Appendix 10 Port Authority of New York & New Jersey Newark Liberty International Case Example

Appendix 10
Port Authority of New York & New
Jersey Newark Liberty International
(EWR) Newark, New Jersey

The Port Authority of New York & New Jersey is committed to making John F. Kennedy International Airport (JFK), LaGuardia Airport (LGA), Newark Liberty International Airport (EWR), Stewart International Airport (SWF), and Teterboro Airport (TEB) environmentally responsible. These airports follow a sustainability approach known as EONS, which considers:

- Economic viability
- Operational efficiency
- Natural resource conservation
- Social responsibility

To guide decision making, the Port Authority developed Sustainable Management Plans for SWF, EWR, and TEB. The Port Authority has since combined sustainability planning for the entire airport system into a consolidated sustainability plan. According to the most recent consolidated sustainability plan, included at the end of this case example, the Port Authority's Aviation Department adopted a formal recycling policy in 2009. This policy states that waste generated at the airports will be reused and recycled where economically and technically feasible. The recycling policy is referenced in Airport Rules and Regulations and airport tenants are required to comply with this commitment.

Waste management activities are coordinated by Port Authority Environmental Services Managers and maintenance managers at each airport and supported by the Authority's Manager of Aviation Environmental Programs. Each Port Authority Airport's program is designed to comply with State of New Jersey, City of New York, county, and local laws and requirements, where applicable. According to the Port Authority's consolidated sustainability plan, waste audits have been conducted at three of the airports; composting programs were in place at two facilities; and the airports use standardized recycling signage from Recycle Across America ®.

The Port Authority is responsible for waste management activities in areas of Terminal B at EWR that are under Port Authority's control, as well as other buildings under the its control (e.g., administration buildings). It is the Port Authority's goal to achieve a 50% recycling rate at this airport. The Authority provides containers and bins in the areas of the Airport that are under its control and contracts for third-party hauling and janitorial services through the Procurement Department. The Authority's Aviation Environmental Programs and Office of Environmental and Energy Policy staff collaborate with tenants regarding waste and recycling activities in the leased spaces of this terminal. The Authority monitors, measures, and tracks waste and recycling volumes based on data from its haulers. The Authority formally reminds tenants of their requirements under the waste program in an annual memo. The Port Authority collects ideas for program improvements and expansions through best practice sharing with other airports and organizations.

The Port Authority recently conducted an inspection of recycling and waste containers at the areas of Terminal B at EWR that are under Port Authority's control. This inspection validated the practice of collocating waste and recycling bins together. Where recycling bins were located adjacent to a trash can, inspection of the bins and cans indicated that passengers disposed of materials in accordance with the program. Proper use of collocated recycling bins and trash cans in the international arrivals portion of Terminal B was not as good as in other areas of the terminal. Where recycling bins and trash cans were located separately throughout the terminal, the recycling bins had more contamination by waste materials and the trash cans contained more recyclables.

The Port Authority had established a pre-consumer back of house food waste composting program at EWR, in partnership with the food and beverage operator. However, the facility that was accepting this material closed, so the program is on hold. The Port Authority is working to identify a suitable alternative facility for this material and plans to relaunch the program as soon as one is found.

The Port Authority is considering conducting additional waste stream composition studies; partnering with airlines to expand recycling to their areas; and consolidating waste hauling services. The authority is evaluating waste minimization strategies for facilities under the Port Authority's control and sustainable packaging strategies for concessionaires to enhance the Port Authority's waste management program.



JOHN F. KENNEDY NEWARK LIBERTY LAGUARDIA STEWART TETERBORO











AIRPORT SUSTAINABILITY REPORT

### LETTER FROM THE DIRECTOR

I am pleased to present the 2015 Sustainability Report covering the Port Authority of New York and New Jersey's dynamic and critical airport system, serving as a leading international gateway and link to the New York-New Jersey metropolitan region.

This year's sustainability report follows the inaugural 2014 Airport Sustainability Report, and continues to build upon individual sustainability reports completed for Newark Liberty International, Teterboro and Stewart International Airports in years past. This second annual report affirms our commitment to reporting our progress through the Global Reporting Initiative framework.

Our airports continue to experience robust passenger growth that creates unique challenges and opportunities for the future development of our airport system. In 2015, we served a record total 124 million passengers. Constrained capacity in the regional airspace and at our facilities on the ground makes it increasingly difficult to accommodate the number of passengers passing through our airports.

As we develop day-to-day operational improvements and long-term strategies to meet the needs of our passengers, we are always striving to incorporate sustainability objectives as key business priorities. Social, economic and environmental sustainability are key indicators of our Agency's success. We take our role as a community leader seriously. Advancing sustainability initiatives at our airports allows us to not only provide for the efficient transport of passengers and goods through our facilities, but also enhance customer service and drive regional economic growth while reducing our environmental impact.

This Report lays out a number of the key initiatives in our pursuit of the sustainable stewardship of our facilities. We are developing solutions that will modernize our terminals for enhanced customer experiences, address airport delay and capacity constraints and better protect our facilities from extreme weather events.

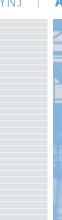
The 2015 Report serves to reinforce our ongoing commitment to sustainability and further demonstrate the integration of sustainability into our key business planning strategies. We have updated the metrics database, which has become a valued reference for our airport staff. It demonstrates many of our 2015 successes, such as increased energy efficiency and greater passenger use of public transportation to access our airports. Moving ahead, we look forward to continuing to work with our staff, tenants and operators to further bolster our airport sustainability initiatives and ensure the continued success of our dynamic airport system.

Thomas L. Bosco

Huntley d. Jauvence

Director

Aviation Department



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#### **ABOUT THIS REPORT**

This 2015 Sustainability Report is the second annual report to be published for the Aviation Department of the Port Authority of NY and NJ (Port Authority). 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, 2015 to December 31, 2015. The Port Authority intends to release department-wide sustainability reports annually. While the report focuses on 2015, some metrics in the report cover the calendar year 2014. Two reasons for this are (1) reporting data for 2015 are not yet available at time of publication and (2) no significant changes are expected for CY 2015.

Where applicable, certain portions of this report restate information from the 2014 Sustainability Report to emphasize the Port Authority's commitment to its airport sustainability initiatives. 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 A of the report. To view past sustainability reports, please go to http://www.panynj.gov/about/airport-sustainability.html

At time of publication, the Corporate Headquarters of the Port Authority of New York and New Jersey are located at 4 World Trade Center, 150 Greenwich Street, New York, NY 10007, United States

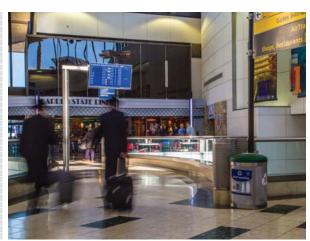
The contact for questions on this report is

#### Matt DiScenna, Sustainability Specialist, mdiscenna@panynj.gov

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 uses 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 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.



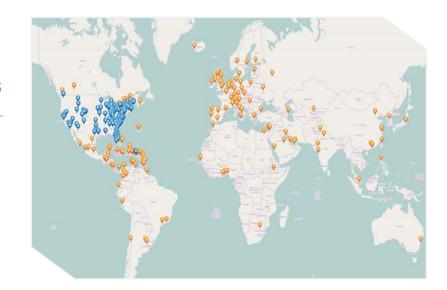
## 01\ OUR AIRPORTS AND DESTINATIONS

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

Serving about 270 destinations with direct passenger service on more than 90 airlines, 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 an all-time record high 124 million passengers and 2 million short tons of freight in nearly 1.3 million flight operations in 2015.

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	171
Airlines	85
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
2015 Passengers	56,827,154
2015 Operations	438,897
Terminals	6
Passenger Boarding Bridges	135

## **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
2015 Passengers	37,498,477
2015 Operations	413,521
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
2015 Passengers	26,954,588
2015 Operations	360,834
Terminals	4
Passenger Boarding Bridges	76

## **STEWART INTERNATIONAL AIRPORT**

#### **SWF**

1,552 ACRES



Destinations	6
Airlines	4
Two Primary Runways	9-27: 11,817 x 150 ft 16-34: 6,004 x 150 ft
2015 Passengers	281,754
2015 Operations	37,834
Terminals	1
Passenger Boarding Bridges	7

## **TETERBORO AIRPORT**

#### **TEB**

830 ACRES

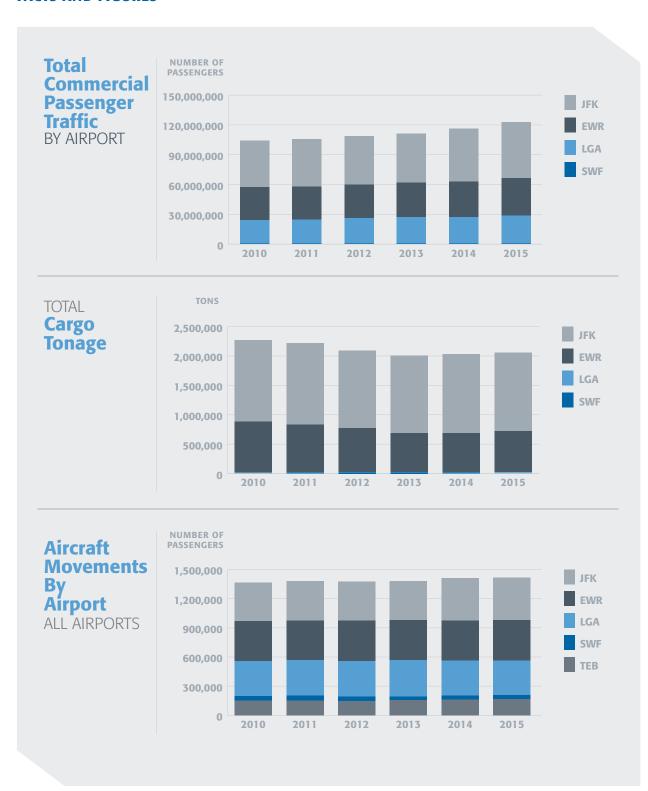


Airlines	None: General Aviation
Two Primary Runways	1-19: 7,000 x 150 ft 6-24: 6,013 x 150 ft

## **SERVING ABOUT 270 DESTINATIONS** WITH DIRECT PASSENGER SERVICE,

THE PORT AUTHORITY'S AIRPORTS HAVE FEW RIVALS IN CONNECTING THE WORLD

#### **FACTS AND FIGURES**





## 02\ CORPORATE GOVERNANCE

The Port Authority of NY and NJ is a bi-state agency that relies almost entirely on revenues generated by facility users. The Port Authority receives no tax revenue from New York, New Jersey or New York City.

The Port Authority undertakes projects and activities in accordance with the 1921 Port Compact, and amendatory and supplemental legislation.

The governor of each state appoints six members of 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.

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. Reporting (including narrative, supporting analysis and public presentations) is generally completed for each project authorized by the board, and details the impacts (economic and if applicable, environmental and social) of each proposed project.

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.

More than two thirds of Port Authority's 7,403 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, including the Federal Aviation Administration (FAA), based on the influence and impact of the airport on those stakeholders.

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

THE BOARD COMMITTEES
ENSURE THE DELIVERY
OF RESULTS ACROSS KEY
AREAS OF THE AGENCY.

Audit

Capital Planning,
Execution, and
Asset Management

Finance

Governance
and Ethics

Operations

Security

## THE BOARD OF COMMISSIONERS IS GOVERNED BY THE PORT AUTHORITY'S CODE OF ETHICS



## O3\ 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 percent 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\ ASPECTS OF SUSTAINABILITY **AND MATERIALITY**

# 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 2015 activities at the airport. The Port Authority defines materiality based on the priority of each aspect to the business, our stakeholders, and our customers.

ECONOMIC	
LCONOMIC	
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.
ndirect With over 500,000 jobs dependent upon the economic activity of our airport our indirect economic impacts are critical for the region's success.	
ENVIRONMENTAL	
Energy	The Port Authority is responsible for almost 3m Gigajoules (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 significar 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 partne

ASPECTS ENVIRONMENTAL	MATERIALITY STATE	MENT		
Effluents and Waste	operations and anci and a departmental	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 A	AND DECENT WORK			
Employment Labor/Management Relations Occupational Health and Safety		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		
Training and Educati	ion	support that can be provided.		
SOCIETY				
Local Communities		Port Authority Airports are integral parts of communities, providing an economic engine for the region as well as services that are used by		

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\ **ECONOMIC SUSTAINABILITY**

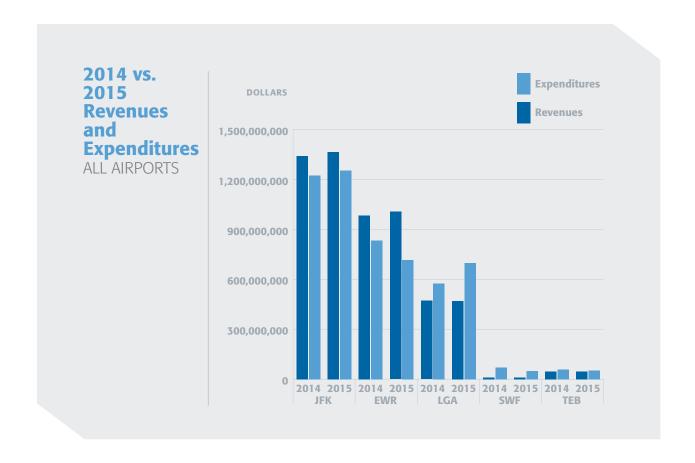
The Economic Sustainability of our airports is paramount to the economic health of the region and the activities that help our airports reduce their impact on the environment and on our neighbors.

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. In 2015, the passenger growth rate at Port Authority airports exceeded that of four of the top five busiest U.S. airports – ATL, ORD, DEN and DFW. Our airport system supports more than 588,800 jobs throughout the region, paying \$30.6 billion in annual wages and generating \$84.7 billion in annual sales.

The Port Authority spent almost \$792 million on airport projects in 2015. These projects range from large-scale, marquee initiatives such as the rehabilitation of Runway 4L-22R at JFK to the modernization of both runways at SWF. 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 for the anticipated 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 minorityand women- owned and disadvantaged business enterprises: 17 percent total participation, 12 percent minority, and 5 percent 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.



## **OUR AIRPORT SYSTEM SUPPORTS MORE THAN 588,800 JOBS THROUGHOUT THE REGION,**

PAYING \$30.6 BILLION IN ANNUAL WAGES AND GENERATING \$84.7 BILLION IN ANNUAL SALES



## 06\ **MEETING CUSTOMER NEEDS**

At the Port Authority's airports, the customer comes first. We take great care to provide our 124 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-onone personalized service for thousands of travelers every day. With more than 300 CCRs mobilized across the Port Authority's airport system, we are 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 new customer care services and initiatives for 2015 include:

- Piloted a meet and greet concierge service that provides customers with a meet and greet service for arriving and departing passengers
- Assist customers with reaching shared ride services through the Customer Care Expeditor Program
- Promote TSA Pre-Check and Global Entry programs to expedite passengers through departure screening check points and through the customs process on arrivals

WITH MORE THAN **300 CUSTOMER CARE** REPRESENTATIVES **MOBILIZED ACROSS THE PORT AUTHORITY'S AIRPORT SYSTEM,** 

WE ARE **PREPARED** TO ASSIST THROUGHOUT THE AIRPORTS In addition, our Customer Care Airport Standards Manual holds everyone at the airports who interacts with customers to the same high standards. We also conduct annual customer satisfaction surveys and monthly "mystery shopper" evaluations 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.

#### **NURSING SUITES**

In May of 2015, the Port Authority installed nursing pods in the terminals that it operates at EWR and LGA to provide nursing mothers with a private location to nurse their babies. The two airports are among the first nationally to offer the freestanding stations that provide a clean, comfortable and secure place for women who need to use a breast pump or want to nurse in privacy. The freestanding suites feature bench seating, a fold-down table, and power supply for pumping, as well as space for luggage or a stroller. When a unit's door is closed, it can be locked from the inside and displays an "occupied" message on the outside.



## **EWR AND LGA ARE AMONG THE FIRST NATIONALLY TO OFFER NURSING SUITES**

THAT PROVIDE A CLEAN, COMFORTABLE AND SECURE PLACE FOR WOMEN WHO NEED TO USE A BREAST PUMP OR WANT TO NURSE IN PRIVACY.



## 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, gender identification and gender expression.
- 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.

Above: Port Authority employees participating in a "9/11 Remembrance Through Renewal" volunteer outing with the Brooklyn Bridge Park Conservancy

> THE PORT AUTHORITY **SEEKS A**

## **DEDICATED AND DIVERSE WORKFORCE**

THAT IS BROADLY **REFLECTIVE OF THE WORKING POPULATION** 

OF THE REGION IT SERVES.

#### **WORKFORCE DEVELOPMENT**

The Port Authority Aviation Department is devoted to providing staff with the knowledge, skills, and abilities necessary to run our airports safely and efficiently, and to promote career growth for staff at all levels. Through a multi-faceted approach, we assess our talent annually, provide developmental opportunities for staff to gain breadth of experience, and offer on-the-job and classroom training to deepen our employees' technical knowledge and leadership capabilities.

The Aviation Department has a contract with the American Association of Airport Executives to provide regulatory, operational, aeronautical, and security training to both airport and corporate staff. Classes offered on a regular basis include CFR Part 139, Basic and Advanced Airport Safety and Operations Specialist, Wildlife Management,

Airport Certified Employee Operations, and Airport Certified Employee Security. Staff who pass the exam offered at the end of certain courses receive professional certifications that are widely recognized in the Aviation industry.

Through our participation in the Port Authority's Talent Review program, we conduct an annual assessment of managers in our department to measure leadership ability, aspiration, and learning agility. This process helps the department to grow and nurture talent, identify employees who are well equipped to move into positions of greater responsibility, and broaden our talent pool. Individuals identified as having high potential and future leaders are given training and development opportunities to help to prepare them to move into critical leadership roles at our airports and in our corporate office.

#### **INDUSTRY EXPERTISE**

Leaders and staff from the Port Authority Aviation
Department are active in a number of professional
organizations in the aviation, transportation, project
management, and engineering industries. Memberships
include the American Association of Airport Engineers
(AAAE), Transportation Research Board, American Planning
Association (APA), Air Traffic Control Association, American
Society of Civil Engineers, Project Management Institute,
National Fire Protection Agency, and a number of local and
regional councils and advisory boards.

Port Authority Aviation staff are looked to as industry experts and are often called upon to speak at events, serve on panels, and to speak or moderate at professional conferences. In 2015, leaders from the Aviation Department spoke at a number of industry events, some of which include meetings and conferences for the Airports Council International — North America, American Association of Airport Executives, New York City Bar Association Committee on Aeronautics, Construction Management Association of America, and New York City Council Transportation Committee. Aviation staff also support and partner with a number of educational institutions with aviation programs, including serving on the board of the CUNY - York College Aviation Institute and the Vaughn College of Aeronautics and Technology Advisory Council.



## 08\ WILDLIFE HAZARD MANAGEMENT

## FAA requires all Part 139 certified 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 at JFK, EWR and 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 include habitat and construction management, wildlife monitoring, wildlife strike reporting, insect management, wildlife population control and community outreach.

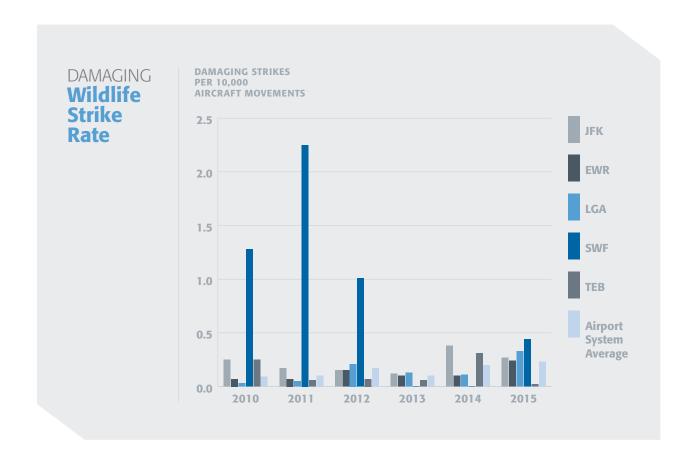
In addition to these efforts, specific cooperative efforts with multiple agencies have been undertaken to manage Canada goose populations within the New York City metro area. This is following a two-year multi-agency research project on local Canada goose movements. We have also undertaken several research 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.

Above: Port Authority collaborating with NYC Audubon and USDA to track the movements of gulls that nest in the area by placing numbered bands on the legs of gulls to help track their movements and understand their behavior.

THE PORT AUTHORITY **AIRPORTS HAVE HAD** WILDLIFE MANAGEMENT **PROGRAMS FOR** 

**OVER 30 YEARS** AT JFK, EWR AND LGA

#### **FACTS AND FIGURES**



## THE PORT AUTHORITY AIRPORTS 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



## 09\ 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, particulate matter, carbon dioxide and other greenhouse gases, 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. In 2015, the Port Authority estimates that through the program, airlines saved \$13 million in fuel costs and 30,000 hours of wasted passenger and crew time compared to the 2009 baseline year. In addition, the reduction in fuel usage resulted in an annual reduction of 44,000 metric tons of CO<sub>2</sub> emissions.

In 2015, the Port Authority began investigating the implementation of similar ground management programs at both EWR and LGA.

#### 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. The Port Authority is investigating the potential for GBAS at JFK, LGA and TEB in order to create better utilization of the constrained airspace around each airport. Implementation will take several years due to the necessary design and system installation processes.

In 2015, the Port Authority worked with FAA to expedite the implementation of Wake Turbulence Recategorization (Wake RECAT) for our airport system nearly two

Ground Based Augmentation System Architecture Source: FAA

years ahead of schedule. Wake RECAT, which is being introduced at several airports around the country, reduces the separation standards between aircraft. It increases operational efficiency, leading to reductions in delay that save fuel burn and reduce aircraft emissions. The implementation of Wake RECAT has reduced delays at JFK and EWR. At JFK, Wake RECAT has also helped to reduce the operational impact of the Runway 4L-22R closure during its rehabilitation.

NextGen provides a major opportunity for major permile carbon emissions reductions in the New York/New Jersey region. Currently, departures and arrivals 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. To that end, the Port Authority continues to work with partners, such as FAA and the National Aeronautics and Space Administration (NASA), to identify airspace flow improvements and technologies that will continue to increase airspace efficiency at our airports.

#### **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.

#### **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.

#### **BUILDINGS AND BUILT ENVIRONMENT**

#### **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 \$24 million of energy efficiency work that produces \$1.5 million in energy savings per year and reduces GHG emissions by 6,000 tons per year at JFK, LGA, TEB, and EWR.

Approximately \$15 million of additional energy projects are underway at JFK, EWR, and SWF that will deliver an additional \$1.1 million per year in energy savings to the Port Authority. Projects have included upgrades to heating, ventilation, and air conditioning systems and controls, LED lighting retrofits, installation of renewable energy, steam and building envelope improvements and water conservation work.

#### **LEED SILVER TARGETS FOR NEW TERMINAL PROJECTS**

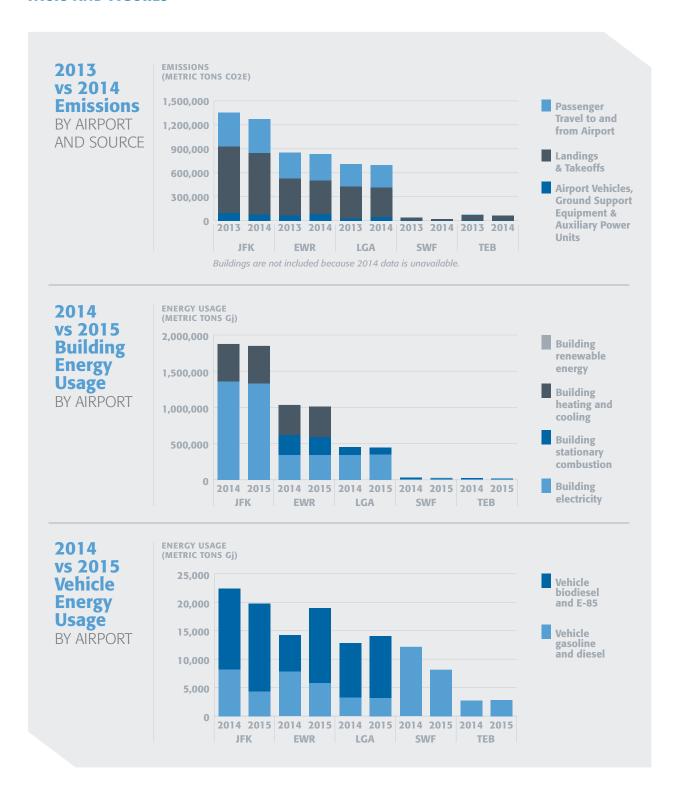
The Port Authority is planning major replacements of EWR's Terminal A and LGA's Central Terminal Building within the next several years. The projects are required to comply with the Port Authority's Sustainable Building Guidelines, but are pushing the envelope even further to target the US Green Building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

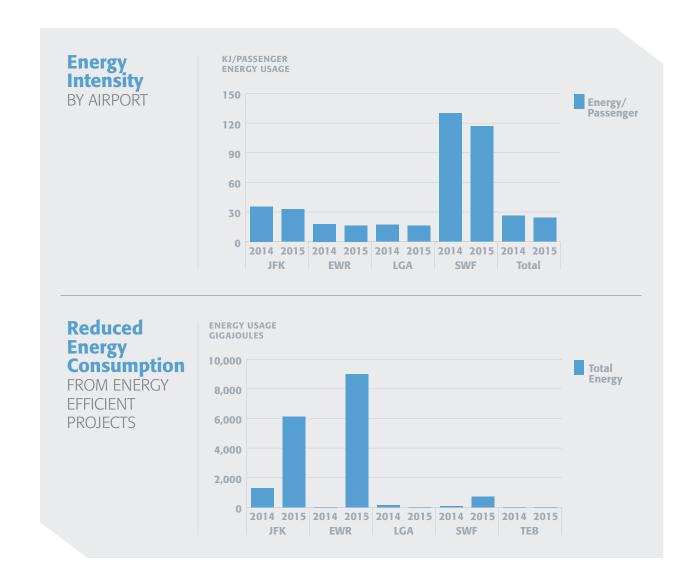




A rendering of the new EWR Terminal A, a one-millionsquare-foot LEED Silver terminal building

#### **FACTS AND FIGURES**





# 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.





## 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 methovds 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, Total Suspended Solids (TSS), Total Kjeldahl Nitrogen (TKN), Total Petroleum Hydrocarbons (TPHC), Carbonaceous Biochemical Oxygen Demand (CBOD), and Chemical Oxygen Demand (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 to 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.

In addition, the Port Authority has incorporated language into the NEPA document for the redevelopment of the LGA Central Terminal Building mandating the installation of deicing containment systems as part of the apron storm drainage systems in order to prevent the discharge of contaminants to surrounding waters. The Port Authority plans to include similar language in the NEPA document for the redevelopment of EWR Terminal A..

#### 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.

#### **FACTS AND FIGURES**

#### **Quality of Stormwater, 2015** BY REGULATORY STANDARDS

JFK **Sample Locations (number)** 12 3 6 3 2 26 **Sample Frequency** Monthly Monthly Monthly Monthly Monthly **Incidences of non-compliance** 2 0 0 1 4



## 11\ COMMUNITY

As a result of the Port Authority's Sea Level Rise Hazard Assessment at EWR, the agency filed a successful appeal to the Federal Emergency Management Agency (FEMA) that reduced the area of the 100-year floodplain for EWR and surrounding communities in the cities of Newark and Elizabeth.

#### **ECONOMIC BENEFITS OF RESILIENCE PLANNING**

The revised floodplain maps removed approximately 1,000 residential properties and 10,000 residents of Newark and Elizabeth from the 100-year floodplain. This reduced required flood insurance annual premiums by an estimated \$1.3 million per year for property owners and renters. The Port Authority has estimated that nearly 2,000 of the residents removed from the floodplain qualify as environmental justice residents. These disadvantaged community members will no longer be subject to annual flood insurance premium payments as a direct result of the Port Authority's FEMA appeal. In addition, approximately 500 commercial and 300 industrial properties were also removed from the 100-year floodplain, likely saving property owners and business millions of dollars per year in flood insurance premiums.





- Properties remaining in the 100-year floodplain after the Port Authority's FEMA appeal
- Properties removed from the 100-year floodplain after the Port Authority's FEMA appeal
- Areas removed from 100-year floodplain after the Port Authority's FEMA appeal
- 100-year floodplain after the Port Authority's FEMA appeal

#### **ENVIRONMENTAL JUSTICE**

In 2015, the Port Authority developed its Environmental Justice Guide to serve as a roadmap for integrating Environmental Justice (EJ) reviews into all phases of Port Authority transportation projects.

By incorporating EJ in the overall project implementation and development life cycle, the Port Authority intends to delineate how it will address potential EJ concerns/ considerations in projects. Through this Guide, and the involvement of Government and Community Relations (GOCOR) with a Public Participation Guide (PP Guide), the Port Authority seeks to build stronger relationships with communities. The new process will ensure that the Port Authority consistently and carefully assess environmental impact of projects on minority and low-income communities, ensuring the agency can effectively develop strategies to mitigate any serious negative impacts. Many Port Authority projects enhance transportation and create employment opportunities in the neighborhoods they serve. The EJ Guide will consider both positive and negative short- and long-term effects of projects within minority and low income populations, institutionalizing the Port Authority's commitment to fair treatment of all the populations it serves

THROUGH ITS ENVIRONMENTAL JUSTICE GUIDE AND THE INVOLVEMENT OF GOVERNMENT AND COMMUNITY RELATIONS WITH A PUBLIC PARTICIPATION GUIDE,

THE PORT AUTHORITY SEEKS TO CONSISTENTLY AND CAREFULLY ASSESS ENVIRONMENTAL IMPACT OF PROJECTS ON MINORITY AND LOW-INCOME COMMUNITIES, ENSURING STRATEGIES TO MITIGATE ANY SERIOUS NEGATIVE IMPACTS.



## 12\ GROUND TRANSPORT

## In 2015, the Port Authority's AirTrain systems served more passengers than at any point in the past.

Passengers accessing the airport consistently account for almost 50 percent 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 is undertaking a comprehensive approach to ensure that passengers and airport employees can access the airport in an environmentally responsible and socially inclusive manner. Several recent initiatives include:

- Electric Vehicle (EV) charging stations at LGA and JFK helped 1,362 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.
- The opening of a cell-phone waiting lot at EWR improved customer safety and reduced fuel use from vehicle idling and circulation



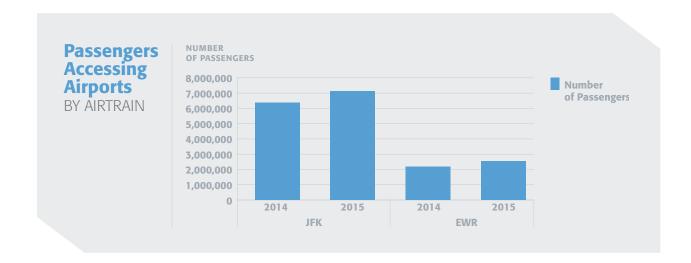
Passengers entering the JFK AirTrain system at Jamaica Station

#### **PUBLIC TRANSPORTATION**

In 2015, Port Authority airports continued to be among the nation's leading airports in passenger public transportation use. AirTrain JFK and AirTrain Newark posted their highest ridership numbers ever, with 7.13 million and 2.55 million riders, respectively. The 2014-2015 year-over-year ridership growth significantly outpaced overall passenger growth at each airport, demonstrating that an increasing share of airport

passengers are utilizing public transportation to access both airports. At JFK, 2015 AirTrain ridership increased by 12 percent over 2014, while the airport experienced an overall passenger growth rate of 6.8 percent. At EWR, 2015 AirTrain ridership was 17 percent higher than 2014, while overall airport passenger growth was 5.3 percent. LGA has also experienced recent increases in public transportation use through bus services.

#### **FACTS AND FIGURES**





## 13\ **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, which 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. Chief among these is that the Port Authority does not control the majority of customer-facing areas within, 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:

- 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.

## 14\ APPENDIX A: SUSTAINABILITY METRICS

	H.	JFK	ICA	A.	SWF	VF	EV	EWR	TEB	æ	Total	le
	2014	2015	2014	2015	2014	2015	2014	2015	2014	2015	2014	2015
G4-9: SCALE OF THE REPORTING ORGANIZATION	ORGANIZAI	NOL										
Number of employees (total incl. staff at World Trade Ctr)	No data	511	No data	328	No data	ω	No data	433	No data	3	No data	1,387
Number of operations	434,888	438,897	360,834	360,274	37,993	37,834	414,298	413,521	161,842	167,236	1,409,855	1,417,762
Net revenues (\$ million)	\$115.77	\$111.58	-\$103.43	-\$238.41	-\$58.07	-\$38.78	\$151.42	\$289.88	-\$12.06	-\$5.51	\$93.62	\$118.75
Size of airport (acres)	4,930	4,930	089	089	2,400	2,400	2,207	2,207	827	827	11,044	11,044
Number and length of longest runway (ft)	4   1	4   14,572	2   7	17,000	2   11,817	1,817	3   1	3   11,000	2   7,000	000	13   14,572	1,572
Number of gates	125	125	9/	9/	7	7	114	114	0	0	322	322
Minimum connection time between flights				Depends on Terminal/Carrier	rminal/Carrier				N/A	N/A	N/A	N/A
Terminal square footage (million square feet)	5.89	5.89	1.12	1.12	0.11	0.11	3.70	3.70	N/A	N/A	10.42	10.42
Number of airlines served	77	79	1	10	4	4	26	27	N/A	N/A	85	87
Number of destinations served	191	192	78	69	5	9	154	178	N/A	N/A	215	261
Port Authority controlled terminal square footage	0	0	835,000	835,000	107,798	107,798	720,143	720,143	N/A	N/A	1,662,941	1,662,941
Port Authority administrative and maintenance area treated square footage	4,000,000	4,000,000	1,050,000	1,050,000	757,000	757,000	51,685	51,685	26,500	26,500	5,885,185	5,885,185

\* Passenger totals do not include Atlantic City International Airport, for which the Port Authority has an agreement to provide general management services.

A02-AIRCRAFT MOVEMENTS  Commercial Domestic Passenger Aircraft International Movements Total	-	()											
A02-AIRCRAFT MOVEMEN  Commercial Domestic Passenger Aircraft Internation Movements Total		7014	2015	2014	2015	2014	2015	2014	2015	2014	2015	2014	2015
ircraft –	TS												
ircraft	2	244,199	247,259	320,262	323,545	7,286	5,286	292,619	288,480	ı	1	864,366	864,570
		168,348	166,778	31,429	27,172	4		91,857	88,514		ı	291,638	282,464
	4	412,547	414,037	351,691	350,717	7,290	5,286	384,476	376,994	ı	1	1,156,004	1,147,034
Cargo Aircraft Movements		12,379	12,798	1	1	1,112	1,324	18,812	21,597	1	1	32,303	35,719
Government and General Aviation Aircraft Movements	_	6,962	12,062	9,143	9,557	29,591	31,224	11,010	14,930	161,842	167,236	221,548	235,009
% of Arrivals between 10PM and 7AM		20.02%	21.44%	9.26%	9.11%	%99.6	14.08%	17.27%	17.17%	No data	No data	15.68%	16.25%
% of Departures between 10PM and 7AM		17.16%	17.53%	8.27%	8.92%	5.22%	9.06%	14.17%	14.67%	No data	No data	13.28%	13.89%
Total Movements	4	434,888	438,897	360,834	360,274	37,993	37,834	414,298	413,521	161,842	167,236	1,409,855	1,417,762
A03-CARGO TONNAGE													
Arriving Cargo Freighter Aircraft		435,144	433,666	1	1	10,712	10,822	207,942	222,190	1	1	653,798	829'999
Tonnage Passenger Aircraft		329,028	343,067	4,337	4,620	10	137	138,523	141,702	1	1	471,898	489,526
Departing Cargo Freighter Aircraft		271,214	266,737	1	1	4,502	4,183	247,241	269,945	1	1	522,957	540,865
Tonnage Passenger Aircraft		306,739	288,555	2,803	3,101	3	2	73,137	71,379	1	1	382,682	363,037
Total Cargo Tonnage	1,3	1,342,125	1,332,025	7,140	7,721	15,227	15,144	666,843	705,216	1	1	2,031,335	2,060,106
G4-EC8: INDIRECT ECONOMIC IMPACTS	MIC IMPACT	S											
Direct jobs created by airport		105,993	38,232	28,962	11,977	No data	1,258	64,583	20,268			199,538	71,735
Indirect jobs created by airport		172,201	176,879	92,405	129,126	No data	2,379	107,705	176,879	No data	et.	372,311	485,263
Airport regional economic contribution (\$millions)		\$53,441	\$57,161	\$22,271	\$24,105	No data	\$470	\$32,306	\$34,491			108,018	116,227

	JFK	_	LGA	A	SWF	¥	EWR	~	TEB		Total	al
	2014	2015	2014	2015	2014	2015	2014	2015	2014	2015	2014	2015
EN3-ENERGY CONSUMPTION WITHIN THE ORGANIZATION**	THIN THE OR	GANIZATIO	**									
Building electricity (Gj)	1,357,718	1,332,255	342,694	347,509	12,409	14,307	343,778	344,576	8,255	7,850	2,064,854	2,046,497
Building stationary combustion (Gj)	1		105,214	94,175	15,679	10,535	275,500	245,530	13,587	8,545	409,980	358,785
Building heating and cooling(Gj)	516,143	516,143	No data	No data	1	1	412,511	417,119	1	ı	928,654	933,262
Vehicle gasoline and diesel (Gj)	8,200	4,324	3,236	3,167	12,120	060'8	7,785	5,810	2,735	2,820	34,075	24,211
Total non-renewable (Gj)	1,882,061	1,852,723	451,143	444,851	40,208	32,931	627,063	595,917	24,576	19,215	3,025,052	2,945,637
Vehicle biodiesel and E-85 (Gj)	14,202	15,463	9,582	10,878	0	0	6,498	13,168	1	1	30,282	39,508
Building renewable energy (Gj)	0	0	0	0	0	0	0	3,054	1	1	1	3,054
Total renewable energy (Gj)	14,202	15,463	9,582	10,878	1	1	6,498	16,222	1	ı	30,282	42,562
Total energy consumption (Gj)	1,896,263	1,868,185	460,725	455,729	40,208	32,931	633,561	612,138	24,576	19,215	3,055,334	2,988,199
EN4-ENERGY CONSUMPTION OUTSIDE THE ORGANIZATION	JTSIDE THE O	RGANIZATIO	N									
Tenant terminal heating and cooling (GJ)	533,425	516,143	No data	No data	No data	No	412,511	417,119	0	0	945,936	933,262
<b>EN5-ENERGY INTENSITY</b>												
Energy/passenger (kJ/passenger)	35.61	32.87	17.09	16.03	129.97	116.88	17.80	16.32	N/A	N/A	26.31	24.29
<b>EN6-REDUCTION IN ENERGY CONSUMPTION</b>	NSUMPTION											
Energy Conserved (gJ)	1311.1	6120.0	138.1	0.0	96.2	720.0	12.6	0.0006	12.6	0.0	1570.5	15,840
<b>EN8-TOTAL WATER WITHDRAWAL BY SOURCE</b>	AL BY SOURCE											
Water Usage-Million Gallons	640.87	2,152.51	136.03	148.42	0.10		45.21	147.20	09.0	2.68	822.80	2,454
Water Usage-m3												

	JFK		FICA	A	SWF	li.	EWR	~	TEB	B	Total	
	2014	2015	2014	2015	2014	2015	2014	2015	2014	2015	2014	2015
EN15-20-GHG EMISSIONS												
Direct (Scope 1) GHG Emissions (tons CO2e)	15,659		6,705		1,295		18,443		845		42,949	
Emissions of Ozone Depleting Substances (tons CO2e)											0	
Indirect (Scope 2) GHG Emissions (tons CO2e)	41,462		11,048		1,041		37,191		1,145		91,887	
Indirect (Scope 3) GHG Emissions: Purchased thermal and electricity (tons CO2e)	130,133		26,984									
Indirect (Scope 3) GHG Emissions: Attracted Travel (tons CO2e)	422,332		286,013		5,348		331,794		1,327		1,046,814	
Indirect (Scope 3) GHG Emissions: Aircraft and GSE (tons CO2e)	883,642		422,066		34,484		495,947		71,653		1,907,792	
Indirect (Scope 3) GHG Emissions: Other Ground Access Vehicles	40,076		1,310		829		21,868		26		64,140	
Reduction of GHG Emissions (tons CO2e)											0	
Total GHG Emissions (tons CO2e)	1,533,305		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	95%		47%		100%		75%		N/A		76%	
Percentage of gates with gate power (400hz)	0/086		95%		100%		100%		N/A		0%86	
Average taxi-in time (mins)*	11.50	9.78	15.28	91.6	5.71	96.6	9.49	6.67			1	
Average Taxi-out Times (mins) *	21.43	28.06	18.46	23.35	14.13		17.23	20.65			1	

\* For 2014, taxi times only include domestic operations by major (non-regional) carriers. For 2015, Saab Sensis Aerobahn data is used for JFK, LGA, and EWR and includes all operations.

	JFK		LGA		SWF	ш	EWR	~	TEB	8	Total	al
	2014	2015	2014	2015	2014	2015	2014	2015	2014	2015	2014	2015
EN21: NOX, SOX, AND OTHER SIGNIFICANT AIR EMISSIONS	NIFICANT AI	R EMISSION	S									
SO <sub>2</sub> thousand kilograms	376.11		171.29		15.69		421.31		34.09		1,018.48	
NO <sub>x</sub> thousand kilograms	3,706.94		1,303.89		132.01		2,143.45		166.99		7,453.28	
PM <sub>2.5</sub> thousand kilograms	81.42		29.74		3.33		69.62		10.91		195.02	
PM <sub>10</sub> thousand kilograms	87.43		31.51		3.66		74.39		11.19		208.18	
A04-QUALITY OF STORMWATER BY REGULATORY STANDARDS	3Y REGULATO	ORY STANDA	RDS									
Sample Locations (number)	Ξ	12	3	3	15	9	3	3	2	2	34	26
Sample Frequency	Monthly	Monthly	Monthly	Month	Monthly	Monthly	Monthly	Monthly	Monthly	Monthly	0	
Incidences of non-compliance	-	2	2	0	0	0	0	-	-	1	4	4
A06-AIRCRAFT AND PAVEMENT DEICING/ANTI-ICING FLUID	EICING/ANT	I-ICING FLUI	D									
Aircraft Deicing Fluid Used as Neat Fluid, Thousand Gallons	3,028	3,694	260	096	26	37	2,447	2,363	175		997'9	7,054
Landside Deicing Solid used (Tons sodium chloride)	4,270		2,613		1	281	1		1	-	6,883	
Airfield Pavement Deicing Solid used (Tons of Sodium Acetate)	2,373	2,224	740	544	100	09	160	156	40	20	3,413	3,004
Airfield Pavement Deicing Fluid used (Gallons of Potassium Acetate)	1	1	100,733	113,402	54,328	37,800	799,346	868,910	344,355	344,518	1,298,762	1,364,630
Airfield Pavement Deicing Fluid used (Gallons of Propylene Glycol/Potassium Acetate)	218,716	226,326	1		1		1		1		218,716	226,326

	JFK	<u></u>	FCA	-	SWF	II.	EWR	~	TEB		Total	
	2014	2015	2014	2015	2014	2015	2014	2015	2014	2015	2014	2015
EN23-WASTE BY TYPE AND DISPOSAL METHOD	<b>DSAL METHO</b>	QC										
Waste for Landfill-Tons (JFK: yards)	13,217	7,127	1,112		159	172	3,189	4,672	170	174	'	
Waste for Incineration-Tons	1		1		1	1	1		1		1	
Waste for Recycling-Tons (JFK: yards)	2,061	6,183	312		17	18	157	226	13	29	1	
Waste for Composting-Tons	1		31		1	1	00	1	ı		1	
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		1	
Boundary for waste reporting			PA controlled	terminals, lands	ide areas, maint	enance, and ad	Iministrative area	as. LGA: termina	PA controlled terminals, landside areas, maintenance, and administrative areas. LGA: terminal B only reported for 2014	d for 2014		
G4-EN24: NUMBER AND VOLUME OF SIGNIFICANT SPILLS	OF SIGNIFIC	CANT SPILLS										
Number of spills	41	41	40	43	4	0	7	-	5	29	16	114
Total volume of spills (gallons)	13,090	952	1,375	1,207	107	1	2,665	20	261	325	17,498	2,504
G4-EN29-ENVIRONMENTAL FINES	10											
Monetary value of fines paid for non-compliance with environmental regulations and sanctions	❖	❖	₩	❖	₩.	❖	\$4,000.00	₩	<b>⋄</b>	₩	❖	❖
A07-NOISE IMPACTS												
Number of people residing within DNL 65	32,085	N/A***	5,209	N/A***	25	25	25,400	N/A***	089	089	63,399	N/A***
Percentage change of people residing within DNL 65*	0.00%	N/A***	0.00%	N/A***	0,000,0	1	0.00%	N/A***	0.00%	0,000%	0.00%	N/A***
Total noise complaints (EN34)	23,971	32,238	22,222	18,694	24	26	1,517	1,019	1,878	1,993	49,612	53,970
Number of complainants		1,107		1,442		3		110		216		2,878

		JFK		LGA	4	SWF	/F	EWR	/R	TEB	3	Total	
		2014	2015	2014	2015	2014	2015	2014	2015	2014	2015	2014	2015
A08-SOC	A08-SOCIETY IMPACTS												
Number or economica voluntarily airport ope a governm compensat	Number of persons physically or economically displaced, either voluntarily or involuntarily, by the airport operator or on its behalf by a governmental or other entity, and compensation provided	0	0	0	0	0	0	0	0	0	0	0	•
A09-WIL	A09-WILDLIFE IMPACTS												
Total wildlife strikes	ife strikes	221	256	259	280	18	10	111	212	88	92	<i>L</i> 69	834
Damaging	Damaging wildlife strikes	91	12	3	1	0	-	2	6	4	0	25	33
Total numb 10,000 airc	Total number of wildlife strikes per 10,000 aircraft movements	5.18	5.8	7.06	7.64	8.25	4.39	2.79	5.11	5.36	4.55	4.9	5.88
ADDITIO	ADDITIONAL PERFORMANCE METRICS	RICS											
VEHICLE	VEHICLE FLEETS (# OF VEHICLES, LIGHT AND HEAVY DUTY)	LIGHT AND	HEAVY DUTY										
Bifuel		4	80	0	7	0	0	2	2	0	0	9	17
Biodiesel		222	201	111	104	64	29	178	156	27	29	602	549
CNG		13	=	9	9	0	0	14	15	0	0	33	32
Electric		0	0	0	-	0	0	0	2	0	0	1	3
E-85		131	127	71	99	0	0	111	102	0	0	313	295
Gasoline		141	06	53	37	24	12	70	45	14	15	302	199
Hybrid		48	46	23	23	6		63	99	80	80	151	144
Hydrogen		0	0	0	0	0	0	0	0	0	0	1	•
	Subtotal Alternative Fuel Vehicles	418	393	211	206	73	70	368	331	35	37	1,105	1,037
	Total of all Vehicles	529	483	264	244	26	82	438	378	49	52	1,407	1,239
	Alternative Fuel % of Total	74.78%	81.37%	79.92%	84.43%	75.26%	85.37%	84.02%	87.57%	71.43%	71.15%	78.54%	78.54%

		JFK	~	FICA	A	SWF	Ł	EWR	œ	TEB		Total	al le
		2014	2015	2014	2015	2014	2015	2014	2015	2014	2015	2014	2015
VEHICLE ENERG	VEHICLE ENERGY CONSUMPTION												
Gasoline (gal)		43,709	13,508	15,730	14,568	49,967	47,741	36,741	27,760	11,428	890′9	157,575	109,645
Bifuel (gal)		243	1,061	1	1,878	1		1	1	0	0	243	2,939
Biodiesel (gal)		29,863	20,183	16,208	15,499	1		28,821	23,265	0	0	74,892	58,947
Diesel (gal)		1	1	ı	1	39,338	45,832	ı	1	9,189	12,974	48,527	58,806
E-85 (gal)		106,891	134,019	77,751	92,420	1		98,326	105,435	0	0	282,968	331,874
Gasoline-Hybrid vehicles (gal)	nides (gal)	23,669	22,023	10,858	11,455	5,727		27,227	186'61	789	2,628	68,270	26,087
CNG (88e)												0	•
AIRCRAFT FUEL	AIRCRAFT FUEL (MILLION GALLONS)	VS)											
Total fuel loaded on	Total fuel loaded onto aircraft (Jet A, gal)	1,466.38	1,521.99	249.19	257.81	3.90	6.17	16.799	90.289	39.10	44.14	2,426.48	2,513.17
AvGas (gal)		0.00	00.00	0.00	0.00	1.93	0.04	0.00	00.00	0.00	0.00	1.93	0.05
	TOTAL	1,466.38	1,522.00	249.19	257.81	5.84	6.22	167.91	90.289	39.10	44.14	2,428.41	2,513.22
Alternative aviation	Alternative aviation fuel consumed (gal)	0.00	00.00	0.00	0.00	0.00	0.00	0.00	00.00	0.00	0.00	0.00	0.00

## 14\ APPENDIX A

	JFK		LGA		SWF	II-	EWR	~	TEB	~	Total	le
	2014	2015	2014	2015	2014	2015	2014	2015	2014	2015	2014	2015
GROUND TRANSPORTATION												
Paid Parked Cars (thousands)	4,132.26	4,112.61	1,245.98	1,170.76	69.44	63.80	2,844.07	2,872.34	N/A	N/A	8,291.76	8,219.50
Taxi Dispatch Passengers (thousands)	3,270.03	3,327.22	3,693.70	3,012.44	0.58	0.41	977.29	881.16	N/A	N/A	7,786.48	7,221.23
Number of Bus Trips to Airport (commercial bus providers, thousands)	419.89	420.78	233.20	284.97	0.71	0.00	279.19	226.84	N/A	N/A	932.99	932.59
Number of Bus Trips to Airport (MTA and New Jersey Transit, estimated, thousands)	3,909.15		1,289.91	No data	N/A		335.18	283.09	Not Tracked		5,534.24	N/A
Number of AirTrain Trips (thousands)	6,371.78	7,130.41	N/A		N/A		2,176.32	2,545.23	N/A	N/A	8,548.10	9,675.64
Percentage of passengers using mass transit	24%	28%	18%	24%	0/09	%0	23%	28%	N/A	N/A	23%	26%
Percentage of PA employees using mass transit	29%		29%		0/00		7%		0/00	0%0	21%	

<sup>\* 2012</sup> contour vs. 2008 contour. Majority of the change is due to use of the 2010 census vs. 2000 census for previous contour.

<sup>\*\*</sup> EN3-Energy Consumption within the organization includes energy bills received by the Port Authority

<sup>\*\*\*</sup> Noise contours being developed as part of Part 150 studies. No numbers have been released as of publish date.

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

## 15\ APPENDIX B: GRI DISCLOSURES TABLE

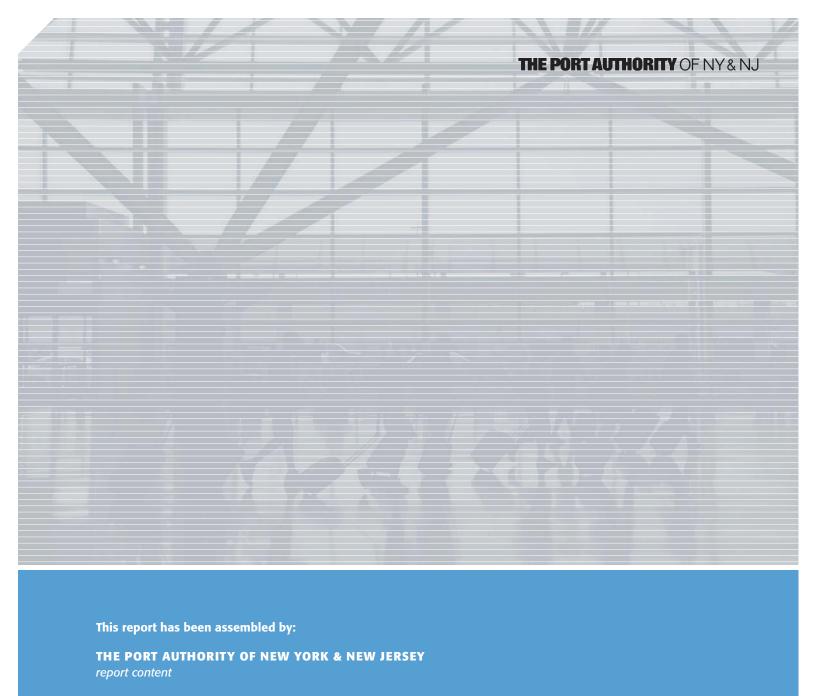
UKI AIKPUI	RT OPERATORS SECTOR DISCLOSURES	
INDICATOR		REPORT PAGE NUMBER
G4-1	Statement from most senior decision maker of the organization about the relevance of sustainability to the organization and its strategy	1
G4-2	Key Impacts, Risks, and Opportunities	10
G4-3	Name of the organization	Cover
G4-4	Primary Brands, Products, or Services; Report operational boundaries regarding services that may be provided by the reporting organization or by third parties.	2
G4-5	Location of the organization's headquarters	2
G4-6	Number of countries where the organization operates	2
G4-7	Nature of ownership and legal form	8
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.	3
G4-9	Scale of the reporting organization	8
	Number of employees	9
	Number of operations	3
	Net revenues	14
	Size of airport (acres)	4-6
	Number and length of runways	4-6
	Minimum connection time between flights	N/A
	Number of airlines served	3
	Number of destinations served	3
	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	<ul><li>Total number of employees by employment contract and gender</li><li>Total number of permanent employees by employment contract and gender</li></ul>	Not Reported
G4-11	Percentage of employees covered by collective bargaining agreements	Not Reported
G4-12	Describe the organization's supply chain	2
G4-13	Report significant changes during the reporting period to the organization's size, structure, ownership, or supply chain	2
G4-14	Report whether and how the precautionary approach or principle is addressed by the organization	2
G4-15	List externally developed economic, environmental and social charters, principles, or other initiatives to which the organization subscribes or it endorses	10
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	9
G4-17	<ul><li>a. List all entities included in the organization's consolidated financial statements or equivalent documents.</li><li>b. Report whether any entity included in the organization's consolidated financial statements or equivalent documents is not covered by the report.</li></ul>	8
G4-18	<ul><li>a. Explain the process for defining the report content and the Aspect Boundaries.</li><li>b. Explain how the organization has implemented the Reporting Principles for Defining Report Content.</li></ul>	2
G4-19	List all the material Aspects identified in the process for defining report content.	11-12
G4-20	<ul> <li>For each material Aspect, report the Aspect Boundary within the organization, as follows:</li> <li>Report whether the Aspect is material within the organization.</li> <li>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:</li> <li>The list of entities or groups of entities included in G4-17 for which the Aspect is not material or</li> <li>The list of entities or groups of entities included in G4-17 for which the Aspects is material</li> <li>Report any specific limitation regarding the Aspect Boundary within the organization.</li> </ul>	11-12
G4-21	<ul> <li>a. For each material Aspect, report the Aspect Boundary outside the organization, as follows:</li> <li>Report whether the Aspect is material outside of the organization.</li> <li>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.</li> <li>Report any specific limitation regarding the Aspect Boundary outside the organization.</li> </ul>	11-12
G4-22	a. Report the effect of any restatements of information provided in previous reports, and the reasons for such restatements.	2
G4-23	Report significant changes from previous reporting periods in the Scope and Aspect Boundaries.	2

INDICATOR		REPORT PAGE NUMBER
STAKEHOLDE	R ENGAGEMENT	
G4-24	Provide a list of stakeholder groups engaged by the organization.	9
G4-25	Report the basis for identification and selection of stakeholders with whom to engage.	9
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.	9
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.	28-29
REPORT PRO	FILE	
G4-28	Reporting period for information provided	2
G4-29	Date of most recent report	2
G4-30	Reporting cycle	2
G4-31	Contact point for questions regarding the report and its contents	2
G4-32	a. Report the 'in accordance' option the organization has chosen.	2
	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.	
G4-33	a. Report the organization's policy and current practice with regard to seeking external assurance for the report.	N/A
	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.	
G4-34	<ul> <li>Report the governance structure of the organization, including committees of the highest governance body.</li> </ul>	8-9
	<ul> <li>Identify any committees responsible for decision-making on economic, environmental and social impacts.</li> </ul>	
G4-56	Describe the organization's values, principles, standards and norms of behavior such as codes of conduct and codes of ethics.	8
G4-DMA	Economic	11
	Environmental	11-12
	Labor Practices and Decent Work	12
	Society	12

INDICATOR		REPORT PAGE NUMBER
ECONOMIC II	NDICATORS	
ECONOMIC PE	RFORMANCE	
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.	34
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	35
A03	Total amount of cargo tonnage.	35
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.	34
G4-EC4	Significant financial assistance received from government.	34
INDIRECT ECO	NOMIC IMPACTS	
G4-EC8	Significant indirect economic impacts, including the extent of impacts	35
ENVIRONMEI	NTAL INDICATORS	
ENERGY		
G4-EN3	Energy consumption within the organization	36
G4-EN4	Energy consumption outside the organization	Partially reported 36
G4-EN5	Energy Intensity	Partially reported 36
G4-EN6	Reduction of energy consumption	36
WATER		
G4-EN8	Total water withdrawal by source	36
G4-EN9	Water sources significantly affected by withdrawal of water	26
G4-EN10	Percentage and total volume of water recycled and reused	Not reported
INTER-MODAL	ITY	
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	30-31
EMISSIONS		
G4-EN15	Direct (Scope 1) GHG Emissions (tons CO2e)	37
G4-EN16	Indirect (Scope 2) GHG Emissions (tons CO2e)	37
G4-EN17	Scope 3 GHG Emissions (tons CO2e)	37
G4-EN18	GHG Emissions Intensity (tons CO2e/enplaned passenger)	37
G4-EN19	Reduction of GHG Emissions (tons CO2e)	Not reported
G4-EN20	Emissions of Ozone depleting substances (tons CO2e)	37

INDICATOR		REPORT PAGE NUMBER
AO5	Ambient air quality levels according to pollutant concentrations in microgram per m3 or parts per million (ppm) by regulatory regime	Not reporte
G4-EN21	NOx, SOx, and other significant air emissions	3.
EFFLUENTS AN	ID WASTE	
AO4	Quality of storm water by applicable regulatory standards.	38
AO6	Aircraft and pavement de-icing/anti-icing fluid used and treated by m3 and/or metric tonnes.	38
G4-EN23	Total weight of waste by type and disposal method.	39
G4-EN24	Total number and volume of significant spills.	39
COMPLIANCE		
G4-EN29	Monetary value of significant fines and total number of non-monetary sanctions for non-compliance with environmental laws and regulations.	39
ENVIRONMEN	TAL GRIEVANCE MECHANISMS	
G4-EN34	Number of grievances related to environmental impacts filed, addressed, and resolved through formal grievance mechanisms	39
NOISE		
AO7	Number and percentage change of people residing in areas affected by noise.	39
G4-SO11	Number of grievances on impacts to society filed, addressed and resolved through formal grievance mechanisms	39
A09	Total annual number of wildlife strikes per 10,000 aircraft movements	40
SOCIETY		
AO8	Number of persons physically or economically displaced, either voluntarily or involuntarily, by the airport operator or on its behalf by a governmental or other entity, and compensation provided	40



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