. CODE, AMOUNT (in dollars)). Rows include Health Research, Inc./Center for Disease Control with amounts 90,000.00 and 109,985.00.

§ 2. This ordinance may be modified to allow for the correction of any mathematical and/or typographical errors subsequent to any approval and adoption of said ordinance without the necessity for a vote to be taken by the County Legislature or by the members of any Standing Committee of said Legislature if said ordinance is passed by the affirmative vote of a majority of said Legislature.

§ 3. It is hereby determined, pursuant to the provisions of the State Environmental Quality Review Act, 8 N.Y.E.C.L. section 0101 et seq. and its implementing regulations, Part 617 of 6 N.Y.C.R.R., and Section 1611 of the County Government Law of Nassau County, that this supplemental appropriation ordinance is a "Type II" Action within the meaning of Section 617.5(c)(20) of 6 N.Y.C.R.R. ("routine or continuing agency administration and management, not including new programs or major reordering of priorities that may affect the environment"), and, accordingly, is of a class of actions which do not have a significant effect on the environment; and no further review is required.

§ 4. This ordinance shall take effect immediately.

Legal Notice 16451048

PROPOSED ORDINANCE NO. 68-2010
AN ORDINANCE supplemental to the annual appropriation ordinance in connection with the District Attorney. WHEREAS, Nassau County has received certain revenue; and WHEREAS, such funds have not been otherwise appropriated; and WHEREAS, the County Executive, by communication dated May 7, 2010, addressed to the County Legislature, has recommended the appropriation of such funds not otherwise appropriated; and, WHEREAS, this supplemental appropriation is within the scope of section 307 of the County Government Law; now, therefore, BE IT ORDAINED by the County Legislature of the County of Nassau, as follows: Section 1. There is hereby appropriated from monies not otherwise appropriated, the following sums of money to the following accounts:

Table with columns: TOTAL AMOUNT (in dollars), SOURCE OF FUNDS, APPROPRIATED TO: (FUND, DEPT. CODE/Index, OBJ. CODE, AMOUNT (in dollars)). Row includes Fund for the City of New York Center for Cost Innovation with amount \$435.00.

§ 2. This ordinance may be modified to allow for the correction of any mathematical and/or typographical errors subsequent to any approval and adoption of said ordinance without the necessity for a vote to be taken by the County Legislature or by the members of any Standing Committee of said Legislature if said ordinance is passed by the affirmative vote of a majority of said Legislature.

§ 3. It is hereby determined, pursuant to the provisions of the State Environmental Quality Review Act, 8 N.Y.E.C.L. section 0101 et seq. and its implementing regulations, Part 617 of 6 N.Y.C.R.R., and Section 1611 of the County Government Law of Nassau County, that this supplemental appropriation ordinance is a "Type II" Action within the meaning of Section 617.5(c)(20) of 6 N.Y.C.R.R. ("routine or continuing agency administration and management, not including new programs or major reordering of priorities that may affect the environment"), and, accordingly, is of a class of actions which do not have a significant effect on the environment; and no further review is required.

§ 4. This ordinance shall take effect immediately.

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LEGAL NOTICES

Legal Notice 16449291

SUPREME COURT OF THE STATE OF NEW YORK COUNTY OF SUFFOLK
Index No.: 10-13107
Date Summons filed: 4/6/2010
Plaintiff designates Suffolk County as the place of trial.
The basis of venue is: Plaintiff's

Legal Notice 16451129

NOTICE OF SPECIAL MEETING 2010 WEST BABYLON UNION FREE SCHOOL DISTRICT TOWN OF BABYLON SUFFOLK COUNTY, NEW YORK

NOTICE IS HEREBY GIVEN that voting at a Special Meeting on the school district budget for the year 2010/2011 will take place in the two designated election districts of the school district: the Administration Building, 10 Farmingdale Road, West Babylon, New York 11704 and the Santapogee School, 1130 Herzel Boulevard, West Babylon, New York 11704, on Tuesday, June 15, 2010 between the hours of 7:00 A.M. and 9:00 P.M. prevailing time, and as much longer as may be necessary to enable voters then present to cast their ballots, for the transaction of business as authorized by the Education Law. Voting will be by ballot on voting machines.

Form of proposition will be as follows:

PROPOSITION NO. 1
Shall the following resolution be adopted?

RESOLVED, that the school district budget proposed by the Board of Education in accordance with Section 1716 of the Education Law shall be approved.

NOTICE IS FURTHER GIVEN that the budget hearing of the West Babylon Union Free School District, Town of Babylon, Suffolk County, New York will be held in the Performing Arts Center ("PAC") at the West Babylon High School, 500 Great East Neck Road, West Babylon, New York, in said district on Tuesday, June 1, 2010 at 8:00 P.M. for

1) discussion of the proposed budget for the fiscal year 2010/2011
2) such further business as is authorized by the Education Law

NOTICE IS FURTHER GIVEN that a statement of estimated expenses of the school year 2010/2011 will be prepared and copies of such statement may be obtained by any resident of the district at the office of the Acting District Clerk, 10 Farmingdale Road, West Babylon, New York 11704 and each schoolhouse in the district, daily except Saturday, Sunday and holidays on and after June 2, 2010 (including Voting Day June 15, 2010) between 8:00 A.M. and 4:00 P.M.

AND FURTHER NOTICE IS HEREBY GIVEN that personal registration of voters is required either pursuant to §2014 of the Education Law or pursuant to Article 5 of the Election Law in order to vote at school meetings on elections. If a voter has heretofore registered pursuant to §2014 of the Education Law in the West Babylon Union Free School District and has voted at an annual or special district meeting in such district within the last four (4) calendar years, he or she is eligible to vote at this election. If a voter is registered and eligible to vote under Article 5 of the Election Law, he or she is also eligible to vote at this election. All other persons who wish to vote must register.

Voters may register to vote on any school day not more than seven (7) nor less than two (2) days preceding the Budget Vote, at the District Office, 10 Farmingdale Road, West Babylon, New York 11704, between the hours of 8:30 A.M. and 4:00 P.M. prevailing time, at which time any person will be entitled to have his name placed on such register, provided that he or she is known or proven to the satisfaction of the Board of Registration to be then or thereafter entitled to vote at such election for which the register is prepared. The register so prepared pursuant to §2014 of the Education Law will be filed in the Office of the Acting District Clerk of the School District in the Administration Building, and will be open for inspection by any qualified voter of the District beginning on June 10, 2010, between the hours of 9:00 A.M. and 4:00 P.M. prevailing time, on weekdays, and each day prior to the day set for the election, except Sunday and holidays and at the polling place(s) on the day of the vote.

AND FURTHER NOTICE IS HEREBY GIVEN, that pursuant to §2014, of the Education Law of the State of New York, the Board of Registration will meet

Residence

SUMMONS WITH NOTICE
Defendant resides at: 31 Dawn Road, Rocky Point, NY 11778/266 Dare Road, Selden, New York 11784

Alicia Gerardo Plaintiff,
-against-
Vincent M. Gerardo Pro-Se, Defendant.

on Tuesday, June 8, 2010, between the hours of 9:00 A.M. and 9:00 P.M., prevailing time, at the Administration Building, 10 Farmingdale Road, West Babylon, New York 11704, and the Santapogee School, 1130 Farmingdale Road, West Babylon, NY 11704, to prepare the Register of the School District to be used at the Special Meeting election to be held June 15, 2010, and any special district meetings that may be held after the preparation of said Register, at which time any person will be entitled to have his or her name placed on such Register provided that at such meeting of said Board of Registration or she is known or proven to the satisfaction of such Board of Registration to be then or thereafter entitled to vote at the Meeting for which said Register is prepared, or any special district meeting held after June 15, 2010.

AND FURTHER NOTICE IS HEREBY GIVEN, that application for absentee ballots for and approval of the budget may be applied for by eligible residents at the office of the Acting Clerk of the District (Administration Offices, 10 Farmingdale Road, West Babylon, New York 11704), beginning June 1, 2010, between the hours of 8:30 A.M. and 4:00 P.M., prevailing time, Monday through Friday, except holiday in accordance with Section 2018-a of the Education Law. The completed application must be received by the Acting District Clerk, at least seven (7) days before the election if the ballot is to be mailed to the voter, or the day before the election, if the ballot is to be delivered personally to the voter. No absentee voter's ballot shall be canvassed unless it shall have been received in the Office of the Acting District Clerk of the School District no later than 5:00 P.M., prevailing time, on the day of the election, Tuesday, June 15, 2010. A list of all persons to whom absentee ballots shall have been issued will be available for inspection by qualified voters of the District in the said Office of the Acting District Clerk on each of the five (5) days prior to the day of election, except Saturdays, Sundays and holidays, between the hours of 8:30 A.M. and 4:00 P.M., prevailing time and shall be available at the polling place on the day of the vote. Any qualified voter may, upon examination of such list, file a written challenge of the qualifications as a voter of any person whose name appears on such list, stating the reasons for such challenge. Any such written challenge shall be transmitted by the Acting District Clerk or a designee of the Board of Education to the inspectors of election on Election Day.

During all hours of voting and registration, the Acting District Clerk shall be at Election District No. 1.

SCHOOL ELECTION DISTRICTS

The boundaries of the school election districts and the place in each election district of registration and voting shall be as follows:

Election District No. 1
Election District No. 1 meets in the Board Room of the Administration Wing of the Senior High School, 10 Farmingdale Road, West Babylon, New York, and the said election district comprises all that portion of West Babylon Union Free School District, Town of Babylon, lying south of Sunrise Highway.

Election District No. 2
Election District No. 2 meets in the Santapogee School, 1130 Herzel Boulevard, West Babylon, New York and the said election district comprises all that portion of the West Babylon Union Free School District, Town of Babylon, lying north of Sunrise Highway.

Dated: May 24, 2010
West Babylon, New York

BY THE ORDER OF THE BOARD OF EDUCATION WEST BABYLON UNION FREE SCHOOL DISTRICT, TOWN OF BABYLON, SUFFOLK COUNTY, NEW YORK

By: Barbara Burrows, Acting District Clerk West Babylon Union Free School District Administration Building 10 Farmingdale Road West Babylon, New York 11704

ACTION FOR A DIVORCE

To the above named Defendant:

YOU ARE HEREBY SUMMONED to serve a notice of appearance on the Plaintiff's attorney within twenty (20) days after the service of this summons, exclusive of the day of service (or within thirty (30) days after the service is completely delivered to you within the State of New York); and in case of your failure to appear, judgment will be taken against you by default for the relief demanded in the notice set forth below.
Dated: March 24, 2010
Rocky Point, New York

Christena M. Ward, Esq.
Attorney for Plaintiff,
333 Route 25A, Suite 10
Rocky Point, New York 11778
(631) 821-3001

NOTICE: The nature of this action is to dissolve the marriage between the parties, on the grounds of: Abandonment (DRL §170(2)).

The relief sought is a judgment of absolute divorce in favor of the Plaintiff, dissolving the marriage between the parties in this action. The nature of any ancillary or additional relief demanded is: Equitable Distribution of Marital Property, Compelling Defendant to pay just and suitable child support, granting the Plaintiff such other and further relief as the Court deems just and proper.

Legal Notice 16451278

Meeting Notice
The next meeting of the Town of Islip Community Development Board of Directors will be held on Wednesday, June 9, 2010, at 9:30 a.m., in the Town Hall Room at Islip Town Hall, 655 Main Street, Islip, New York. The meeting is open to the public.

Paul Fink, Executive Director
Town of Islip Community Development Agency

Legal Notice 16451294

NOTICE OF SPECIAL DISTRICT MEETING (2010) WYANDANCH UNION FREE SCHOOL DISTRICT TOWN OF BABYLON SUFFOLK COUNTY, NEW YORK

NOTICE IS GIVEN, that the re-vote on the school district budget for the year 2010/2011 will take place in the school district at the Central Administration Building, 1445 Dr. Martin Luther King, Jr., Blvd., Wyandanch, New York, in said district on Tuesday, June 8, 2010 at 7:00 P.M. for

1) discussion of the budget for the school year 2010/2011;
2) such further business as is authorized by the Education Law

NOTICE IS FURTHER GIVEN, that a statement of estimated expenses of the school year 2010/2011 will be prepared and copies of such statement may be obtained by any resident of the district at each school house in the district, between 8:00 A.M. and 4:00 P.M. daily, except Saturday, Sunday and holidays, during the fourteen days immediately preceding the re-vote meeting on the budget and on the date of June 8, 2010.

NOTICE IS FURTHER GIVEN, that pursuant to Section 2014 of the Education Law, personal registration of voters is required and no person shall be entitled to vote at said meeting whose name does not appear on the register of said school district unless registered in accordance with Article 5 of the Election Law of the State of New York.

NOTICE IS FURTHER GIVEN, that all qualified voters who registered or voted in an annual or special school district meeting within the last four (4) calendar years are not required to register with the Board of Registration for this meeting.

NOTICE IS FURTHER GIVEN, that applications for Absentee Ballots for approval of the budget may be applied for at the office of the Clerk of the District, 1445 Dr. Martin Luther King, Jr. Blvd., Wyandanch, New York 11798, in accordance with Section 2018-a of the Education Law. Such application must be received by the District Clerk at least seven (7) days before the re-vote ballot is to be mailed to the voter, or the day before the re-vote, if the ballot is to be delivered personally to the voter. No absentee voter's ballot shall be canvassed unless it shall have been received in the office of the Clerk of the district no later than 5:00 P.M. on the day of the re-vote. A list of all persons to whom absentee ballots shall have been issued will be available in the office of the Clerk of the district on each of the five (5) days prior to the day of the re-vote, except Saturdays, Sundays and holidays and on the date of the re-vote. Any qualified voter may, upon examination of such list, state in writing the reasons for such challenge. Any such written challenge shall be transmitted by the District Clerk or a designee of the Board of Education to the inspectors of the election on the day of the re-vote.

During all hours of voting and registration, the District Clerk shall be at 1445 Dr. Martin Luther King, Jr. Boulevard, Wyandanch, NY 11798.

Dated: May 25, 2010
Wyandanch, New York

BY THE ORDER OF THE BOARD OF EDUCATION WYANDANCH UNION FREE SCHOOL DISTRICT, TOWN OF BABYLON, SUFFOLK COUNTY, NEW YORK

By: Betty Jo Joynes, District Clerk
Wyandanch Union Free School District

Legal Notice 16451435

NOTICE TO BIDDERS
Sealed Bids will be received by the Village of Great Neck Estates, Atwater Plaza, 4 Gateway Drive, Great Neck, New York until June 24, 2010 at 3:00 pm prevailing time, at which time and place bids will be publicly opened and read, and contract awarded as soon thereafter as practicable for:

INCORPORATED VILLAGE OF GREAT NECK ESTATES SWIMMING POOL FACILITY REHABILITATION CONTRACT

Specifications may be obtained at the Village Hall, Atwater Plaza, 4 Gateway Drive, Great Neck, New York on or after June 3, 2010. A pre-bid meeting will be held on Tuesday, June 8, 2010, 9:30 a.m. at the project site.

Bids must be submitted in a sealed envelope, prominently marked on the outside, "VILLAGE OF GREAT NECK ESTATE SWIMMING POOL FACILITY REHABILITATION".

A fee of FIFTY (\$50.00) DOLLARS by check or money order, payable to the Village of Great Neck Estates Treasurer, will be required for each Contract Document Book requested.

Prospective bidders requesting Contract Documents by mail must remit an additional fee of \$25.00 per Book, to cover printing, handling and first class mail.

The right is reserved to waive any informality in, reject any or all Bids submitted, or to accept the Bid and award the Contract to the lowest responsible Bidder therefore, pursuant to Section 103 of the General Municipal Law.

Complete Specifications for the above items may be obtained at the Village Clerk's office.

INCORPORATED VILLAGE OF GREAT NECK ESTATE
Kathleen I. Santelli,
Village Administrator

Legal Notice 16446220

NOTICE OF SALE
SUPREME COURT: COUNTY OF SUFFOLK - HSBC MORTGAGE SERVICES INC., Plaintiff, AGAINST MARIA TURCIOS, ET AL., Defendant(s). Pursuant to a judgment of foreclosure and sale duly dated 4/20/2010, I, the undersigned Referee will sell at public auction at the Islip Town Hall, 655 Main Street, Islip, New York, on 6/22/2010 at 1:15 PM, premises known as 95 KENWOOD DRIVE, BOHEMIA, NY 11716. All that certain plot piece or parcel of land, with the buildings and improvements thereon erected, situate, lying and being in the Town of ISLIP, County of Suffolk and State of New York, Section, Block and Lot: 169.00-01.00-002.002. Approximate amount of judgment \$534,144.70 plus interest and costs. Premises will be sold subject to provisions of filed Judgment Index #25639/09. J. Gary Waldvogel, Referee.

Steven J. Baum PC,
Attorneys for Plaintiff, P.O. Box 1291, Buffalo, NY 14240-1291
Dated: 5/20/2010

Legal Notice 16440816

NOTICE OF SALE
SUPREME COURT: COUNTY OF SUFFOLK - GMAC MORTGAGE LLC SUCCESSOR BY MERGER TO GMAC MORTGAGE CORPORATION, Plaintiff, AGAINST RONALD KRESH, ET AL., Defendant(s). Pursuant to a judgment of foreclosure and sale duly dated 3/11/2010, I, the undersigned Referee will sell at public auction at the Front Steps of Islip Town Hall, 655 Main Street, Islip, NY 11751, on 6/15/2010 at 4:00 PM, premises known as 8 BIRCHDALE DRIVE, HOLBROOK, NY 11741. All that certain plot piece or parcel of land, with the buildings and improvements thereon erected, situate, lying and being in the Town of ISLIP, County of Suffolk and State of New York, Section, Block and Lot: 216.00-03.00-035.000. Approximate amount of judgment \$296,074.78 plus interest and costs. Premises will be sold subject to provisions of filed Judgment Index #22604/08. Anthony M. Lapinta, Referee.

Steven J. Baum PC,
Attorneys for Plaintiff, P.O. Box 1291, Buffalo, NY 14240-1291
Dated: 5/13/2010

Legal Notice 16451389

NOTICE TO BIDDERS
The Board of Education of the Three Village Central School District, Towns of Brookhaven and Smithtown, County of Suffolk, E. Setauket, New York in accordance with Section 103 of Article 5-A of the General Municipal Law, hereby invites the submission of sealed bids for:

● **PRINTED MATERIALS**
June 14, 2010, for use in the schools of the District. Bids will be received until 11:00 A.M. on the 14th day of June, 2010 in the Conference Room, North Country Administration Building, 100 Suffolk Avenue, Stony Brook, New York, at which time and place all bids will be publicly opened. Specifications and bid forms may be obtained at the same office. The Board of Education reserves the right to reject all bids. Any bid submitted will be binding for sixty (60) days subsequent to the date of the bid opening.

Bids must be accompanied by a bid security deposit (bid bond, certified check, official check or money order). Board of Education
Three Village Central School District
Town of Brookhaven and Smithtown
County of Suffolk
E. Setauket, New York
Purchasing Department

Legal Notice 16451278

NOTICE OF SALE
SUPREME COURT: COUNTY OF SUFFOLK - STATE OF NEW YORK MORTGAGE AGENCY, Plaintiff, AGAINST SCOTT MAIFORTH, ET AL., Defendant(s). Pursuant to a judgment of foreclosure and sale duly dated 10/20/2009, I, the undersigned Referee will sell at public auction at the Babylon Town Hall, 200 E. Sunrise Highway, No. Lindenhurst, New York, on 6/29/2010 at 11:00 AM, premises known as 234 WEST 11TH STREET, DEER PARK, NY 11729. All that certain plot piece or parcel of land, with the buildings and improvements thereon erected, situate, lying and being in the Town of ISLIP, County of Suffolk and State of New York, Section, Block and Lot: 087.00-03.00-100.000. Approximate amount of judgment \$92,473.01 plus interest and costs. Premises will be sold subject to provisions of filed Judgment Index #9466/09. Robert J. Flynn, Jr., Referee.

Steven J. Baum PC,
Attorneys for Plaintiff, P.O. Box 1291, Buffalo, NY 14240-1291
Dated: 5/20/2010

Legal Notice 16451129

NOTICE OF SALE
SUPREME COURT: COUNTY OF SUFFOLK - GMAC MORTGAGE LLC SUCCESSOR BY MERGER TO GMAC MORTGAGE CORPORATION, Plaintiff, AGAINST RONALD KRESH, ET AL., Defendant(s). Pursuant to a judgment of foreclosure and sale duly dated 3/11/2010, I, the undersigned Referee will sell at public auction at the Front Steps of Islip Town Hall, 655 Main Street, Islip, NY 11751, on 6/15/2010 at 4:00 PM, premises known as 8 BIRCHDALE DRIVE, HOLBROOK, NY 11741. All that certain plot piece or parcel of land, with the buildings and improvements thereon erected, situate, lying and being in the Town of ISLIP, County of Suffolk and State of New York, Section, Block and Lot: 216.00-03.00-035.000. Approximate amount of judgment \$296,074.78 plus interest and costs. Premises will be sold subject to provisions of filed Judgment Index #22604/08. Anthony M. Lapinta, Referee.

Steven J. Baum PC,
Attorneys for Plaintiff, P.O. Box 1291, Buffalo, NY 14240-1291
Dated: 5/13/2010

Legal Notice 16451278

NOTICE OF SALE
SUPREME COURT: COUNTY OF SUFFOLK - STATE OF NEW YORK MORTGAGE AGENCY, Plaintiff, AGAINST SCOTT MAIFORTH, ET AL., Defendant(s). Pursuant to a judgment of foreclosure and sale duly dated 10/20/2009, I, the undersigned Referee will sell at public auction at the Babylon Town Hall, 200 E. Sunrise Highway, No. Lindenhurst, New York, on 6/29/2010 at 11:00 AM, premises known as 234 WEST 11TH STREET, DEER PARK, NY 11729. All that certain plot piece or parcel of land, with the buildings and improvements thereon erected, situate, lying and being in the Town of ISLIP, County of Suffolk and State of New York, Section, Block and Lot: 087.00-03.00-100.000. Approximate amount of judgment \$92,473.01 plus interest and costs. Premises will be sold subject to provisions of filed Judgment Index #9466/09. Robert J. Flynn, Jr., Referee.

Steven J. Baum PC,
Attorneys for Plaintiff, P.O. Box 1291, Buffalo, NY 14240-1291
Dated: 5/20/2010

Legal Notice 16451278

NOTICE OF SALE
SUPREME COURT: COUNTY OF SUFFOLK - STATE OF NEW YORK MORTGAGE AGENCY, Plaintiff, AGAINST SCOTT MAIFORTH, ET AL., Defendant(s). Pursuant to a judgment of foreclosure and sale duly dated 10/20/2009, I, the undersigned Referee will sell at public auction at the Babylon Town Hall, 200 E. Sunrise Highway, No. Lindenhurst, New York, on 6/29/2010 at 11:00 AM, premises known as 234 WEST 11TH STREET, DEER PARK, NY 11729. All that certain plot piece or parcel of land, with the buildings and improvements thereon erected, situate, lying and being in the Town of ISLIP, County of Suffolk and State of New York, Section, Block and Lot: 087.00-03.00-100.000. Approximate amount of judgment \$92,473.01 plus interest and costs. Premises will be sold subject to provisions of filed Judgment Index #9466/09. Robert J. Flynn, Jr., Referee.

Steven J. Baum PC,
Attorneys for Plaintiff, P.O. Box 1291, Buffalo, NY 14240-1291
Dated: 5/20/2010

Legal Notice 16451278

NOTICE OF SALE
SUPREME COURT: COUNTY OF SUFFOLK - STATE OF NEW YORK MORTGAGE AGENCY, Plaintiff, AGAINST SCOTT MAIFORTH, ET AL., Defendant(s). Pursuant to a judgment of foreclosure and sale duly dated 10/20/2009, I, the undersigned Referee will sell at public auction at the Babylon Town Hall, 200 E. Sunrise Highway, No. Lindenhurst, New York, on 6/29/2010 at 11:00 AM, premises known as 234 WEST 11TH STREET, DEER PARK, NY 11729. All that certain plot piece or parcel of land, with the buildings and improvements thereon erected, situate, lying and being in the Town of ISLIP, County of Suffolk and State of New York, Section, Block and Lot: 087.00-03.00-100.000. Approximate amount of judgment \$92,473.01 plus interest and costs. Premises will be sold subject to provisions of filed Judgment Index #9466/09. Robert J. Flynn, Jr., Referee.

Steven J. Baum PC,
Attorneys for Plaintiff, P.O. Box 1291, Buffalo, NY 14240-1291
Dated: 5/20/2010

Legal Notice 16451278

NOTICE OF SALE
SUPREME COURT: COUNTY OF SUFFOLK - STATE OF NEW YORK MORTGAGE AGENCY, Plaintiff, AGAINST SCOTT MAIFORTH, ET AL., Defendant(s). Pursuant to a judgment of foreclosure and sale duly dated 10/20/2009, I, the undersigned Referee will sell at public auction at the Babylon Town Hall, 200 E. Sunrise Highway, No. Lindenhurst, New York, on 6/29/2010 at 11:00 AM, premises known as 234 WEST 11TH STREET, DEER PARK, NY 11729. All that certain plot piece or parcel of land, with the buildings and improvements thereon erected, situate, lying and being in the Town of ISLIP, County of Suffolk and State of New York, Section, Block and Lot: 087.00-03.00-100.000. Approximate amount of judgment \$92,473.01 plus interest and costs. Premises will be sold subject to provisions of filed Judgment Index #9466/09. Robert J. Flynn, Jr., Referee.

Steven J. Baum PC,
Attorneys for Plaintiff, P.O. Box 1291, Buffalo, NY 14240-1291
Dated: 5/20/2010

Legal Notice 16451120

LEGAL NOTICE
EXTRA SPACE STORAGE FACILITY OPERATORS SALE FOR NON-PAYMENT OF STORAGE CHARGES PURSUANT TO THE POWER OF SALE CONTAINED IN STATE OF NEW YORK LIEN LAWS RE: SELF STORAGE FACILITIES/ NY CLS LIEN SECTION 182(83) THRU CHAPTER 738(94) 4. GENERAL CHARGES AND FOR THE SATISFACTION OF THE FACILITY OPERATORS LIEN THE FOLLOWING PROPERTY WILL BE SOLD AT PUBLIC AUCTION ON JUNE 10TH, 2010: 1:30PM ON THE PREMISES OF EXTRA SPACE STORAGE, 4057 JERICHO TURNPIKE, EAST NORTHPORT, NY 11731. EXTRA SPACE STORAGE RESERVES THE RIGHT TO CANCEL A SALE AT ANY TIME FOR ANY REASON FRENCH & SON AUCTIONEERS
1074 MARK WINGOLD; 0364 DAWN M. MURPHY; 2076 MEGAN LUSARDI; 2209 DENISE MOLLER

Legal Notice 16451278

NOTICE OF SALE
SUPREME COURT: COUNTY OF SUFFOLK - STATE OF NEW YORK MORTGAGE AGENCY, Plaintiff, AGAINST SCOTT MAIFORTH, ET AL., Defendant(s). Pursuant to a judgment of foreclosure and sale duly dated 10/20/2009, I, the undersigned Referee will sell at public auction at the Babylon Town Hall, 200 E. Sunrise Highway, No. Lindenhurst, New York, on 6/29/2010 at 11:00 AM, premises known as 234 WEST 11TH STREET, DEER PARK, NY 11729. All that certain plot piece or parcel of land, with the buildings and improvements thereon erected, situate, lying and being in the Town of ISLIP, County of Suffolk and State of New York, Section, Block and Lot: 087.00-03.00-100.000. Approximate amount of judgment \$92,473.01 plus interest and costs. Premises will be sold subject to provisions of filed Judgment Index #9466/09. Robert J. Flynn, Jr., Referee.

Steven J. Baum PC,
Attorneys for Plaintiff, P.O. Box 1291, Buffalo, NY 14240-1291
Dated: 5/20/2010

Legal Notice 16451278

NOTICE OF SALE
SUPREME COURT: COUNTY OF SUFFOLK - STATE OF NEW YORK MORTGAGE AGENCY, Plaintiff, AGAINST SCOTT MAIFORTH, ET AL., Defendant(s). Pursuant to a judgment of foreclosure and sale duly dated 10/20/2009, I, the undersigned Referee will sell at public auction at the Babylon Town Hall, 200 E. Sunrise Highway, No. Lindenhurst, New York, on 6/29/2010 at 11:00 AM, premises known as 234 WEST 11TH STREET, DEER PARK, NY 11729. All that certain plot piece or parcel of land, with the buildings and improvements thereon erected, situate, lying and being in the Town of ISLIP, County of Suffolk and State of New York, Section, Block and Lot: 087.00-03.00-100.000. Approximate amount of judgment \$92,473.01 plus interest and costs. Premises will be sold subject to provisions of filed Judgment Index #9466/09. Robert J. Flynn, Jr., Referee.

Steven J. Baum PC,
Attorneys for Plaintiff, P.O. Box 1291, Buffalo, NY 14240-1291
Dated: 5/20/2010

Legal Notice 16451278

NOTICE OF SALE
SUPREME COURT: COUNTY OF SUFFOLK - STATE OF NEW YORK MORTGAGE AGENCY, Plaintiff, AGAINST SCOTT MAIFORTH, ET AL., Defendant(s). Pursuant to a judgment of foreclosure and sale duly dated 10/20/2009, I, the undersigned Referee will sell at public auction at the Babylon Town Hall, 200 E. Sunrise Highway, No. Lindenhurst, New York, on 6/29/2010 at 11:00 AM, premises known as 234 WEST 11TH STREET, DEER PARK, NY 11729. All that certain plot piece or parcel of land, with the buildings and improvements thereon erected, situate, lying and being in the Town of ISLIP, County of Suffolk and State of New York, Section, Block and Lot: 087.00-03.00-100.000. Approximate amount of judgment \$92,473.01 plus interest and costs. Premises will be sold subject to provisions of filed Judgment Index #9466/09. Robert J. Flynn, Jr., Referee.

Steven J. Baum PC,
Attorneys for Plaintiff, P.O. Box 1291, Buffalo, NY 14240-1291
Dated: 5/20/2010

Legal Notice 16451278

NOTICE OF SALE
SUPREME COURT: COUNTY OF SUFFOLK - STATE OF NEW YORK MORTGAGE AGENCY, Plaintiff, AGAINST SCOTT MAIFORTH, ET AL., Defendant(s). Pursuant to a judgment of foreclosure and sale duly dated 10/20/2009, I, the undersigned Referee will sell at public auction at the Babylon Town Hall, 200 E. Sunrise Highway, No. Lindenhurst, New York, on 6/29/2010 at 11:00 AM, premises known as 234 WEST 11TH STREET, DEER PARK, NY 11729. All that certain plot piece or parcel of land, with the buildings and improvements thereon erected, situate, lying and being in the Town of ISLIP, County of Suffolk and State of New York, Section, Block and Lot: 087.00-03.00-100.000. Approximate amount of judgment \$92,473.01 plus interest and costs. Premises will be sold subject to provisions of filed Judgment Index #9466/09. Robert J. Flynn, Jr., Referee.

Steven J. Baum PC,
Attorneys for Plaintiff, P.O. Box 1291, Buffalo, NY 14240-1291
Dated: 5/20/2010

Legal Notice 16451278

NOTICE OF SALE
SUPREME COURT: COUNTY OF SUFFOLK - STATE OF NEW YORK MORTGAGE AGENCY, Plaintiff, AGAINST SCOTT MAIFORTH, ET AL., Defendant(s). Pursuant to a judgment of foreclosure and sale duly dated 10/20/2009, I, the undersigned Referee will sell at public auction at the Babylon Town Hall, 200 E. Sunrise Highway, No. Lindenhurst, New York, on 6/29/2010 at 11:00 AM, premises known as 234 WEST 11TH STREET, DEER PARK, NY 117



U. S. Department
of Transportation

**Federal Aviation
Administration**

New York Airports District Office
600 Old Country Rd, Suite 446
Garden City, New York 11530
Telephone: 516-227-3800
Fax: 516-227-3813

July 21, 2010

Mr. Ed Knoesel
Aviation Department
The Port Authority of New York and New Jersey
233 Park Ave South, 9th Floor
New York, New York 10003

Re: John F. Kennedy International Airport (JFK)
Terminals 3 and 4 Redevelopment Project
Environmental Determination

Dear Mr. Knoesel:

The Federal Aviation Administration (FAA) has recently approved the Environmental Assessment (EA) and made a Finding of No Significant Impact/Record of Decision (FONSI/ROD) for the Terminal 3 and 4 Redevelopment Project at John F. Kennedy International Airport, New York. A copy of the signed FONSI/ROD and the EA signature page are enclosed.

This Federal environmental approval is a determination by the Approving Official that the requirements imposed by applicable environmental statutes and regulations have been satisfied by a FONSI/ROD. However, it is not an approval of the Federal action approving the funding of eligible items for this project, nor approval of the air space review, nor approval of the revision to the Airport Layout Plan (ALP) to show these projects.

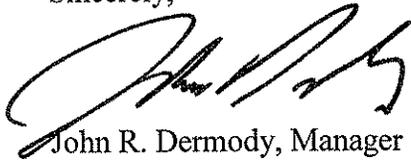
In compliance with Council on Environmental Quality (CEQ) regulations 1501.4(e)(1) and 1506.6, we require that your office make the final EA with Signature Page and FONSI/ROD available to the affected public, and announce such availability through appropriate media in the area. The announcement shall indicate the availability of the document for examination and note the appropriate location of general public access where the document may be found (i.e., your office, local libraries, public buildings, etc.). We request that a copy of such announcement be sent to the NYADO when it is issued.

Finally, your attention is directed to the mitigating measures that were made a condition of approval of the FONSI/ROD. Please be reminded that these measures must be taken by the airport sponsor in order to meet the terms of the FONSI/ROD.

The process of making these environmental determinations is that of a partnership between yourself, as airport sponsor, and the other contributing parties, both public and private. We thank you for your effort and cooperation.

Please contact our office if you have any questions.

Sincerely,

A handwritten signature in black ink, appearing to read "John R. Dermody". The signature is fluid and cursive, with a large initial "J" and "D".

John R. Dermody, Manager
New York Airports District Office

Enclosures (2)

cc: S. Potter, Landrum & Brown

DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION
FINDING OF NO SIGNIFICANT IMPACT
RECORD OF DECISION

Location

John F. Kennedy International Airport (JFK)
Jamaica, Queens County, New York

Introduction

This Finding of No Significant Impact/Record of Decision (FONSI/ROD) sets out the Federal Aviation Administration's (FAA) consideration of environmental and other factors for Airport Layout Plan (ALP) approval and federal financial assistance for the Terminals 3 and 4 Redevelopment Project at John F. Kennedy International Airport (JFK). This FONSI/ROD is based on the Environmental Assessment (EA) for *Terminals 3 and 4 Redevelopment Project* prepared by the Port Authority of New York and New Jersey, dated June 2010.

Background

Terminal 3 at JFK, formerly known as the Pan Am Terminal, was built in 1960 and serves as a principal international gateway for Delta Air Lines and has 16 aircraft gates. Because of the building's irregular shape and site constraints, efforts to refurbish and modernize Terminal 3 have not been fully successful. As such, the terminal does not meet modern airline requirements and does not offer passengers the amenities that are expected at airports. In order to improve levels of service and efficiency of operation, Delta Air Lines would like to redevelop Terminals 3 and 4 to provide the necessary infrastructure for these purposes.

Project Description

The proposed project involves the following:

- Relocate 16 Delta Air Lines aircraft gates from Terminal 3 to Terminal 4:
 - Expand Concourse B of Terminal 4 by nine gates;
 - Maintain the three existing Delta Air Lines gates at Terminal 4;
 - Redesignate four existing gates at Terminal 4 as Delta Air Lines gates;
 - Develop additional passenger processing facilities at Terminal 4 to accommodate the additional passengers; and
 - Install water quality treatment devices.
- Extend a secure pedestrian walkway/bridge from Terminal 2 to Terminal 4;
- Demolish existing Terminal 3 and its 16 gates now currently occupied by Delta Air Lines, including ancillary facilities;
- Redevelop the area where Terminal 3 was located to accommodate aircraft parking positions;
- Reconfigure taxiways and connections to existing taxiways between Terminals 2, 3, and 4;
- Relocate ground service equipment fueling facility at Terminal 3 and 4 to a more efficient location south of existing Concourse B at Terminal 4; this includes a total of 9 underground tanks to be removed and replaced with appropriated spill prevention, control and countermeasures as well as a fire suppression system.

- Develop three additional gates and the passenger processing building at Terminal 8 to accommodate the air carriers displaced by the redevelopment and reconfiguration of Terminal 4. The displaced carriers would utilize up to four existing Terminal 8 gates and the three new gates.

All project elements include associated utilities, marking, lighting, grading, and drainage improvements. The project does not involve any navigational aids or FAA facilities. The project elements are further detailed in the EA.

Proposed Agency Actions

The FAA actions involved in the implementation of the Proposed Action include the following:

- a. Conditional approval of the ALP pursuant to 49 U.S.C. § 40103(b) and § 47107(a)(16), and determination of effects upon the safe and efficient utilization of navigable airspace pursuant to 14 CFR Parts 77 and 157 and 49 U.S.C. §44718;
- b. Determination under 49 U.S.C. §§ 40101(d)(1) and 47105(b)(3) whether the proposed project meets applicable design and engineering standards set forth in FAA Advisory Circulars;
- c. Determinations concerning funding through the Federal grant-in-aid program authorized by the Airport and Airway Improvement Act of 1982, as amended (recodified at 49 U.S.C. § 47107) and/or approval of an application to use Passenger Facility Charges (PFCs) (this does not determine eligibility or availability of potential funds);
- d. Determination under 49 U.S.C. § 44502(b) that the airport development is reasonably necessary for use in air commerce or in the interests of national defense;
- e. Continued close coordination with the Port Authority of New York and New Jersey, the City of New York and appropriate FAA program offices, as required, for safety during construction (14 C.F.R. Part 77); and
- f. Approval of appropriate amendments to the JFK Airport Certification Manual (ACM), as required, pursuant to 49 U.S.C. §44706.

Purpose and Need

The purpose and need for the project is to modernize and redevelop the Terminal 3 and 4 envelope to allow Delta Air Lines to more efficiently utilize the space available for the safety, comfort, and convenience of passengers traveling at JFK. The project is needed to accommodate existing and forecast aviation demand at an acceptable level of service while managing and alleviating congestion.

Alternatives

In addition to the proposed project, the no action alternative was considered. Other alternatives with various combinations of replacement/modernization/redevelopment were considered, as were alternatives with various site configurations. Of these alternatives, only the proposed project fully meets the purpose and need and is technologically and economically feasible to implement.

Discussion

The attached EA addresses the effects of the proposed project on the human and natural environment, and is made part of this Finding. The following impact analysis highlights the more thorough analysis presented in the EA.

Noise

The proposed project would not result in an increase in passengers or flight operations, nor would it result in physical changes that would affect runway use or flight tracks. Therefore the proposed project would not impact noise generated by aircraft operations at JFK and would not impact noise levels at the airport or in surrounding communities. The project will result in temporary and localized noise impacts from construction related activities, however, these impacts will not be significant.

Air Quality

JFK is located in a nonattainment area under the Clean Air Act of 1990, as amended, for fine particulate matter (PM_{2.5}) and moderate nonattainment for 8 hour ozone.

Both a General Conformity Analysis and an Air Quality Hot Spot analysis were performed pursuant to the General Conformity Rule of the Clean Air Act (CAA), as amended (42 U.S.C. 7401-7671), and Section 176(c) of the CAA. The analyses conclude that the proposed project will not result in operational or construction related emissions that equal or exceed applicable *de minimis* threshold rates, nor increase the frequency or severity of any existing violations of the national standards. Therefore, a Conformity Determination was not required. Based on these analyses, the proposed project will conform to the New York State Implementation Plan (SIP) and comply with the conformity rules and requirements of the CAA. No adverse impacts to air quality are expected as a result of this project.

Water Quality

The proposed project will result in stormwater runoff during construction. The proposed project will not change the type or quality of surface runoff or pollutant concentrations. The Port Authority has been issued a State Pollution Discharge Elimination System (SPDES) permit for the entire airport that includes monthly requirements for specified water quality constituents. The constituents and their discharge limitations have been chosen to specifically address issues relating to airport operations. Discharges occurring via the stormwater conveyance system would be in accordance with the SPDES permit. During construction, stormwater runoff would be managed through the implementation of a Storm Water Pollution Prevention Plan (SWP3), which includes best management practices (BMP) to prevent stormwater contamination during construction. BMPs include provisions for the control and/or prevention of soil erosion and containment of construction materials, among others. Based on the above, it is not anticipated that implementation of the proposed projects will result in significant adverse impacts to water quality.

Historic Preservation

Terminal 3, the former Pan Am Terminal, had been declared eligible for listing on the National Register of Historic Places in 1988 by the New York State Historic Preservation Office (NYSHPO). Upon further examination in 2001, it was determined that alterations and additions that had been made to the building caused extensive loss of integrity to the original design and

materials. As such, in 2001, NYSHPO reevaluated the former Pan Am Terminal and determined that the building does not meet the criteria for listing on the National Register of Historic Places. This determination was validated in June, 2009. Accordingly, the proposed project will not result in adverse effects to historic resources.

Hazardous Materials

Investigations have been conducted to identify the hazardous materials present in and around Terminals 3, 4, and 8. The hazardous materials present in the involved terminals include asbestos/asbestos containing materials (insulation, tiles), lead (painted surfaces, plumbing solder), polychlorinated biphenyls [PCBs] (fluorescent light ballasts), chlorofluorocarbons [CFCs] (refrigeration and air conditioning), mercury (lighting, switches, thermometers), and petrochemical (jet fuel, gasoline). There is the potential for short-term temporary impacts from the handling of these materials during demolition and construction. Appropriate best management practices will be applied during demolition and construction. Further, the handling, transportation, disposal, and recycling of these materials will be conducted in accordance with applicable federal, state, and local requirements. Accordingly, the proposed project is not anticipated to result in any significant impacts involving hazardous materials.

Coastal Zone Management

JFK is located within the designated New York State Department of State (NYSDOS) Coastal Zone Management Area (CZMA). Accordingly, any work undertaken within the CZMA is subject to consistency with the programs of the New York State Coastal Zone Management Program.

A coastal zone consistency determination was prepared and submitted by the airport sponsor to the NYSDOS on May 25, 2010 to determine whether the proposed projects were consistent with the approved coastal zone management plan. In its July 9, 2010 letter to the airport sponsor, the NYSDOS concurred with the coastal zone consistency determination. Therefore, it can be concluded that there would be no significant adverse impacts to the CZMA as result of the proposed actions.

Construction Impacts

Construction of the proposed projects is not expected to cause any significant long-term environmental impacts, although limited short-term impacts resulting from construction operations, such as equipment noise, may occur. However, these impacts will be controlled and limited by compliance with the mitigation measures set forth in the FAA's Advisory Circular 150/5370-10A, "Standards for Specifying Construction of Airports," Item P-156, Temporary Air and Water Pollution, Soil Erosion, and Siltation Control; and Advisory Circular 150/5320-5B, "Airport Drainage".

Summary of All Impact Categories

The impacts of the proposed projects on noise, land use compatibility, social, indirect socioeconomic, air quality, DOT Section 4(f), historic or cultural resources, wetlands, water quality, coastal zones, floodplains, coastal barriers, wild and scenic rivers, fish, wildlife and plants, prime and unique farmland, energy supply and natural resources, light emissions, solid waste impacts and construction impacts, hazardous materials, environmental justice, and cumulative impacts were evaluated in the EA. It is the FAA's finding that the proposed action will not have any significant effect on any of the above noted categories.

Coordination with the General Public

A Notice of Public Availability was published in both the City and Long Island editions of *Newsday* on June 1, 2010. The document was also made available to the public via the internet at <http://www.airportsites.net/JFK-Delta-EA>. The review and comment period was from June 1, 2010 through June 15, 2010. No comments were received.

Mitigation Measures

1. Construction contract specifications developed for the projects shall contain the provisions of FAA Advisory Circular 150/5370-10A, "Standards for Specifying Construction of Airports," Item P-156, Temporary Air and Water Pollution, Soil Erosion, and Siltation Control; and Advisory Circular 150/5320-5B, "Airport Drainage."
2. All necessary permits for construction of the proposed projects shall be obtained prior to construction, including a construction stormwater SPDES permit when applicable.
3. Best Management Practices will be applied when dealing with the hazardous materials during demolition and construction. The handling, transportation, disposal, and recycling of these materials will be conducted in accordance with applicable federal, state, and local requirements.

Decision and Order

The FAA recognizes its responsibilities under the National Environmental Policy Act of 1969 (NEPA) and its implementing Council on Environmental Quality (CEQ) regulations, and its own directives. Recognizing these responsibilities, I have carefully considered the FAA's goals and objectives in relation to the various aeronautical aspects of the *Terminals 3 and 4 Redevelopment Project* as discussed in the Environmental Assessment, and I have used the environmental process to make a more informed decision. This review included the purposes and needs to be served by this project, alternative means of achieving them, the environmental impacts of these alternatives, and the mitigation necessary to preserve and enhance the human environment.

After careful and thorough consideration of the facts contained herein, the undersigned finds that the proposed Federal action is consistent with existing national environmental policies and objectives as set forth in section 101 of the NEPA and other applicable environmental requirements and will not significantly affect the quality of the human environment or otherwise include any condition requiring consultation pursuant to section 102(2)(C) of NEPA.

I therefore direct that action be taken to carry out the agency actions noted above. Specifically:

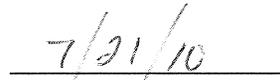
1. Conditional approval of the ALP pursuant to 49 U.S.C. § 40103(b) and § 47107(a)(16), and determination of effects upon the safe and efficient utilization of navigable airspace pursuant to 14 CFR Parts 77 and 157 and 49 U.S.C. §44718;
2. Determination under 49 U.S.C. §§ 40101(d)(1) and 47105(b)(3) as to whether the proposed project meets applicable design and engineering standards set forth in FAA Advisory Circulars;

3. Determinations concerning funding through the Federal grant-in-aid program authorized by the Airport and Airway Improvement Act of 1982, as amended (recodified at 49 U.S.C. § 47107) and/or approval of an application to use Passenger Facility Charges (PFCs) (this does not determine eligibility or availability of potential funds); and
4. Determination under 49 U.S.C. § 44502(b) that the airport development is reasonably necessary for use in air commerce or in the interests of national defense.
5. Continued close coordination with the Port Authority of New York and New Jersey, the City of New York and appropriate FAA program offices, as required, for safety during construction (14 C.F.R. Part 77); and,
6. Approval of appropriate amendments to the JFK Airport Certification Manual (ACM), as required, pursuant to 49 U.S.C. §44706.

Approved:



William J. Flanagan



Date

Division Manager
Eastern Region Airports Division
Federal Aviation Administration

This decision is taken pursuant to the 49 U.S.C. § 40101 et seq. (Part A) and 49 U.S.C. § 47101 et seq. (Part B), and constitutes a final order of the Administrator which is subject to review by the courts of appeals of the United States in accordance with the provision of 49 U.S.C. § 46110.



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

DAVID A. PATERSON
GOVERNOR

LORRAINE A. CORTÉS-VAZQUEZ
SECRETARY OF STATE

July 9, 2010

Mr. Marc Helman, Supervisor
Permits & Governmental Approvals
Environmental Engineering Unit
The Port Authority of NY & NJ
2 Gateway Center, 14th Floor
Newark, New Jersey 07102

Re: F-2010-0474
Federal Aviation Administration
The Port Authority of NY & NJ
Terminal expansions, demolition, connector and fuel farm
relocation
Borough of Queens, Queens County
General Concurrence

Dear Mr. Helman:

The Department of State received your Federal Consistency Assessment Form and consistency certification and supporting information for this proposal on May 28, 2010.

The Department of State has determined that this proposal meets the Department's general consistency concurrence criteria. Therefore, further review of the proposed activity by the Department of State, and the Department's concurrence with an individual consistency certification for the proposed activity, are not required.

This General Concurrence is without prejudice to and does not obviate the need to obtain all other applicable licenses, permits, other forms of authorization or approval that may be required pursuant to existing State statutes.

When communicating with us regarding this matter, please contact us at (518) 474-6000 and refer to our file #F-2010-0474.

Sincerely,

Jeffrey Zappier
Supervisor, Consistency Review Unit
Office of Coastal, Local Government
and Community Sustainability

JZ/wf/dc

cc: COE/New York District – Stacey Jensen
DEC/Region 2 – John Cryan