PORT AUTHORITY OF NEW YORK AND NEW JERSEY

AIRPORT SUSTAINABILITY REPORT

2014

THE PORT AUTHORITY OF NY & NJ

LETTER FROM THE DIRECTOR

It is my pleasure to present the first Sustainability Report covering the Port Authority of New York and New Jersey's airport system, one of the busiest airport systems in the world and a critical domestic and international gateway for our region.

This year's sustainability report builds off individual reports completed for Newark Liberty International and Teterboro Airports last year. We have committed to reporting on progress through the Global Reporting Initiative framework, and this system-wide report reflects our first comprehensive review of the department's sustainability efforts.

In the past several years, we have published Sustainable Management Plans for Newark Liberty International, Teterboro, and Stewart International Airports. These plans have provided a set of strategic actions that our staff have been implementing across all of our facilities.

At the Port Authority, we view sustainability as a key component of our agency's business priorities. To us, sustainability is not just about caring for the environment - it is about providing a resilient, safe, secure, and customer-friendly transportation network for our region. A sustainable operation allows us to focus on what we need to do best—allow for the efficient transport of passengers and goods through our facilities, while providing high quality service and functioning as an economic engine for the New York/New Jersey area.

Our airport system's ability to operate at the highest level of efficiency will be constrained by rising passenger demand and by extreme weather in the future. In addition to demonstrating social, economic, and environmental stewardship, we are working on programs which will address airport delay and capacity constraints as well as projects that will protect our facilities from sea level rise and stronger storms.

Our philosophy is one of continuous improvement. This sustainability report will be launched as a springboard to update our sustainability plans and further align our targets and goals among our airports. Additionally, the report serves as a backbone for key business planning strategies and creates a metrics database that all staff can refer to in order to benchmark their activities. We look forward to sharing our accomplishments as we innovate for the future at our airports.

Thomas L. Bosco
Director
Aviation Department

ABOUT THIS REPORT

This Sustainability Report is the first to be published for the Aviation Department of the Port Authority of NY and NJ.

While previous reports have focused on individual airports that the Port Authority operates, this report will broaden its focus to all airports under control of the Aviation Department. The Port Authority has written this report in accordance with the Global Reporting Initiative Airport Operators Sector Supplement, Version 4, In accordance with the Core requirements of G4.

This report covers primarily the calendar year, January 1, 2014 to December 31, 2014. The Port Authority intends to release department-wide sustainability reports biennially. While the report focuses on 2014, some metrics in the report cover the calendar year 2013. Two reasons for this are (1) reporting data for 2014 is not yet available at time of publication and (2) no significant changes are expected for CY 2014.

The purpose of this report is not to restate previous reports. There are no significant changes to the report or airports from previous reporting periods. A table identifying the location of all standard disclosures is within Appendix B of the report. To view past sustainability reports, please go to www.panynj.gov/about/airport-sustainability.html

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This report is a progress report covering activities completed under the Sustainable Management Plans previously written for Newark Liberty International Airport (EWR), Teterboro Airport (TEB), and Stewart International Airport (SWF). Additionally, this report includes updates on strategic initiatives at John F. Kennedy International Airport (JFK) and LaGuardia Airport (LGA). As such, the topics covered in this report will align to the focus areas, goals, targets, and initiatives put forth in the Sustainable Management Plans, as well as organization-wide sustainability policy.

To form the sustainable management plans, airports identified all items with a stakeholder group that included Port Authority staff from a wide range of departments at the airports, as well as engineering and environmental staff. The Port Authority intends to use sustainability reports as benchmarks for internal performance, as well as demonstration of performance to tenants, airport employees, the aviation industry at large, and the public.

This report covers Port Authority of New York and New Jersey controlled activities within JFK, EWR, LGA, TEB, and SWF. While some tenant-influenced activities are captured in this report, tenant activity falls outside the operational boundary of reporting. Where these activities are included, they will be clearly noted. The Port Authority's supply chain includes facility tenants, along with the goods and services needed for Port Authority operations and construction activity at each airport. The report addresses Port Authority activities, except where noted, and does not address the activities of Port Authority suppliers, tenants, or contractors, except where noted.

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01

01\ OUR AIRPORTS AND DESTINATIONS

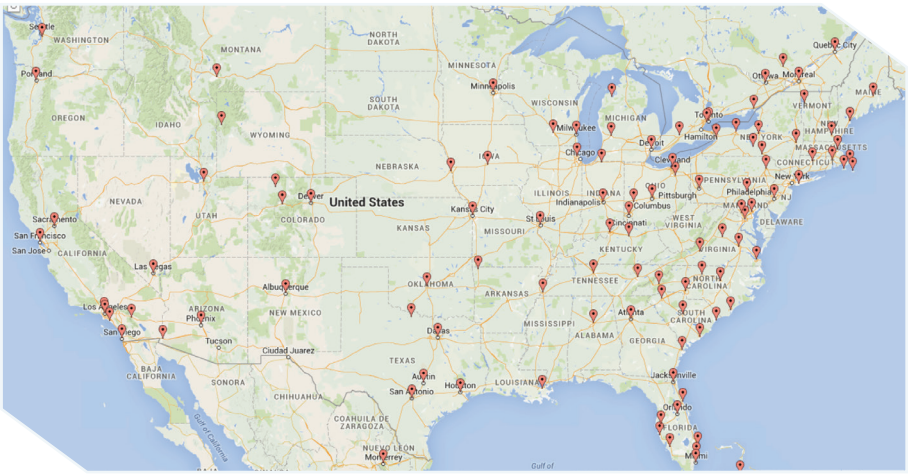
The Port Authority's airports are major economic drivers for the New York and New Jersey region, and are key cornerstones of the market for air travel within the US and across the globe.

Serving about 270 destinations with direct passenger service, the Port Authority's airports have few rivals in connecting the world. Our airports serve a catchment area that includes the NYC Metro Area, including suburban counties in New York, New Jersey, and Connecticut, as well as the lower Hudson Valley and northeast Pennsylvania. In addition, our airports serve as connecting hubs for United Airlines, American Airlines, Delta Airlines, Jetblue Airways, and several international carriers holding interline agreements with US Flag Carriers. In total, our airports served more than 117 million passengers and 2 million short tons of freight in more than 1.2 million flight operations in 2014. Our airports serve 215 cities with non-stop passenger service on 85 airlines, connecting the globe.

WORLDWIDE
DESTINATIONS SERVED BY
Non-Stop Service from Port Authority Airports

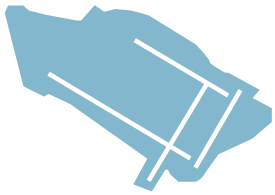
U.S. DESTINATIONS SERVED BY

Non-Stop Service from Port Authority Airports



JOHN F. KENNEDY INTERNATIONAL AIRPORT

JFK
4,930 ACRES



Destinations	161
Airlines	77
Four Primary Runways	13L-31R: 10,000 x 150 ft 13R-31L: 14,572 x 200 ft 4R-22L: 8,400 x 200 ft 4L-22R: 11,351 x 150 ft
2014 Passengers	53,254,362
2014 Operations	422,509
Terminals	6
Passenger Boarding Bridges	125

NEWARK LIBERTY INTERNATIONAL AIRPORT

EWR
2,207 ACRES

Destinations	154
Airlines	26
Three Primary Runways	4R-22L: 10,000 x 150 ft 4L-22R: 11,000 x 150 ft 11-29: 6,733 x 150 ft
2014 Passengers	35,600,108
2014 Operations	395,486
Terminals	3
Passenger Boarding Bridges	114

LAGUARDIA AIRPORT

LGA
680 ACRES

Destinations	78
Airlines	11
Two Primary Runways	4-22: 7,000 x 150 ft 13-31: 7,000 x 150 ft
2014 Passengers	26,954,588
2014 Operations	360,834
Terminals	4
Passenger Boarding Bridges	76

STEWART INTERNATIONAL AIRPORT

SWF
1,552 ACRES

Destinations	5
Airlines	4
Two Primary Runways	9-27: 11,817 x 150 ft 16-34: 6,004 x 150 ft
2014 Passengers	305,628
2014 Operations	36,510
Terminals	1
Passenger Boarding Bridges	7

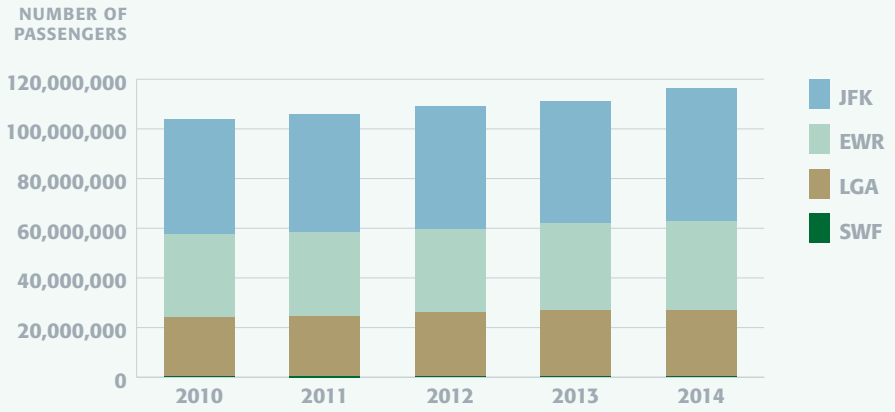
TETERBORO AIRPORT

TEB
830 ACRES

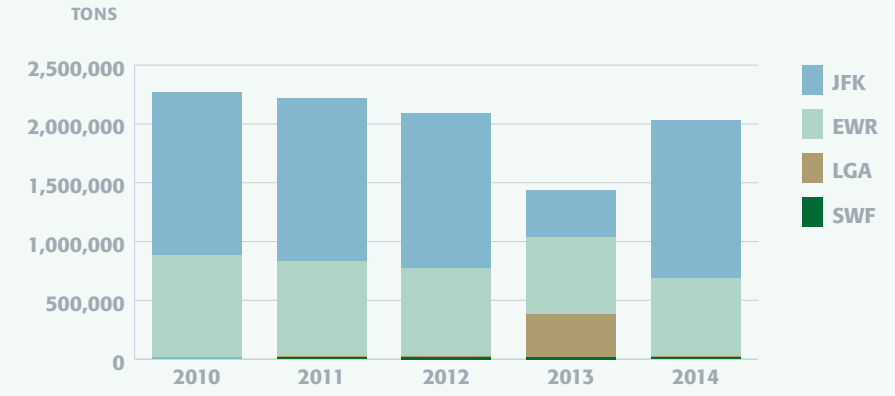
Airlines	None: General Aviation
Two Primary Runways	1-19: 7,000 x 150 ft 6-24: 6,013 x 150 ft

FACTS AND FIGURES

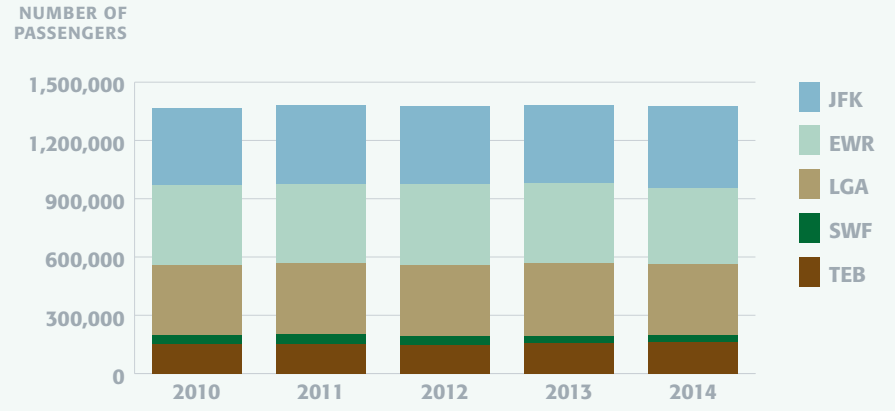
Total Commercial Passenger Traffic BY AIRPORT



TOTAL Cargo Tonage



ALL AIRPORTS Aircraft Movements By Airport



02

02\ CORPORATE GOVERNANCE

The Port Authority of NY & NJ is a bi-state agency that relies solely on user fees and does not rely on tax dollars for operation. The Port Authority undertakes projects and activities in accordance with the Port Compact in 1921, and amendatory and supplemental legislation.

The governor of each state appoints six members to the agency's Board of Commissioners, subject to state senate approval. Commissioners serve as public officials without pay for overlapping six-year terms. The governors retain the right to veto the actions of the Commissioners from his or her own state. Board meetings are public. The Board of Commissioners is governed by the Port Authority's code of ethics, which details the stringent rules that apply to commissioners to avoid conflicts of interest.

As of December 2014, there were twelve commissioners. Two are minority members, and there is one female commissioner. All board members are independent and are not Port Authority executives. The Executive and Deputy Executive Directors do not vote in board meetings.

An Executive Director, appointed by the New York State Governor, is responsible for managing the operation of the Port Authority in a manner consistent with the agency's policies, as established by the Board. The Port Authority undertakes projects and activities in accordance with the Port Compact of 1921, and amendatory and supplemental legislation.

12 MEMBERS
ON THE BOARD OF COMMISSIONERS

MORE THAN TWO THIRDS OF THE PORT AUTHORITY'S 6,777 EMPLOYEES REPRESENTED BY TRADE UNIONS

For board meetings, transparency initiatives include posting an advance listing of items on the agenda, opening up more meetings to the public, disclosing reasons for discussing or acting upon matters in executive session, webcasting all public meetings, and providing for public comment at the public Board meetings. Presentations from board meetings are available on the public website. Presentations are generally completed for each project authorized by the board, and detail the impacts (economic and if applicable, environmental and social) of each proposed project.

More than two thirds of the Port Authority's 6,777 employees are represented by trade unions. Employees are represented by the following unions:

- The International Union of Journeymen and Allied Trades
- The International Union of Operating Engineers
- International Brotherhood of Electrical Workers
- Transport Workers Union
- Port Authority Police Benevolent Association
- Communications Workers of America
- And many others

Stakeholder groups engage with the Port Authority on such issues as tenant and leasehold responsibilities, community connectivity and engagement, aircraft noise issues, and others. The Port Authority engages with stakeholders based on the influence and impact of the airport on those stakeholders. Stakeholder engagement is more fully defined in this report in "Meeting Customer Needs" and "Noise Impacts" chapters.

The Port Authority is also engaged in several industry groups and organizations such as:

- Airports Council International
- National Alliance to Advance NextGen (co-founder)
- American Association of Airport Executives
- US Green Building Council
- Transportation Research Board
- And others

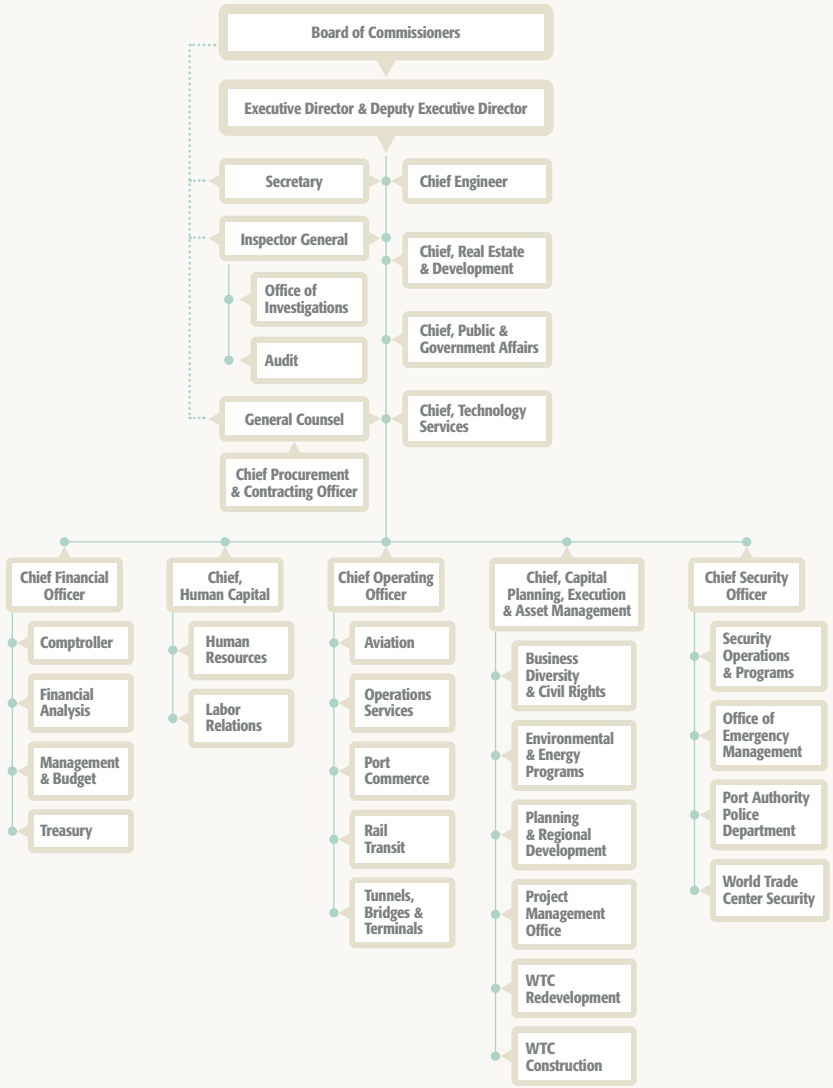
PORT AUTHORITY BOARD OF COMMISSIONERS COMMITTEES

The board has several committees that ensure the delivery of results across key areas of the agency. The board and all committees are governed by the agency By-Laws, which establish rules for the operations of the authority and the board. The committees and their respective charters are listed below:

COMMITTEE	FUNCTION
Audit	The Committee shall be governed by the By-Laws and assist the Board in fulfilling its oversight responsibilities relating to the accounting, auditing, financial reporting processes, and internal controls of the Port Authority.
Capital Planning, Execution, and Asset Management	The Committee shall be governed by the By-Laws and assist the Board in fulfilling its oversight responsibilities relating to the planning and execution of capital projects and the management of assets of the Port Authority.
Finance	The Committee shall be governed by the By-Laws and assist the Board in fulfilling its oversight responsibilities relating to the financial affairs of the Port Authority.
Governance and Ethics	The Committee shall be governed by the By-Laws and assist the Board in fulfilling its oversight responsibilities relating to the development of, and compliance with, the governance and ethics principles of the Port Authority.
Operations	The Committee shall be governed by the By-Laws and assist the Board in fulfilling its oversight responsibilities relating to the operations of the Port Authority.
Security	The Committee shall be governed by the By-Laws and assist the Board in fulfilling its oversight responsibilities relating to the reform and continuing development of the Port Authority's policies and practices related to security and the implementation and ongoing performance thereof.

PORT AUTHORITY ORGANIZATIONAL STRUCTURE

All Port Authority staff are accountable to the Board of Commissioners, through the Executive Director. At the Port Authority, the main business lines or line departments are accountable to the Chief Operating Officer. The line departments include Aviation; Tunnels, Bridges, and Terminals; Port Commerce; Rail Transit; and Operations Services. The remaining departments, called staff departments, support the line departments and core business. The Port Authority's Real Estate assets are managed through the Real Estate Development Office, and the World Trade Center site is managed through the Capital Planning Department. An organizational chart is below. The Port Authority has 6,777 permanent employees.



03

03\ ORGANIZATIONAL SUSTAINABILITY GOALS

The Aviation Department is committed to achieving the sustainability goals established by The Port Authority of New York and New Jersey.

- An 80% reduction in all greenhouse gas emissions related to facilities by 2050, from a 2006 baseline
- Eventually, net zero greenhouse gas emissions from Port Authority operations
- Encouraging tenants, customers, and partners to reduce emissions
- Development of strategies for climate change resilience

The Port Authority's sustainability program and the Sustainable Management Plans for EWR, SWF, and TEB are based on both John Elkington's triple bottom line and the EONS approach that was developed by Airports Council International – North America (ACI-NA) and the Transportation Research Board (TRB) in 2005. The triple bottom line acknowledges that organizational success must not be measured using just financial performance; it must also include the effects on the local, regional and global economy, environment, and society. The triple bottom line seeks to balance the following:

1. Environmental Stewardship
2. Economic Growth
3. Social Responsibility

Port Authority airports follow the approach to sustainability codified by Airports Council International-North America, known as **EONS**, which takes into account four key considerations when sustainability programs are designed and implemented:

Economic Viability
Operational efficiency
Natural resource conservation
Social responsibility

04

04\ ASPECTS OF SUSTAINABILITY AND MATERIALITY

In accordance with the Global Reporting Initiative G4 standards, the Port Authority has conducted a materiality assessment to determine its reporting priorities.

The table below summarizes the aspects of sustainability that this report focuses on and their materiality to the organization. The report is structured to handle each individual aspect as it relates to 2014 activities at the airports.

The Port Authority defines materiality based on the priority of each aspect to the business, our stakeholders, and our customers.

ASPECTS	MATERIALITY STATEMENT
ECONOMIC	
Economic Performance	The economic vitality and performance of our airports are crucial in order to provide a high level of customer service and stakeholder satisfaction.
Indirect Economic Impacts	With over 500,000 jobs dependent upon the economic activity of our airports, our indirect economic impacts are critical for the region's success.

continued on the next page…

THIS REPORT REPRESENTS

THE FIRST EVER COMPREHENSIVE SUSTAINABILITY REPORT

FOR ALL FIVE PORT AUTHORITY AIRPORTS.

ASPECTS	MATERIALITY STATEMENT
ENVIRONMENTAL	
Energy	The Port Authority is responsible for almost 3m Gj of energy. Responsible monitoring, demand response, and efficiency programs affect regional energy competitiveness.
Water	The Port Authority's airports are dependent upon an aging water supply infrastructure and are subject to rate increases. Water supply remains a significant material concern to the organization.
Emissions	Scope III emissions account for the vast majority of airport emissions, which the Port Authority aims to help reduce by working collaboratively with business partners.
Effluents and Waste	Airports, by nature, generate stormwater runoff and landfilled waste from aircraft operations and ancillary services. Through comprehensive stormwater programs and a departmental recycling policy, the Port Authority places a major focus on sources of effluents and waste.
Compliance	Port Authority Airports treat environmental compliance very seriously and work with on-airport stakeholders and permitting agencies to ensure adherence with local regulations.
Transport	Passenger transport to and from the airport accounts for almost half of the airports' greenhouse gas footprint and is a major focus of sustainability efforts.
Environmental Grievance Mechanisms	The Port Authority has a formal noise complaint system as well as publically available contacts for sustainability or environmentally related questions and grievances.
LABOR PRACTICES AND DECENT WORK	
Our workforce is our greatest asset. We value employees that represent the ingenuity and diversity of the region we live in, and seek to support our employees with the highest levels of training and support that can be provided.	
SOCIETY	
Port Authority Airports are integral parts of communities, providing an economic engine for the region as well as services that are used by residents of all of our communities. As a member of the community, airports balance the demands of airlines and travelers with the responsibility of being a good neighbor.	

The Port Authority applies the precautionary principle when evaluating environmental impacts from anticipated capital projects and ongoing operations, and engages this through the NEPA process and compliance with environmental laws and permits covering its facilities.

05

05\ ECONOMIC SUSTAINABILITY

The Economic Sustainability of our airports is paramount to the economic health of the region and the activities that help our airports reduce their impact on the environment and on our neighbors. Our region's economy is heavily dependent upon the ability for our airports to move people and goods efficiently and effectively.

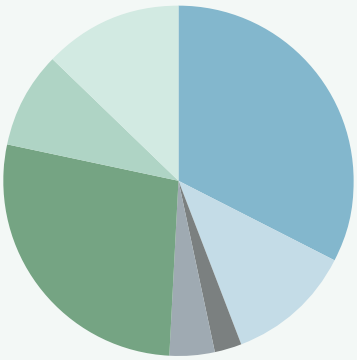
The success of our airports depends upon continual capital investment by the Port Authority and its partners to accommodate forecasted growth in passengers and cargo. The Port Authority depends upon four mechanisms for funding capital projects: bond financing, Passenger Facility Charge (PFC) revenue, Airport Improvement Program (AIP) grants, and Public/Private Partnerships (P3). The PFC is a program that allows for the collection of $4.50 per enplaned passenger at the Port Authority's airports, to be invested in airport projects eligible for PFC investment. The maximum user fee of $4.50 per enplaned passenger was set by congress in 2000, which has eroded the purchasing power of the PFC by approximately half. The Port Authority supports raising the PFC cap to $8.50 and indexing it to inflation so that we can continue to invest in projects that enhance airport efficiency, reduce delays, and increase customer satisfaction. While bond financing and P3 investment can help build certain projects, many of the investments needed at the Port Authority's airports rely on the PFC for success.

The Port Authority spent almost $717 million on 137 airport projects in 2014. These projects range from large scale, marquee initiatives such as the replacement of LGA's central substation and construction of a new east garage to smaller items such as the replacement of electrical conduit damaged by Hurricane Sandy. In the coming years, the Port Authority plans the following large-scale capital projects:

- Rehabilitation of Runway 4R-22L at JFK
- Replacement of LGA's Central Terminal Building, access roadways, and landside infrastructure
- Replacement of EWR's Terminal A
- Planning study for the replacement of AirTrain Newark
- And many others

The Port Authority has committed to maximizing business opportunities for minorities, women, and small entrepreneurs in the New York and New Jersey region. Current Port Authority construction contracts include the following goals for minority- and women- owned and disadvantaged business enterprises: 17% total participation, 12% minority, and 5% women. In addition, the Port Authority has a $1 million program to encourage tenants to employ locally and another $1 million program to encourage them to buy locally.

ALL AIRPORTS
2014 Revenue and Expenditure



Aeronautical Revenue	$1,836,891,401
Non-Aeronautical Revenue	$642,215,052
Grant receipts	$140,249,190
Passenger Facility Charges	$233,171,960
Operating Expenses (Not Including Personnel)	$1,546,100,764
Personnel Compensation and Benefits	$496,079,420
Capital Expenditures	$716,727,994

THE PORT AUTHORITY SPENT ALMOST
$717 MILLION ON 137 AIRPORT PROJECTS IN 2014.

06

06\ MEETING CUSTOMER NEEDS

At the Port Authority's airports, the customer comes first. We take great care to provide our 117 million-plus annual air travelers with the best services possible.

THE PORT AUTHORITY'S CUSTOMER CARE PROGRAM

Great service begins with our red-jacketed Customer Care Representatives (CCRs), who can answer just about any customer question and provide one-on-one personalized service for thousands of travelers every day. With more than 300 CCRs mobilized across the Port Authority's airport system, we're prepared to assist travelers throughout the airports: at our state-of-the-art Welcome Centers, terminal frontages, ticket counters, doorways, AirTrain stations, federal inspection facilities, and anywhere else customers may need help.

Other customer care services and initiatives include:

- Welcome Centers in every terminal, staffed by CCRs and offering extensive information about ground transportation, hotels and tourist points of interest
- Hundreds of power poles and charging stations throughout the airports, many featuring USB ports, to allow customers to recharge portable electronic devices at no cost
- Thousands of new seats
- Better and easier access to airport and airline information, including a mobile phone app, FlySmart; more flight information monitors; free airport alerts (subscribe at http://www.airportinfoalerts.com/); and "next-arriving-train" monitors at AirTrain JFK and AirTrain Newark stations

- Cell-phone parking lots at JFK and Newark where customers can park legally and for free while waiting to pick up arriving passengers, who call their rides waiting in the lot when they are ready
- "Mystery shopper" airport quality assurance teams to monitor and evaluate vendors and other airport employees in order to provide the Port Authority with analysis to make targeted improvements in services
- Anti-hustling campaign to assist arriving passengers and targeting illegal rides and drivers
- Customer Care Avatars, which are computerized, hologram-like CCRs providing automated airport information to millions of travelers in arrivals areas at JFK, Newark Liberty and LaGuardia airports
- Expansion of the agency's award-winning airport signage program
- Expansion of the Port Authority Customer Care Training program to emphasize attitude, appearance, awareness and knowledge for airport employees

In addition, our Airport Standards Manual holds everyone at the airports who interacts with customers to the same high standards. We conduct annual customer satisfaction surveys and quality assurance facility reports to ensure that our customers are receiving consistent service from all airport employees, including baggage handling staff, security screening, check in, taxi dispatch, and more.

FREE WIFI

Every year, the Port Authority conducts a comprehensive survey of its customers at John F. Kennedy International, Newark Liberty International, LaGuardia, Stewart International, and Atlantic City International airports. We question more than 10,000 customers on a host of topics, and we use the results to inform the initiatives we undertake.

One of the top desires of Port Authority airport travelers has been access to complimentary Wi-Fi service. Following approval in June 2014 by the Port Authority's Board of Commissioners of a new arrangement with our service provider, the Port Authority's airports are set to offer access to limited free Wi-Fi at the terminals this fall.

Under a modified agreement with Boingo, the firm will upgrade existing wireless technology at the Port Authority's airports to enhance service, with free Wi-Fi service offered this fall upon completion of those technology improvements. Users may purchase additional access in daily or monthly increments following 30-minute free sessions.

WE CONDUCT ANNUAL CUSTOMER SATISFACTION SURVEYS AND QUALITY ASSURANCE FACILITY REPORTS TO

ENSURE THAT OUR CUSTOMERS ARE RECEIVING CONSISTENT SERVICE FROM ALL AIRPORT EMPLOYEES

07

07\ OUR EMPLOYEES

The Port Authority is dedicated to its more than 6,000 employees, almost 1,000 of whom work for the airports.

Ongoing employee wellness initiatives include:

- The Port Authority seeks a dedicated and diverse workforce that is broadly reflective of the working population of the region that it serves. The Port Authority equal opportunity employment policy goes beyond federal equal opportunity employer protections by including the additional protected categories of sexual orientation and gender identification.
- The Port Authority further supports diversity through sponsored Employee Resource Groups and diversity summits, through which employees can weigh in on agency wide diversity and inclusion issues.
- Employees can attend open enrollment training workshops and various career development classes and workshops sponsored by the Port Authority
- The Port Authority hosts financial planning workshops for employees.
- The Port Authority remembers the victims of the September 11, 2001 attacks on the World Trade Center through the "9/11 Remembrance Through Renewal" volunteer program, in which all employees are invited to participate in volunteer activities throughout the communities in which the Port Authority operates.

THE PORT AUTHORITY SEEKS A

DEDICATED AND DIVERSE WORKFORCE

THAT IS BROADLY REFLECTIVE OF THE WORKING POLULATION

OF THE REGION IT SERVES.

GREEN CLEANING

In 2014, the Port Authority adopted a Green Cleaning Program for its facilities to improve the air quality for Port Authority employees, passengers, and other building occupants. The Green Cleaning Program requirements will be phased in for new contracts held by the Port Authority. By 2018, all new janitorial contracts held by the Port Authority will require contractors to make best efforts to deploy 100% green cleaning products for janitorial purposes. Green cleaning products are defined as products that are certified by third-party certifying entities (Green Seal, EcoLogo, or the United States Environmental Protection Agency's Design for the Environment) or are self-certified as meeting, or exceeding, the relevant third-party certifications.

To support this program, the Office of Environmental and Energy Programs (OEEP) has denoted "green" cleaning products on the Port Authority's Approved Products List.

MINIMUM WAGE POLICY

Recognizing that Port Authority employees only constitute about 2% of all employees working at Port Authority Airports, the Port Authority is mindful of the well-being of those employed by tenants and contractors. In 2014, the Port Authority announced its minimum wage policy, which applies to all employees working at LGA, JFK, and EWR. The rules were put into place on July 31, 2014, and take effect on February 9, 2015. All employees covered under the policy will have their minimum pay increased to $10.10 per hour. This represents the desire of the Port Authority to ensure that everyone employed at its Aviation facilities receives a decent, living wage.

REWARD AND RECOGNITION PROGRAM

Every quarter, the Port Authority recognizes airport employees who go above and beyond their normal duties to assist our customers (Port Authority employees are ineligible). We also hold an annual awards ceremony.

On October 29, 2013, at JFK's Terminal 4, an arriving 71-year-old male passenger collapsed near Booth 40 in the Federal Inspection Services area and appeared to be in grave condition. The CBP officers responded immediately. Officer Ward evaluated the passenger and was unable to detect a pulse, so he retrieved an automated external defibrillator (AED) while Officer Sclafani initiated CPR. Officers Charlery, De Los Santos and Ward applied the AED and shocked the passenger while CPR continued. The passenger was revived during CPR and was transported to Jamaica Hospital where he was evaluated and treated. Doctors at the hospital said the officers' actions had undoubtedly saved the passenger's life.

08

08\ WILDLIFE HAZARD MANAGEMENT

The Federal Aviation Administration (FAA) requires all Part 139 certificated airports to monitor and address wildlife hazards that threaten aircraft and passenger safety.

The Port Authority recognizes wildlife hazards as a paramount safety issue and has taken many steps to monitor, mitigate, and eliminate these hazards.

The Port Authority airports have had wildlife management programs for over 30 years, including at John F. Kennedy International Airport (JFK), Newark Liberty International Airport (EWR), and LaGuardia Airport (LGA). In 2009, the Port Authority created a centralized division to direct and oversee the wildlife management programs at all of the Port Authority airports. The Port Authority hired a second staff Wildlife Biologist to this division to further this goal. The centralization and on-staff technical wildlife support allows us to advance the wildlife management programs at each of our airports as we learn more about the hazards we face and new technologies to mitigate these problems.

We have developed integrated wildlife hazard management programs at each of our airports that include a variety of nonlethal and lethal control techniques, training programs, and community outreach programs. Some of these efforts are summarized below:

Habitat and Construction Management – The Port Authority has strict landscaping and construction guidelines that require projects to be reviewed and approved by a Wildlife Biologist to ensure that these projects will not create wildlife attractants at the airports. This includes a list of plants to be used for all landscaping projects that will not attract wildlife as well as special varieties of grass that are not palatable to wildlife and must be used in all reseeding projects.

Garbage Disposal – The Port Authority Rules & Regulations require all refuse to be disposed of at designated locations in containers with secured lids that prevent wildlife access.

Insect Management – Each airport has insect control protocols to reduce insect populations that may attract birds.

Wildlife Training – Airport Operations staff responsible for wildlife management activities are required to complete an annual 8-hour training course in wildlife hazard management. In 2013, over 170 staff members received this training.

Wildlife Monitoring – In order to understand the hazards that threaten aircraft safety, we have developed monitoring programs that survey wildlife populations on and around our airports. Wildlife Biologists monitor these areas throughout the

year since wildlife populations are dynamic and may vary seasonally. Land use changes around the airport may affect wildlife populations and we work closely with neighboring landowners to track this information.

Wildlife Strike Reporting – We report all strikes to the national wildlife strike database and have trained Airport Operations staff available 24 hours per day to collect strike information from airlines and collect any blood or feather samples ("snarge"). Working with the Smithsonian Institution's Feather Lab, we attempt to identify all wildlife strikes to species either by microscopic feather or DNA analysis. We maintain wildlife strike databases for each of the airports and constantly review these data to focus our efforts, refine our management programs, and justify the wildlife control techniques authorized on airport permits by Federal and State wildlife regulatory agencies.

Wildlife Patrols – Port Authority Wildlife Supervisors continually patrol the airports during daylight hours to address wildlife hazards. Additional trained Airport Operations staff are available 24-hours per day to respond to wildlife hazards and wildlife strikes. JFK has several additional staff dedicated to wildlife control and supplements these staff with wildlife contractors during periods of peak bird activity.

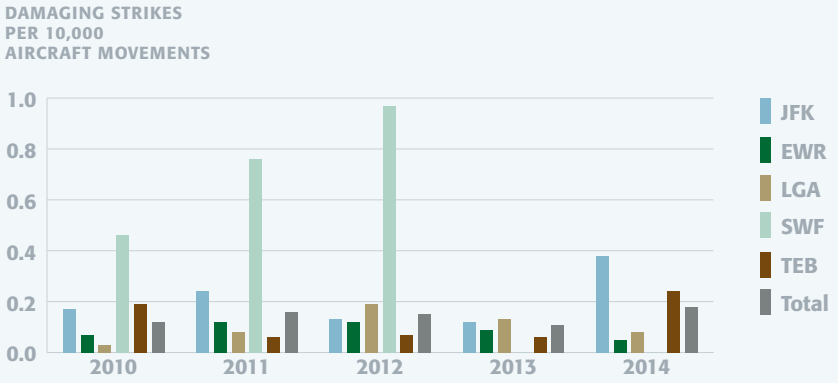
Wildlife Population Control – When necessary, trained Wildlife Supervisors are authorized to lethally remove wildlife from the airports. The Port Authority maintains a zero-tolerance policy on the airport for hazardous wildlife species such as Canada geese and gulls. Because wildlife do not recognize human property boundaries, we also work closely with neighboring landowners to develop strategies to reduce populations of hazardous wildlife.

Community Outreach – The Port Authority takes a local and regional approach to managing wildlife hazards to aircraft and works with neighboring landowners to mitigate wildlife hazards on off-airport properties that may affect air safety. This includes airport task forces that meet at least annually with wildlife and aviation regulatory agencies and other neighboring landowners.

In addition to these efforts, specific cooperative efforts with multiple agencies have been undertaken to manage Canada goose populations within the New York City metro area. This is following a two-year multi-agency research project on local Canada goose movements. We have also undertaken several research projects on grass height management, insect populations, laughing gull nesting, gull diets, the effectiveness of propane cannons, the use of lethal control as a hazing tool for gulls, and avian radar.

FACTS AND FIGURES

DAMAGING
Wildlife Strike Rate



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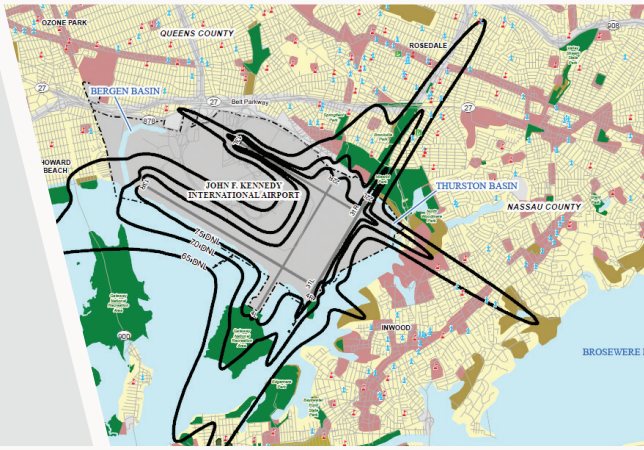


09\ NOISE IMPACTS

Beginning in 1959, the Port Authority implemented a series of aircraft noise abatement programs and numerous noise mitigation programs.

Abatement programs are defined as those that address a reduction in the noise source. Mitigation programs are designed to reduce the impact of existing noise on people living near the airports.

HISTORY

The Port Authority's first program to mitigate aircraft engine noise took place as the jet age was still dawning, when the agency established a departure noise limit known as the 112 Perceived Noise Decibel (PNdB) rule. The basis for the rule was a noise evaluation study that the Port Authority had initiated, which pioneered scientific research on how human beings perceive aircraft noise. In 1986, the Port Authority reached an agreement with airlines operating at JFK that levied a $250 penalty against any airline that exceeded the noise departure limit of 112 PNdB.

To monitor compliance with the departure noise limit, the Port Authority installed the world's first aircraft noise monitoring system. It consisted of 11 permanent noise monitoring units located in the nearest residential community extending from each runway's centerline. A central location at each airport received noise-monitoring data and an airport operations agent manually matched a specific noise event with a flight.

Absent national or international regulations on jet noise emissions, the Port Authority's departure noise limit led to the development of quieter jet engine technology, noise abatement procedures including power cutbacks, and noise abatement flight tracks. In 1985, the Port Authority prohibited the use of older Stage 1 aircraft at the three major commercial airports, and in 1989, banned the scheduling of additional flights using marginally improved Stage 2 aircraft during nighttime hours.

In 1992, the Aircraft Noise and Operations Management System (ANOMS) system for the three major airports was upgraded with flight track capability. The two primary data sources for ANOMS are aircraft radar data and noise monitoring data from the Port Authority's noise monitors.

Port Authority Webtrak Flight Tracking System

The radar data contains each aircraft's position in space and its accompanying identification information, such as flight number, aircraft type, origin, and destination. Since 1992, ANOMS has been used to prepare monthly flight track data for airlines, community groups, FAA personnel, and aircraft associations to assist in identifying aircraft by defining their operational characteristics in order to monitor aircraft noise at our airports.

The Port Authority, prior to the FAA's order that all aircraft be Stage 3, had restricted additional Stage 2 aircraft during night time hours, and had sought to advance the FAA timetable for Stage 3 aircraft at its airports. However, due to the passage of the Federal Airport Noise and Capacity Act (ANCA) of 1990, restricting Stage 2 aircraft earlier than the FAA-established deadline became substantially more difficult. Nevertheless, the Port Authority encouraged airlines to voluntarily eliminate their Stage 2 aircraft earlier than the required deadline. The Port Authority promotes a voluntary nighttime (midnight-6 a.m.) aircraft departure restriction at LGA and TEB. As of May 1, 2002, the Port Authority has been successful in prohibiting Stage 1 aircraft from operating at TEB, and as of March 2002 has received the support of the FAA in banning aircraft in excess of 100,000 pounds from operating at TEB.

APPROACH

The Port Authority of New York and New Jersey believes in a multifaceted approach for reducing noise at our airports. The most effective way to abate aircraft noise in the environs of its airports is to reduce noise at its source: the aircraft engine. However, given the long lead times necessary for new aircraft engine design and implementation we need to concentrate on other areas of mitigation if we are to reduce aircraft noise at our airports.

As part of the continuing effort to address noise levels created by aircraft operations, the Port Authority's initiatives include:

- Creating a new noise office with dedicated staff

- Expanding our noise monitoring program
- Introducing a new flight and noise monitoring web portal (WebTrak)
- Enhancing the noise complaint management system
- Initiating Part 150 Noise Compatibility studies for LaGuardia, John F. Kennedy International, Newark Liberty International, and Teterboro airports
- Establishment of Airport Community Roundtables

ACCOMPLISHMENTS IN 2014

In 2014, the Port Authority's Noise Office kicked off the following initiatives:

- Created a new noise office with dedicated staff
- Introduced a new flight and noise monitoring web portal (WebTrak)
- Enhanced the noise complaint management system
- Awarded NJ Part 150 Noise Compatibility studies for LaGuardia, John F. Kennedy International, Newark Liberty International, and Teterboro airports

PART 150 STUDIES

14 Code of Federal Regulations (CFR) Part 150 provides a vehicle for airport operators to undertake studies that provide the public with information about existing and future noncompatible land uses around airports and to create measures that reduce, and prevent the introduction of new, noncompatible land uses. A noncompatible land use is the use of land that is impacted by aircraft noise in excess of the thresholds established in Part 150. Part 150 studies involve the creation of Noise Exposure Maps and Noise Compatibility Programs. A Noise Exposure Map (NEM) is designed to clearly identify an airport's present and future noise patterns and the land uses which are not compatible with those noise patterns. A Noise Compatibility Program (NCP) shows what measures the airport operator has taken or proposes to take to reduce, and/or prevent the introduction of, noncompatible land uses within the area covered by the airport's NEM.

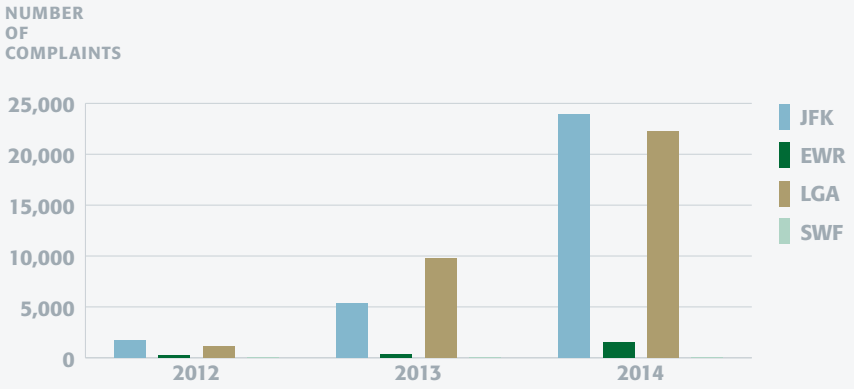
In response to growing community concerns about aircraft noise, Governor Cuomo directed the Port Authority to undertake 14 CFR Part 150 Studies for JFK, LGA, TEB, and EWR. Governor Cuomo directed the Port Authority to open a full and thorough dialogue with the impacted communities while also pursuing a noise study to better address the issue. Port Authority Aviation Director Thomas Bosco said, "The Port Authority understands it must strive to be a good neighbor in the communities where its airports are located." He added, "We will seek noise mitigation with the FAA where feasible."

The Port Authority and its consultants will prepare and produce Noise Exposure Maps (NEM) and a Noise Compatibility Program (NCP) for JFK, LGA, TEB, and EWR in accordance with 14 CFR Part 150.. The FAA has prepared checklists for the NEM and NCP which must be followed to ensure compliance with 14 CFR Part 150. As part of the 14 CFR Part 150 Study, the Port Authority and its consultant will quantify existing (2016) and future (2021) aircraft noise exposure levels in the vicinity of the airports. The Port Authority will also develop supporting

documentation explaining the process used to calculate existing and future aircraft noise exposure levels. The NEM Reports will provide the Port Authority and the FAA with a set of NEMs that identify areas exposed to aircraft noise of DNL 65 dB and higher. The NEMs will be submitted to FAA for review and acceptance.

After the NEMs are complete, the Port Authority and its consultants will examine potential measures for minimizing noise impacts. The Port Authority will consider a range of mitigation measures including operational, remedial, preventative, and administrative measures. The measures providing the greatest potential to minimize the noise impacts from aircraft operations will be forwarded to the FAA for review and approval. Certain measures may require FAA funding to be implemented (e.g., sound insulation). Only those measures approved by the FAA will be eligible for federal funding. All potential described measures and their feasibility for implementation will be contained in the Noise Compatibility Program (NCP).

Noise Complaints
BY AIRPORT



THE PORT AUTHORITY INSTALLED
THE WORLD'S FIRST AIRCRAFT NOISE MONITORING SYSTEM.

10

10\ ENERGY AND GHG EMISSIONS

The Port Authority has a major role in addressing regional greenhouse gas emissions and improving air quality for the residents of New York and New Jersey.

To address air pollutant emissions of nitrogen oxides, sulfur dioxide, carbon monoxide and particulate matter, the Port Authority has conducted periodic GHG and criteria pollutant inventories for its airports since 2006. The Port Authority and its tenants have implemented many initiatives to reduce emissions of criteria air pollutants, GHGs and ozone-depleting substances. Energy and fuel management strategies, including reducing energy demand, increasing the use of renewable energy and alternative fuels and transitioning to more efficient equipment and aircraft, have been successful in reducing emissions associated with energy and fuel use.

Several sources produce on-airport GHG emissions, but the largest sources are aircraft, ground access vehicles, buildings and other built infrastructure, and ground support equipment. A breakdown of on-airport GHG emissions is below. We are taking several steps to reduce on-airport GHG emissions, detailed below.

AIRCRAFT EMISSIONS REDUCTIONS

GROUND MANAGEMENT AT JFK

Our ground management program at JFK was implemented in 2010. Using ASDE-X technology that senses the location of aircraft on the airfield, the program functions as a partnership between the Port Authority and airlines at JFK airport.

Ground management allows a central dispatcher to assign aircraft into departure "buckets" as runway space becomes available. This allows aircraft to remain at the gate or at holding pads with their engines off until there is space available on the runway for them to depart.

The program has been very popular with the airlines at JFK. The Port Authority estimates that through the program, airlines save 4.2 million gallons of fuel per year, and 14,800 hours of wasted passenger and crew time.

ADVOCATING FOR NEXTGEN

The Port Authority was a founding member of NexGen Now!, a group of businesses advocating for the FAA to roll out NextGen, a suite of efficiency improvements to the National Airspace System (NAS). More than half of all delays in the NAS originate at the Port Authority's airports. Among many other benefits, NextGen would help reduce delays in the New York/New Jersey region by allowing aircraft to take more direct routings into and out of our airports, along with departure and approach profiles that save fuel and improve safety during poor weather.

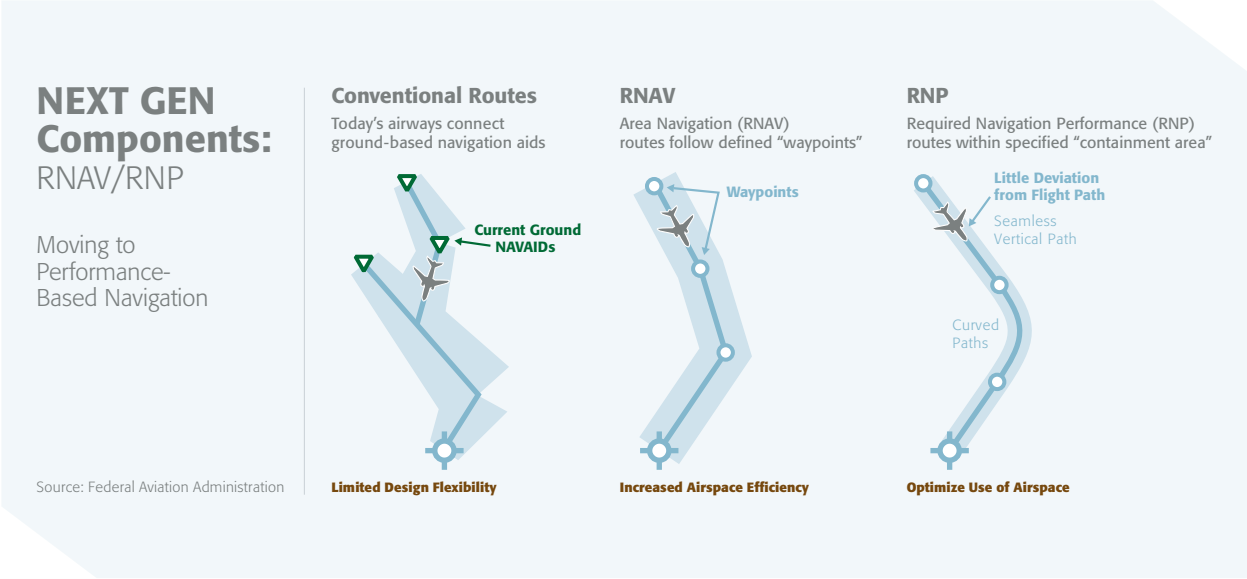
The Port Authority has worked collaboratively with the FAA to help expedite the implementation of NextGen at its airports. For example, the Port Authority helped FAA implement the nation's first Ground Based Augmentation System (GBAS) at EWR, allowing properly equipped aircraft to complete approaches to the airport in near-zero visibility. In addition, the Port Authority sits on RTCA's NextGen Advisory Committee, which convenes industry leaders to help FAA implement NextGen efficiently.

NextGen provides a major opportunity for major per-mile carbon emissions reductions in the New York/New Jersey region. Currently, departures and approaches into the Port Authority's airports hold aircraft at lower altitudes and speeds for much longer than necessary. Flying at lower altitudes increases drag and increases fuel burn. The Port Authority believes that increasing the efficiency of the NAS will lead to a far more carbon efficient aviation industry.

Measure Auxiliary Power Unit Use and Identify Operational Apu Use Reductions. Build Infrastructure to Enable Full Use of Ground Power and Pre-Conditioned Air.

While emissions from aircraft engines used during idle, taxi, and takeoff/landing account for the majority of aircraft emissions, Auxiliary Power Unit (APU) fuel use provides critical electric power and heating/air conditioning capability while an aircraft is parked at a gate. APUs run on jet fuel and consume, on average, about 70 gallons of fuel per hour for a mid-sized jet.

Providing electric power hookups (ground power) and air conditioning units (pre-conditioned air) at the gate can eliminate the fuel use and emissions of APUs. The Port Authority has installed gate power and pre-conditioned air at the majority of its gates, and has plans to complete fit outs



of all Port Authority-operated gates by 2022. This will be accomplished by adding necessary electric power to EWR's Terminal B through a new substation, and through the replacement of the LaGuardia Central Terminal Building.

In 2014, the Port Authority conducted a study of APU use to determine how effectively airlines were using gate power and PCA resources at JFK. These results are being used during conversations with airlines to determine gaps in infrastructure or training. The Port Authority will continue to make resources available to airlines to reduce unnecessary fuel use at the gate.

Encourage and Support Airline Use of Advanced Aviation Biofuels

Existing jet aircraft technology depends entirely upon liquid fuels, making the decarbonization of the aircraft fleet more difficult than ground transport, which can be partially electrified. Advanced aviation biofuels represent the best available technology for carbon emissions reductions from aircraft, with the potential for 70-80% reductions in lifecycle GHG emissions in relation to conventional jet fuel.

On March 8, 2013 the JFK Green Lane Flight program was launched entailing a series of biofuel flights between JFK and Amsterdam for the duration of 26 weeks. With this program, undertaken by KLM Royal Dutch Airlines and SkyNRG in partnership with the Port Authority of New York and New Jersey, JFK International Air Terminal LLC/ Schiphol Group, Allied Aviation and Delta Air Lines, weekly flights leaving JFK International Airport were fuelled with sustainable jet fuel. The sustainable jet fuel that was used for the weekly flights with a 777-200 aircraft was 100% US based fuel, and made from Used Cooking Oil and Camelina oil. The 26 flights within the JFK Green Lane Program were fuelled with a total of 430 Metric Tons (145,000 gallons) of sustainable jet fuel. In total the program resulted in a reduction of over 242 metric tons of CO2, including the emissions from the manufacture and transport of the fuel.

The Port Authority realized that airports have a major role to play in the roll out of sustainable aviation biofuels. From providing fueling trucks and infrastructure to developing stakeholder buy in and a standard operating procedure for

Aircraft at JFK using gate power and pre-conditioned air

fueling, the airport operator is the only entity with a broad enough stakeholder reach to ensure that aviation biofuel projects can be successful. The Port Authority has reached out to its major airline stakeholders to initiate conversations about future biofuel projects, and the potential integration of biofuel supply into airport fueling infrastructure.

KLM 777 filling up with sustainable aviation biofuel for a flight to Amsterdam

GROUND SUPPORT EQUIPMENT (GSE)

Electric GSE chargers included in specifications for new terminal design

In 2013, the Port Authority conducted an inventory of vehicles supporting aircraft operations at its airports, including baggage tugs, belt loaders, pushback tugs, catering and lavatory vehicles, and many others. There are currently 5,391 ground support vehicles that collectively emit almost 90,000 tons of CO2e emissions on an annual basis. The Port Authority conducted analysis demonstrating that converting a diesel or gasoline ground support vehicle to electricity results in a payback period of less than five years, due to fuel and maintenance savings.

The Port Authority is including electric GSE chargers as a standard specification in the design of the Central Terminal Building at LGA. Airlines operating at the Central Terminal at LGA will be required to operate electric baggage tugs, belt loaders, and pushback tugs at each gate to minimize on-airport emissions.

THE PORT AUTHORITY HAS REACHED OUT TO ITS MAJOR AIRLINE STAKEHOLDERS TO INITIATE **CONVERSATIONS ABOUT FUTURE BIOFUEL PROJECTS AND** THE POTENTIAL INTEGRATION OF BIOFUEL SUPPLY INTO **AIRPORT FUELING INFRASTRUCTURE.**

BUILDINGS AND BUILT ENVIRONMENT

Deploy LED airfield lighting solutions during taxiway and runway rehabilitation

Energy efficiency programs

The Port Authority has deployed two tools to conduct major GHG reduction projects at its facilities: contracts with Energy Services Companies (ESCOs) and an Energy Services Agreement with the New York Power Authority (NYPA). To date, the Port Authority has commissioned $18,895,000 of energy efficiency work that produces $1.5m of energy savings per year and reduces GHG emissions by 503 tons per year. Projects have been completed at JFK, LGA, TEB, and EWR.

Approximately $37m in "phase two" projects are underway at JFK, EWR, and SWF that will deliver an additional $3.1 million per year in energy savings to the Port Authority. Projects have included upgrades to heating, ventilation, and air conditioning systems and controls, lighting retrofits, installation of renewable energy, and building envelope improvements.

LEED Silver targets for new terminal projects

The Port Authority is planning major replacements of EWR's Terminal A and LGA's Central Terminal Building within the next several years. The projects are required to comply with the Port Authority's Sustainable Building Guidelines, but are pushing the envelope even further to target the US Green Building Council's Leadership in Energy and Environmental Design (LEED) Silver designation.

Rendering of New Central Terminal Building at LGA

TO DATE, THE PORT AUTHORITY HAS COMMISSIONED

$18,895,000 OF ENERGY EFFICIENCY WORK

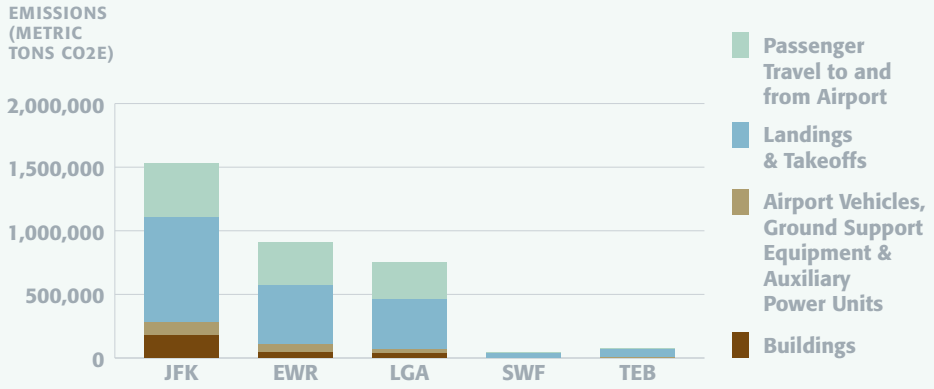
THAT PRODUCES

$1.5M OF ENERGY SAVINGS PER YEAR AND REDUCES GHG EMISSIONS

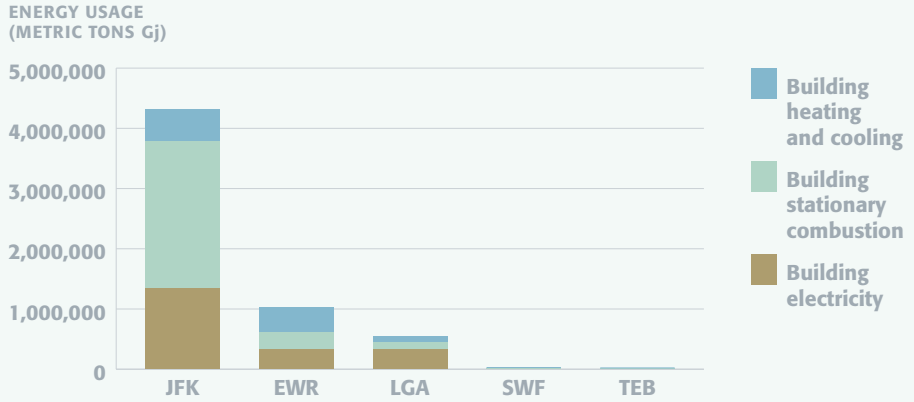
BY 503 TONS PER YEAR.

FACTS AND FIGURES

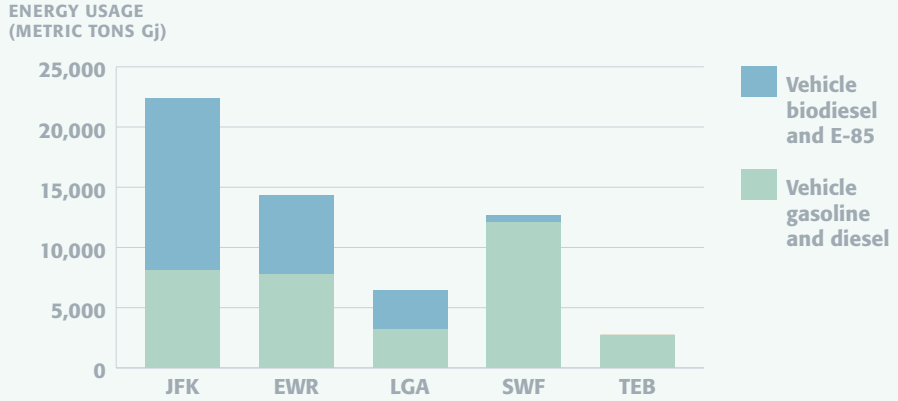
2013 Total Emissions BY AIRPORT AND SOURCE



2014 Building Energy Usage BY AIRPORT



2014 Vehicle Energy Usage BY AIRPORT



11

11\ WATER CONSERVATION AND WATER QUALITY

As a coastal agency, the Port Authority values its role in protecting water resources in the New York and New Jersey region.

The Port Authority is continually evaluating methods to improve airport water quality and reduce water consumption at all of its facilities in the region. All of the Port Authority's airports hold State Pollution Discharge Elimination System (SPDES) permits with the New York Department of Environmental Conservation (NYSDEC) or New Jersey Pollutant Discharge Elimination System (NJPDES) permit with the New Jersey Department of Environmental Protection (NJDEP). The permits require implementation of Stormwater Best Management Practices (BMPs), including monitoring and testing of stormwater and BMP training for Port Authority and tenant employees. The Port Authority uses several tools to manage stormwater, including:

- Water quality monitoring outflow results, including pH, TSS, TKN, TPHC, CBOD, and COD.
- Maps of outfalls with discharges to surface waters on airport ground, including information on the locations of cross ditch booms, outfall booms, and proposed outfall booms.
- Basic storm drainage maps.

Our airport operators and tenants conduct a variety of activities supporting airport operations. Some of the activities that occur have the potential to release pollutants to the stormwater drainage system, including:

- Deicing/anti-icing operations
- Vehicle, equipment and aircraft fueling
- Vehicle, equipment and aircraft maintenance
- Vehicle, equipment and aircraft washing
- Aircraft lavatory service operations
- Material and waste handling and storage

Our airports and their tenants have identified strategies that mitigate the detrimental effects of these activities through the following actions:

- Using sodium acetate as the solid pavement deicer and no longer using liquid deicers containing ethylene glycol on airfield pavement.
- Following best management practices minimize discharge of deicing fluids to surface waters.
- Purchasing multi-function vehicles for plowing, brooming, and snow blowing to reduce the amount of deicers needed as part of our airports' Enhanced Snow Removal Program.

WATER CONSERVATION

The Port Authority's airports consume water within passenger terminals, for vehicle maintenance and washing, landscaping, heating and cooling buildings, and many other uses. The Port Authority has started to benchmark water consumption within its passenger terminals to determine opportunities for water efficiency "quick wins". For example, the Port Authority determined an opportunity to reduce water consumption by almost three million gallons per year in EWR's Terminal B by replacing and upgrading restroom water fixtures. The Port Authority's Office of Environmental and Energy Programs is now incorporating water retrofits into its energy efficiency programming, which will make it possible to finance these projects through similar mechanisms as financing energy efficiency projects.

A04-QUALITY OF STORMWATER
BY REGULATORY STANDARDS

	JFK	LGA	SWF	EWR	TEB	TOTAL
Sample Locations (number)	11	3	15	3	2	34
Sample Frequency	Monthly	Monthly	Monthly	Monthly	Monthly	-
Incidences of non-compliance	1	2	0	0	1	4

12

12\ RESILIENCE

The Port Authority started actively preparing for the effects of a changing climate in 2006.

Four out of our five airports lie within FEMA-designated 100 year and 500 year coastal floodplains. Sea level rise and stronger storms associated with the effects of climate change are already impacting our facilities. Tropical Storm Irene and Superstorm Sandy underscored the importance of preparing for the effects of sea level rise, so that our airports can continue to fulfill their crucial economic role in the region for many years to come.

Looking towards LaGuardia's Terminal C after Superstorm Sandy, October 30, 2012

In 2014, the Port Authority continued many efforts intended to assess climate change risks and develop mitigation plans.

Sea Level Rise Hazard Assessment

The Aviation Department completed a hazard assessment for JFK, EWR, LGA, and TEB that produced the following planning tools:

- Existing flood hazard maps with operationally critical assets assessed for relative inundation risk
- Future flood hazard maps depicting potential flood scenarios in 2020, 2035, and 2055, along with relative risk to critical assets
- Drainage system assessment, evaluating deficiencies in current drainage systems resulting from sea level rise and increases in precipitation intensity

These tools will be used when rehabilitating existing facilities or planning new facilities. The use of multiple time horizons will allow teams to build in appropriate levels of flood protection depending on the useful life of an asset.

The results of the study will be used for planning purposes and will ensure that facility planning and critical infrastructure deployment is completed with an eye to potential future flood levels, to mitigate the department's long-term flood risk profile.

Resiliency Design Guidelines

In 2014, the Port Authority's board adopted new Resiliency Design Guidelines, which will apply to all capital projects constructed within a FEMA-designated 1% annual chance floodplain. The guidelines establish standards for elevating or protecting structures against coastal or riverine flooding. Additional freeboard is built in for expected sea level rise, depending on the expected lifespan of the asset. To ensure that capital is allocated appropriately, flood protection measures are subject to cost/benefit analyses under the guidelines. The cost/benefit analysis ensures that costly flood protection measures with little expected benefit are not incorporated unnecessarily.

Planning for the future

The Aviation Department has initiated a multi-stakeholder review of the results of the Sea Level Rise Hazard Assessments. The expected result of this review will be a planning-level study of three or more alternatives which would provide comprehensive protection for critical, flood-prone assets at our airports. The Aviation Department is determining screening criteria for prospective flood protection projects and is coordinating with the several other Port Authority departments on the development of alternatives.

FOUR OUT OF OUR FIVE AIRPORTS
LIE WITHIN FEMA-DESIGNATED
100 YEAR AND 500 YEAR COASTAL FLOODPLAINS

13

13\ GROUND TRANSPORT

In 2014, the Port Authority's airports served more passengers and aircraft than at any point in the past.

Passengers accessing the airport consistently account for almost 50% of the Aviation Department's carbon footprint. Therefore, ground transportation choices factor highly in the Port Authority's consideration of its environmental footprint. The Port Authority is deeply invested in ensuring that passengers and cargo can access our airports without causing undue stress on traffic or air pollution in surrounding communities. The Aviation Department has several initiatives to ensure that passengers and airport employees can access the airport in an environmentally responsible and socially inclusive manner.

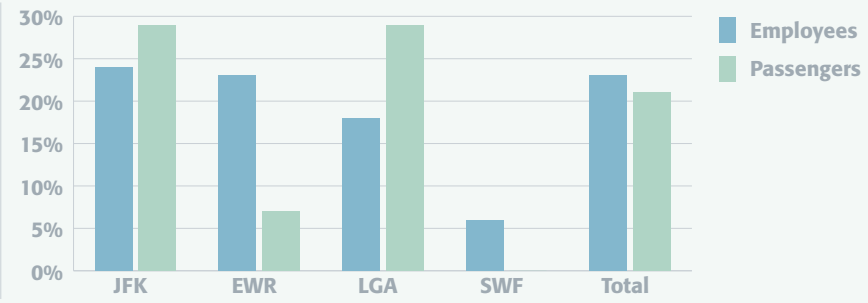
- Electric Vehicle (EV) charging stations at LGA and JFK helped 554 customers charge their electric vehicles while parked at the airport, allowing customers to reach the airport in zero-emissions vehicles.
- Five new electric vehicle charging stations were activated in EWR's Parking Lot 4.

EWR's John Corrigan and Jim Stamper checking out the new EV chargers at Parking Lot 4

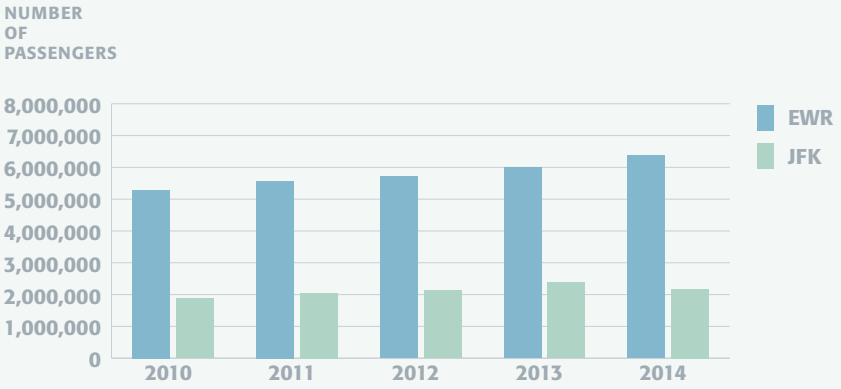
- The opening of a cell-phone waiting lot at EWR improved customer safety and reduced fuel use from vehicle idling and circulation
- The Aviation Department created a policy proposal for agency-wide EV Readiness Initiatives, which proposed a scaled roll out of electric vehicle infrastructure around the airports. If adopted by the Port Authority's Office of Environmental and Energy Programs, the policy would open the door for the department to expand its EV charging offerings to more customers and airport employees.
- AirTrain JFK and AirTrain Newark posted their highest ridership numbers ever, with 6.37 million and 2.18 million riders, respectively.
- At JFK and EWR, almost a quarter of all passengers originating at each airport reached the airport using public transportation. At LGA, 18% of all passengers used public transportation.

FACTS AND FIGURES

Percentage of Passengers and Employees USING MASS TRANSIT



Passengers Accessing Airports BY AIRTRAIN



14

14\ SOLID WASTE MANAGEMENT

The Port Authority's Aviation Department made a formal commitment to the improvement of solid waste management practices by adopting a formal recycling policy in 2009.

It states, "All solid waste generated at the Port Authority's airports that can be economically and technically reused or recycled must be recovered in an environmentally acceptable manner."

The recycling policy is referenced in Airport Rules and Regulations and all tenants are required to follow the policy.

The Aviation Department faces several challenges to achieving a consistent and high performing recycling program across its airports because the Port Authority does not control the majority of customer-facing areas and therefore does not have the ability to influence solid waste management decisions across most of its airports. Despite this challenge, the Port Authority has taken the following steps recently to increase the diversion of recoverable materials and provide a consistent experience for customers:

Left, LaGuardia's superstar composters from Marketplace Development, OTG Management, and LaGuardia Terminal B Restaurants

"Today's choices are important for tomorrow's future." says Paul McGinn, president of MarketPlace Development. "Recycling, composting and conservation efforts are an important part of our corporate culture and the retail programs we manage. In 2014, 317 tons of waste was recycled at LGA and repurposed to save water, oil and trees. Used fryer oil was converted into 3,600 gallons of biodiesel fuel, and the composting program we've put in place, in concert with the Port Authority of NY& NJ, has transformed 31 tons of food waste into nutrient rich soil."

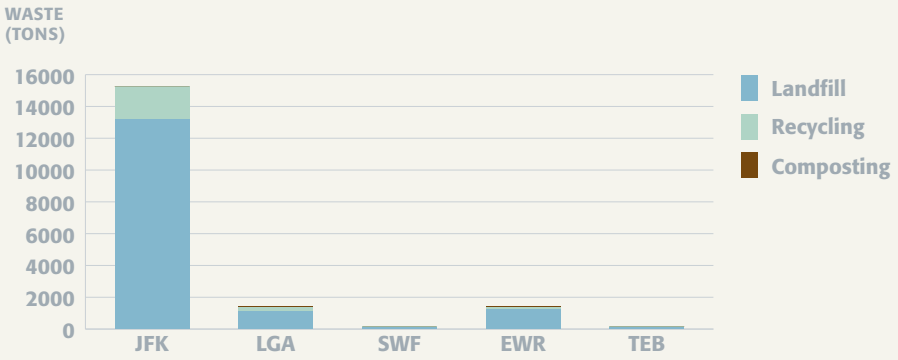
- In 2012, conducted waste audits at SWF and TEB
- In 2013, conducted a comprehensive waste audit at EWR
- Launched composting programs at LGA's Terminal B and EWR's Terminal B in 2013, in partnership with Marketplace Development at LGA and Westfield at EWR*
- Launched standardized recycling signage in partnership with Recycle Across America in 2014
- Send annual memo to tenants detailing their requirements under the recycling policy

** Note: EWR's composting program is on-hold as a result of the closure of the Wilmington Organics Recycling Center in Delaware. The Port Authority is working to identify alternative sites that will accept EWR's compost.*

The Port Authority's new standardized recycling signage, in partnership with Recycle Across America

FACTS AND FIGURES

2014 Waste BY AIRPORT



15\ APPENDIX A: SUSTAINABILITY METRICS

GRI AIRPORT OPERATORS SECTOR SUPPLEMENT: STANDARD DISCLOSURES-PERFORMANCE INDICATORS

REPORT COVERS CALENDAR YEAR 2014

	JFK	LGA	SWF	EWR	TEB	Total
G4-9: SCALE OF THE REPORTING ORGANIZATION						
Number of employees	823	509	9	671	3	2,015
Number of operations	434,888	360,834	37,993	414,298	161,842	1,409,855
Net revenues	$115,765,334	$(103,430,032)	$(58,074,736)	$151,415,664	$(12,056,775)	$93,619,455
Size of airport (acres)	4,930	680	2,400	2,207	827	11,044
Number and length of longest runway (ft)	4 | 14,572	2 | 7,000	2 | 11,817	3 | 11,000	2 | 7,000	13 | 14,572
Number of gates	125	76	7	114	0	322
Minimum connection time between flights	Depends on Terminal/Carrier				N/A	N/A
Terminal square footage	5,491,000	1,124,920	107,798	3,697,214	N/A	10,420,932
Number of airlines served	77	11	4	26	N/A	85
Number of destinations served	161	78	5	154	N/A	215
Port Authority controlled terminal square footage	0	835,000	107,798	720,143	N/A	1,662,941
Port Authority administrative and maintenance area treated square footage	4,000,000	1,050,000	757,000	51,685	26,500	5,885,185
G4-10-11: EMPLOYMENT						
Number of permanent airport employees	793	491	9	658	3	1,954
Number of temporary airport employees	30	18		13		61
Total airport employees	823	509	9	671	3	2,015

	JFK	LGA	SWF	EWR	TEB	Total
G4-EC1: DIRECT ECONOMIC VALUE GENERATED AND DISTRIBUTED						
Operating Revenues	$1,168,812,336	$367,123,106	$8,233,919	$894,016,810	$40,920,282	$2,479,106,453
Operating Expenses incl. employee compensation	$981,736,438	$345,095,998	$21,477,633	$648,802,854	$45,067,231	$2,042,180,154
Capital Investments	$241,925,862	$229,268,356	$47,578,900	$183,519,961	$14,434,915	$716,727,994
Grants (FAA AIP and non-FAA)	$62,276,413	$48,889,615	$2,065,970	$20,492,103	$6,525,089	$140,249,190
Passenger Facility Charge Revenue	$108,338,885	$54,921,601	$681,908	$69,229,566	$0	$233,171,960
Employee Compensation (including benefits)	$199,041,706	$125,605,286	$2,102,964	$159,170,045	$10,159,419	$496,079,420
Donations/Community Investment	$943,395	$541,668	$76,300	$732,588	$76,300	$2,370,250
Payments to capital providers/ governments (gross taxes)	$96,392,170	$32,216,462	$405,696	$78,336,913	$0	$207,351,241
Total Revenue	$1,339,427,634	$470,934,322	$10,981,797	$983,738,479	$47,445,371	$2,852,527,603
Total Expenditure	$1,223,662,300	$574,364,354	$69,056,533	$832,322,815	$59,502,146	$2,758,908,148
A01-PASSENGER TRAFFIC						
DOMESTIC FLIGHTS						
Origin and Destination	18,960,623	23,001,247	305,366	16,930,621	-	57,103,719
Transfer or transit	6,045,657	2,138,448	3,991	6,832,058	-	17,114,292
Total	25,006,280	25,139,695	309,357	23,762,679	-	74,218,011
INTERNATIONAL FLIGHTS						
Origin and Destination	19,180,448	1,629,585	-	6,335,181	-	27,145,213
Transfer or transit	9,067,634	189,308	-	5,502,248	-	14,759,191
Total	28,248,082	1,818,893	-	11,837,429	-	41,904,404
TOTAL PASSENGERS	53,254,362	26,958,588	309,357	35,600,108	-	116,122,415
A02-AIRCRAFT MOVEMENTS						
COMMERCIAL PASSENGER AIRCRAFT MOVEMENTS						
Domestic	244,199	320,262	7,286	292,619		864,366
International	168,348	31,429	4	91,857		291,638
Total	412,547	351,691	7,290	384,476	-	1,156,004
Cargo Aircraft Movements	12,379	-	1,112	18,812	-	32,303
Government and General Aviation Aircraft Movements	9,962	9,143	29,591	11,010	161,842	221,548
% of Arrivals between 10PM and 7AM	20.02%	9.26%	9.66%	17.27%	No data	15.68%
% of Departures between 10PM and 7AM	17.16%	8.27%	5.36%	14.17%	No data	13.28%
Total Movements	434,888	360,834	37,993	414,298	161,842	1,409,855

	JFK	LGA	SWF	EWR	TEB	Total
A03-CARGO TONNAGE						
ARRIVING CARGO TONNAGE						
Freighter Aircraft	329,028	-	10,712	207,942	-	547,682
Passenger Aircraft	435,144	4,337	10	138,523	-	578,014
DEPARTING CARGO TONNAGE						
Freighter Aircraft	271,214	-	4,502	247,241	-	522,957
Passenger Aircraft	306,739	2,803	3	73,137	-	382,682
TOTAL CARGO TONNAGE	1,342,125	7,140	15,227	666,843	-	2,031,335
G4-EC8: INDIRECT ECONOMIC IMPACTS						
Direct jobs created by airport	105,993	28,962	No data for 2014	64,583	No data for 2014	199,538
Indirect jobs created by airport	172,201	92,405		107,705		372,311
Airport regional economic contribution ($millions)	$53,441	$22,271		$32,306		$108,018
EN3-ENERGY CONSUMPTION WITHIN THE ORGANIZATION**						
Building electricity (Gj)	1,357,718	342,694	12,409	343,778	8,255	2,064,854
Building stationary combustion (Gj)	2,435,255	105,214	15,679	275,500	13,587	2,845,235
Building heating and cooling(Gj)	516,143	94,275	-	412,511	-	1,022,929
Vehicle gasoline and diesel (Gj)	8,200	3,236	12,120	7,785	2,735	34,075
Total non-renewable (Gj)	4,317,316	451,143	40,208	627,063	24,576	5,460,307
Vehicle biodiesel and E-85 (Gj)	14,202	3,232	544	6,498	-	24,476
Building renewable energy (Gj)	0	0	0	779	-	779.166
Total renewable energy (Gj)	14,202	3,232	544	7,278	-	25,255
Total energy consumption (Gj)	4,331,518	454,375	40,752	634,340	24,576	5,485,562
EN4-ENERGY CONSUMPTION OUTSIDE THE ORGANIZATION						
Tenant terminal heating and cooling (GJ)	516,143	No data	0	297,008		813,151
EN6-REDUCTION IN ENERGY CONSUMPTION						
Energy Conserved (gJ)	1311.1	138.1	96.2	12.6	12.6	1,570.481

	JFK	LGA	SWF	EWR	TEB	Total
EN8-TOTAL WATER WITHDRAWAL BY SOURCE						
Water Usage-Gallons	640,866,285	136,032,820	95,970	45,208,372	596,156	822,799,603
EN15-20-GHG EMISSIONS						
Direct (Scope 1) GHG Emissions (tons CO2e)	15,659.41	6,705	1,295	18,443	845	42,949
Indirect (Scope 2) GHG Emissions (tons CO2e)	41,461.90	11,048	1,041	37,190.7	1,145	91,887
Indirect (Scope 3) GHG Emissions: Purchased thermal and electricity (tons CO2e)	130,133.30	26,984				
Indirect (Scope 3) GHG Emissions: Attracted Travel (tons CO2e)	422,331.75	286,013	5,348	331,794	1,327	1,046,814
Indirect (Scope 3) GHG Emissions: Aircraft and GSE (tons CO2e)	883,642.20	422,066	34,484	495,947	71,653	1,907,792
Indirect (Scope 3) GHG Emissions: Other Ground Access Vehicles	40,076.34	1,310.3	859	21,868	26	64,140
Reduction of GHG Emissions (tons CO2e)						-
Total GHG Emissions (tons CO2e)	1,533,304.90	754,127	43,028	905,243	74,996	3,310,698
GHG emissions intensity (tons CO2e/ enplaned passenger)	0.0288	0.0280	0.1391	0.0254	N/A	0.0285
Percentage of gates with preconditioned air	92%	47%	100%	75%	N/A	76%
Percentage of gates with gate power (400hz)	98%	95%	100%	100%	N/A	98%
Average taxi-in time (mins) (only domestic flights by major carriers)*	11.50	15.28	5.71	9.49		-
Average Taxi-out Times (mins) (only domestic flights by major carriers)*	21.43	18.46	14.13	17.23		-

**except JFK, where all operations are reported via Saab Sensis Aerobahn*

EN21: NOX, SOX, AND OTHER SIGNIFICANT AIR EMISSIONS							
SO2	kilograms	376,105.87	171,292.66	15,686	421,309	34,091	1,018,484
NOx	kilograms	3,706,942.86	1,303,886.30	132,009	2,143,453	166,992	7,453,284
PM2.5	kilograms	81,423.53	29,744.57	3,327	69,618	10,911	195,024
PM10	kilograms	87,430.55	31,507.00	3,659	74,394	11,188	208,178

	JFK	LGA	SWF	EWR	TEB	Total
A04-QUALITY OF STORMWATER BY REGULATORY STANDARDS						
Sample Locations (number)	11	3	15	3	2	34
Sample Frequency	Monthly	Monthly	Monthly	Monthly	Monthly	-
Incidences of non-compliance	1	2	0	0	1	4
A06-AIRCRAFT AND PAVEMENT DEICING/ANTI-ICING FLUID						
Aircraft Deicing Fluid Used as Neat Fluid, Gallons	2,795,986	559,632	56,410	2,447,315	174,589	6,033,932
Airfield Pavement Deicing Fluid used (Gallons e36 Cryotech)	-	86,227	-	-	-	86,227
Airfield Pavement Deicing Solid used (Tons sodium chloride)	4,270	2,613	-	-	-	6,883
Airfield Pavement Deicing Solid used (Tons of Sodium Acetate)	2,623	1,157	63	176	-	4,019
Airfield Pavement Deicing Fluid used (Gallons of Potassium Acetate)	126,250	-	40,340	568,107	329,250	1,063,947
Airfield Pavement Deicing Fluid used (Gallons of Propylene Glycol)	168,687	-	-	-	-	168,687
Airfield Pavement Deicing Solid used (lbs of Sodium Formate)	271,700	-	-	-	-	271,700
EN23-WASTE BY TYPE AND DISPOSAL METHOD						
Waste for Landfill-Tons (JFK: yards)	13,217	1,112	159	1,272	170	-
Waste for Incineration-Tons	-	-	-	-	-	-
Waste for Recycling-Tons (JFK: yards)	2,061	312	17	157	13	-
Waste for Composting-Tons	-	31	-	8	-	-
Diversion Ratio-Deplaned Waste	No data	No data	No data	No data	No data	
International Waste-Tons	No data	No data	No data	No data	No data	-
Boundary for waste reporting	PA controlled terminals, landside areas, maintenance, and administrative areas. LGA: only Terminal B					
G4-EN24: NUMBER AND VOLUME OF SIGNIFICANT SPILLS						
Number of spills	41	40	4	7	5	97
Total volume of spills (gallons)	13,090	1,375	107	2,665	261	17,498

	JFK	LGA	SWF	EWR	TEB	Total
G4-EN29-ENVIRONMENTAL FINES						
Monetary value of fines paid for non-compliance with environmental regulations and sanctions		$-	0	$4,000	0	
A07-NOISE IMPACTS						
Number of people residing within DNL 65	32,085	5,209	25	25,400	680	63,399
Percentage change of people residing within DNL 65*	0	17.32%	0	0	0	
Total noise complaints (EN34)	23,971	22,222	24	1,517	1,878	49,612
A09-WILDLIFE IMPACTS						
Total wildlife strikes	221	259	18	111	88	697
Damaging wildlife strikes	16	3	0	2	4	25
Total number of wildlife strikes per 10,000 aircraft movements	5.18	7.06	8.25	2.79	5.36	4.94
ADDITIONAL PERFORMANCE METRICS						
VEHICLE FLEETS (# OF VEHICLES, LIGHT AND HEAVY DUTY)						
Bifuel	4	0	0	2	0	6
Biodiesel	222	111	64	178	27	602
CNG	13	6		14	0	33
Electric	0	0	0	0	0	-
E-85	131	71		111	0	313
Gasoline	141	53	24	70	14	302
Hybrid	48	23	9	63	8	151
Hydrogen	0	0	0	0	0	-
Subtotal Alternative Fuel Vehicles	418	211	73	368	35	1,105
Total of all Vehicles	559	264	97	438	49	1,407
Alternative Fuel % of Total	74.78%	79.92%	75.26%	84.02%	71.43%	78.54%

	JFK	LGA	SWF	EWR	TEB	Total
VEHICLE ENERGY CONSUMPTION						
Gasoline (gal)	43,709	15,730	49,967	36,741	11,428	157,575
Bifuel (gal)	243	-	-	-	0	243
Biodiesel (gal)	29,863	16,208	-	28,821	0	74,892
Diesel (gal)	-	-	39,338	-	9,189	48,527
E-85 (gal)	106,891	77,751	-	98,326	0	282,968
Gasoline-Hybrid vehicles (gal)	23,669	10,858	5,727	27,227	789	68,270
AIRCRAFT FUEL						
Total fuel loaded onto aircraft (Jet A, gal)	1,466,377,061	249,193,574	3,904,463	667,906,326	39,096,294	2,426,477,718
AvGas (gal)			1,934,022			1,934,022
TOTAL	1,466,377,061	249,193,574	5,838,485	667,906,326	39,096,294	2,428,411,740
Alternative aviation fuel consumed (gal)	0	0	0	0	0	-
GROUND TRANSPORTATION						
Paid Parked cars	4,132,263	1,245,979	69,443	2,844,074	N/A	8,291,759
Taxi Dispatch Passengers	3,270,025	3,693,696	577	822,186	N/A	7,786,484
Number of Bus Trips to Airport (commercial bus providers)	419,892	233,199	713	279,187	N/A	932,991
Number of Bus Trips to Airport (MTA and New Jersey Transit, estimated)	3,909,150	1,289,910	N/A	335,178	Not Tracked	5,534,238
Number of AirTrain Trips	6,371,783	N/A	N/A	2,176,316	N/A	8,548,099
Percentage of passengers using mass transit	24%	18%	6%	23%	N/A	23%
Percentage of PA employees using mass transit	29%	29%	0%	7%	0%	21%

* 2012 contour vs. 2008 contour. Majority of the change is due to use of the 2010 census vs. 2000 census for previous contour.

** EN3-Energy Consumption within the organization includes energy bills received by the Port Authority

EN3-JFK: Includes Port Authority administrative and maintenance buildings, all terminal heating, cooling, and electricity use, cargo building energy use, AirTrain and airside/landside infrastructure

EN3-LGA: Includes Port Authority administrative and maintenance buildings and Terminal B heating, cooling, and electricity use and airside/landside infrastructure

EN3-EWR: Includes Port Authority administrative and maintenance buildings and all terminal heating and cooling, terminal B electricity use, AirTrain and airside/landside infrastructure

EN3-SWF: Includes Port Authority administrative and maintenance buildings and terminal heating, cooling, and electricity use and airside/landside infrastructure

EN3-TEB: Includes Port Authority administrative and maintenance buildings and airside/landside infrastructure

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16\ APPENDIX B: GRI DISCLOSURES TABLE

GRI AIRPORT OPERATORS SECTOR DISCLOSURES

INDICATOR		REPORT PAGE NUMBER
G4-1	Statement from most senior decision maker of the organization about the relevance of sustainability to the organization and its strategy	i
G4-2	Key Impacts, Risks, and Opportunities	11
G4-3	Name of the organization	ii
G4-4	Primary Brands, Products, or Services; Report operational boundaries regarding services that may be provided by the reporting organization or by third parties.	ii
G4-5	Location of the organization's headquarters	ii
G4-6	Number of countries where the organization operates	ii
G4-7	Nature of ownership and legal form	7
G4-8	Markets served; Report on the catchment area for passengers and cargo originating in the vicinity of the airport. Report on other non-aviation business lines in which the airport is engaged.	2
G4-9	Scale of the reporting organization	7
	Number of employees	7
	Number of operations	6
	Net revenues	15
	Size of airport (acres)	4
	Number and length of runways	4
	Minimum connection time between flights	N/A
	Number of airlines served	2
	Number of destinations served	2
	In addition, organizations are encouraged to provide the following breakdowns: • Sales and revenues that make up 5% or more of total revenues, by airport • Costs that make up 5% or more of total costs, by airport	N/A

INDICATOR		REPORT PAGE NUMBER
G4-10	• Total number of employees by employment contract and gender • Total number of permanent employees by employment contract and gender	Not reported
G4-11	Percentage of employees covered by collective bargaining agreements	Not reported
G4-12	Describe the organization's supply chain.	ii
G4-13	Report significant changes during the reporting period to the organization's size, structure, ownership, or supply chain.	ii
G4-14	Report whether and how the precautionary approach or principle is addressed by the organization.	ii
G4-15	List externally developed economic, environmental and social charters, principles, or other initiatives to which the organization subscribes or it endorses.	11
G4-16	List memberships of associations (such as industry associations) and national or international advocacy organizations in which the organization: • Holds a position on the governance body • Participates in projects or committees • Provides substantive funding beyond routine membership dues • Views membership as strategic	8
G4-17	a. List all entities included in the organization's consolidated financial statements or equivalent documents. b. Report whether any entity included in the organization's consolidated financial statements or equivalent documents is not covered by the report.	7
G4-18	a. Explain the process for defining the report content and the Aspect Boundaries. b. Explain how the organization has implemented the Reporting Principles for Defining Report Content.	ii
G4-19	List all the material Aspects identified in the process for defining report content.	12

G4-20	For each material Aspect, report the Aspect Boundary within the organization, as follows:
	• Report whether the Aspect is material within the organization.
	• If the Aspect is not material for all entities within the organization (as described in G4-17), select one of the following two approaches and report either:
	  • The list of entities or groups of entities included in G4-17 for which the Aspect is not material or
	  • The list of entities or groups of entities included in G4-17 for which the Aspects is material
	• Report any specific limitation regarding the Aspect Boundary within the organization.
		12

G4-21	a. For each material Aspect, report the Aspect Boundary outside the organization, as follows: • Report whether the Aspect is material outside of the organization. • If the Aspect is material outside of the organization, identify the entities, groups of entities or elements for which the Aspect is material. In addition, describe the geographical location where the Aspect is material for the entities identified. • Report any specific limitation regarding the Aspect Boundary outside the organization.	12
G4-22	a. Report the effect of any restatements of information provided in previous reports, and the reasons for such restatements.	ii
G4-23	Report significant changes from previous reporting periods in the Scope and Aspect Boundaries.	ii

INDICATOR		REPORT PAGE NUMBER
STAKEHOLDER ENGAGEMENT		
G4-24	Provide a list of stakeholder groups engaged by the organization.	8
G4-25	Report the basis for identification and selection of stakeholders with whom to engage.	8
G4-26	Report the organization's approach to stakeholder engagement, including frequency of engagement by type and by stakeholder group, and an indication of whether any of the engagement was undertaken specifically as part of the report preparation process.	8
G4-27	Report key topics and concerns that have been raised through stakeholder engagement, and how the organization has responded to those key topics and concerns, including through its reporting. Report the stakeholder groups that raised each of the key topics and concerns.	22-25
REPORT PROFILE		
G4-28	Reporting period for information provided	ii
G4-29	Date of most recent report	ii
G4-30	Reporting cycle	ii
G4-31	Contact point for questions regarding the report and its contents	ii
G4-32	a. Report the 'in accordance' option the organization has chosen. b. Report the GRI Content Index for the chosen option (see tables below). c. Report the reference to the External Assurance Report, if the report has been externally assured. GRI recommends the use of external assurance but it is not a requirement to be 'in accordance' with the Guidelines.	ii
G4-33	a. Report the organization's policy and current practice with regard to seeking external assurance for the report. b. If not included in the assurance report accompanying the sustainability report, report the scope and basis of any external assurance provided. c. Report the relationship between the organization and the assurance providers. d. Report whether the highest governance body or senior executives are involved in seeking assurance for the organization's sustainability report..	N/A
G4-34	• Report the governance structure of the organization, including committees of the highest governance body. • Identify any committees responsible for decision-making on economic, environmental and social impacts.	9
G4-56	Describe the organization's values, principles, standards and norms of behavior such as codes of conduct and codes of ethics.	7
G4-DMA	Economic	12
G4-DMA	Environmental	13
G4-DMA	Labor Practices and Decent Work	13
G4-DMA	Society	13
G4-DMA	Product Responsibility	13

INDICATOR		REPORT PAGE NUMBER
ECONOMIC INDICATORS		
ECONOMIC PERFORMANCE		
A01	Total number of passengers annually, broken down by passengers on international and domestic flights and broken down by origin-and-destination and transfer, including transit passengers.	41
A02	Total annual number of aircraft movements by day and by night, broken down by commercial passenger, commercial cargo, general aviation, and state aviation flights	41
A03	Total amount of cargo tonnage.	42
G4- EC1	Direct economic value generated and distributed, including revenues, operating costs, employee compensation, donations and other community investments, retained earnings, and payments to capital providers and governments.	41
G4-EC4	Significant financial assistance received from government.	41
INDIRECT ECONOMIC IMPACTS		
G4-EC8	Significant indirect economic impacts, including the extent of impacts	43
ENVIRONMENTAL INDICATORS		
ENERGY		
G4-EN3	Energy consumption within the organization	42
G4-EN4	Energy consumption outside the organization	Partially reported 42
G4-EN5	Energy Intensity	Not reported
G4-EN6	Reduction of energy consumption	42
G4-EN7	Reductions in energy requirements of products and services	Not reported
WATER		
G4-EN8	Total water withdrawal by source	44-46
G4-EN9	Water sources significantly affected by withdrawal of water	32
G4-EN10	Percentage and total volume of water recycled and reused	0
INTER-MODALITY		
DMA	Report policies on long-term plans and initiatives for reducing significant environmental impacts. This includes the interaction and integration with transport authorities and operators serving the airport as well as interconnection to destination via land transport (e.g., substitution for short haul air transportation via trains).	36

INDICATOR		REPORT PAGE NUMBER
EMISSIONS		
G4-EN15	Direct (Scope 1) GHG Emissions (tons CO2e)	43
G4-EN16	Indirect (Scope 2) GHG Emissions (tons CO2e)	43
G4-EN17	Scope 3 GHG Emissions (tons CO2e)	43
G4-EN18	GHG Emissions Intensity (tons CO2e/enplaned passenger)	43
G4-EN19	Reduction of GHG Emissions (tons CO2e)	43
G4-EN20	Emissions of Ozone depleting substances (tons CO2e)	43
AO5	Ambient air quality levels according to pollutant concentrations in microgram per m3 or parts per million (ppm) by regulatory regime	43
G4-EN21	NOx, SOx, and other significant air emissions	43
EFFLUENTS AND WASTE		
AO4	Quality of storm water by applicable regulatory standards.	44
AO6	Aircraft and pavement de-icing/anti-icing fluid used and treated by m3 and/or metric tonnes.	44
G4-EN23	Total weight of waste by type and disposal method.	44
G4-EN24	Total number and volume of significant spills.	45
COMPLIANCE		
G4-EN29	Monetary value of significant fines and total number of non-monetary sanctions for non-compliance with environmental laws and regulations.	45
ENVIRONMENTAL GRIEVANCE MECHANISMS		
G4-EN34	Number of grievances related to environmental impacts filed, addressed, and resolved through formal grievance mechanisms	45
NOISE		
AO7	Number and percentage change of people residing in areas affected by noise.	45
G4-SO11	Number of grievances on impacts to society filed, addressed and resolved through formal grievance mechanisms	45
A09	Total annual number of wildlife strikes per 10,000 aircraft movements.	45

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