



**STEWART INTERNATIONAL AIRPORT**

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**SUSTAINABLE MANAGEMENT PLAN**

**2016**  
UPDATE



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### In 2010, Stewart International Airport (SWF) was one of the first airports in the country to develop a Sustainable Management Plan.

Developed directly following the Port Authority of New York and New Jersey's (Port Authority's) takeover of the facility in November 2007, the plan was intended to pilot new sustainability initiatives and ideas that would later be deployed at the Port Authority's other facilities.

Since the release of the Sustainable Management Plan in 2010, the Port Authority implemented several successful initiatives, such as the installation of smart metering, conducting energy retrofits in the terminal, deployment of green cleaning products, and an upgrade of the facility recycling program. After releasing a Sustainability Progress Report for SWF in 2012, the airport realized that it was time to update the original Sustainable Management Plan to align with the airport's overall business objective of becoming the greater New York region's low cost airport of choice. Through a series of workshops within the facility, the airport has updated its mission, guiding principles, and sustainability goals. Several new and exciting initiatives complement these goals, which the Port Authority will roll out over the next five to ten years.

The updated Sustainable Management Plan serves as a testament to the Port Authority's commitment to SWF and increasing the availability of low cost access to the New York/New Jersey region.

## MISSION AND GUIDING PRINCIPLES

The mission of Stewart International Airport is as follows:

- To develop the airport into an efficient, economical, and sustainable gateway for travelers and cargo accessing the New York Metropolitan Area
- To develop the airport into a vibrant airport that serves the needs of the residents and businesses in the New York Metropolitan Area
- To develop the airport so that it functions as an economic engine that promotes economic growth in the Hudson Valley region in a sustainable manner

This updated plan establishes the following guiding principles:

- **Stimulate air service** to make the New York Metropolitan Area accessible to a broader passenger base through low cost service and by attracting new entrant air carriers to the region
- Help to relieve congestion at other airports in the region and allow the New York metropolitan area to increase overall airport capacity
- Recognize the airport's potential for **aviation business development**; use the location of the airport to encourage sustainable business development in the area
- Increase connectivity between SWF and the New York metropolitan area
- Establish the airport as the **first choice travel option** for Hudson Valley residents
- Increase SWF brand recognition across the New York Metropolitan area, the Northeast United States, and the world
- Reduce the airport's **natural resource demands** and impacts on regional air and water quality
- Serve as an incubator for innovative Port Authority **pilot programs** to improve the airport experience and increase sustainability performance
- Develop **airport infrastructure** to attract carriers and encourage sustained, efficient, and profitable cargo and passenger operations

## 02 \ PORT AUTHORITY OF NY & NJ ORGANIZATIONAL OVERVIEW

Founded in 1921, the Port Authority of New York and New Jersey builds, operates, and maintains many of the most important transportation and trade infrastructure assets in the country.

The agency's network of aviation, ground, rail, and seaport facilities is among the busiest in the country, supporting more than 550,000 regional jobs, and generating more than \$23 billion in annual wages and \$80 billion in annual economic activity. The Port Authority also owns and manages the 16-acre World Trade Center site, where the 1,776-foot-tall One World Trade Center is now the tallest skyscraper in the Western Hemisphere. The Port Authority receives no tax revenue from either the State of New York or New Jersey or from the City of New York. The agency raises the necessary funds for the improvement, construction or acquisition of its facilities primarily on its own credit. The agency has almost 7,000 full time staff members. More than two-thirds of all employees are represented through collective bargaining agreements with the Port Authority.

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### MANAGEMENT AND GOVERNANCE

The Port Authority 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 of 1921, 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.

Of the twelve current commissioners, there is one minority member 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.

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 meeting. 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.

Trade unions represent more than two thirds of the Port Authority's 6,777 employees. Some of the major unions representing employees at the Port Authority are:

- 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

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 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

**MORE THAN  
558,000  
REGIONAL  
JOBS  
SUPPORTED**

**MORE THAN  
\$30 BILLION  
GENERATED  
IN ANNUAL  
WAGES**

**MORE THAN  
\$84 BILLION  
IN ANNUAL  
ECONOMIC  
ACTIVITY**

## PORT AUTHORITY BOARD OF COMMISSIONERS COMMITTEES

The board has several committees that ensure the delivery of results across key areas of the agency. Agency by-laws govern the board and all committees, which establish rules

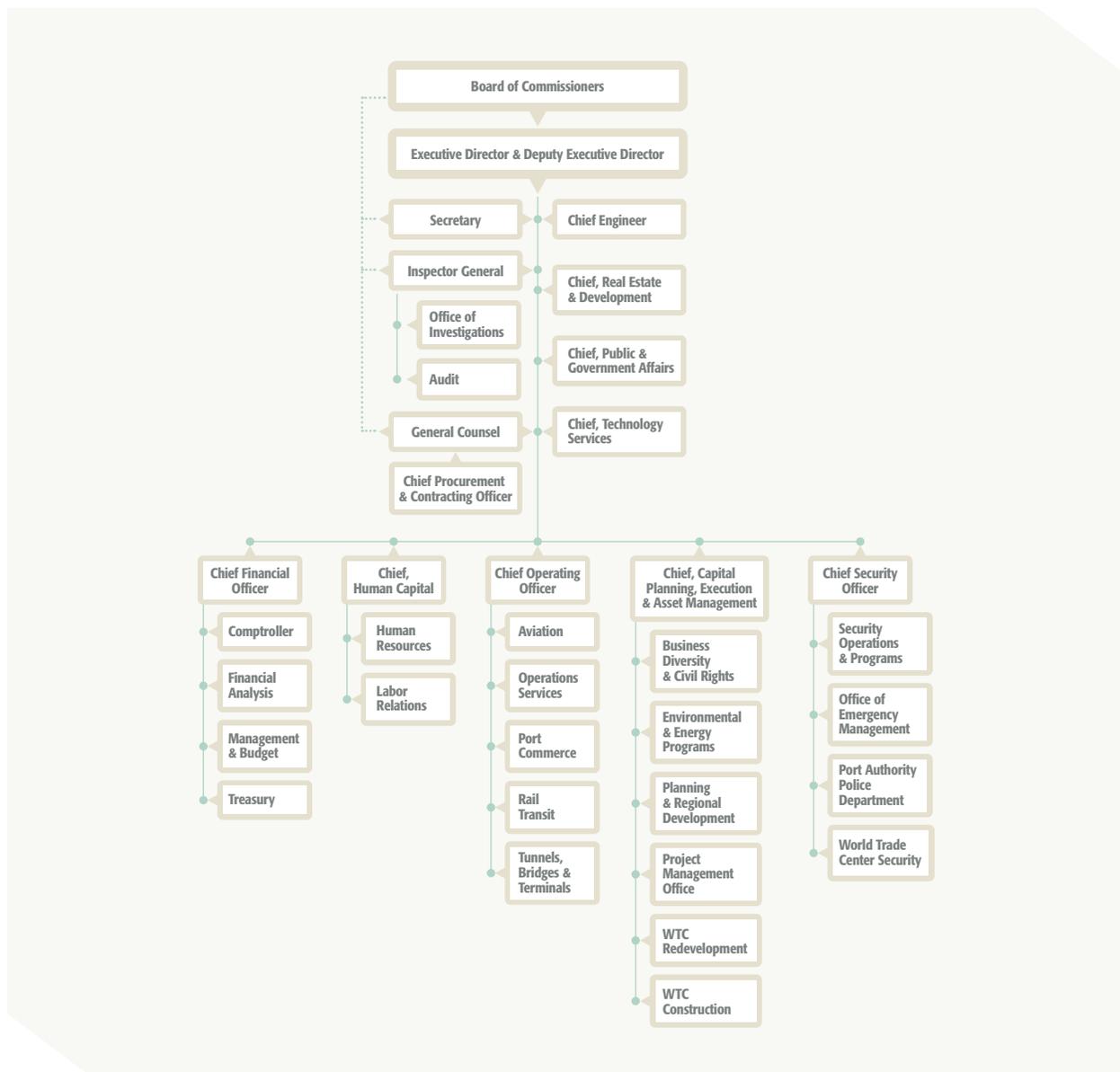
for operating the authority and board. The committees and their respective charters are listed below.

COMMITTEE	FUNCTION
<b>Audit</b>	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.
<b>Capital Planning, Execution, and Asset Management</b>	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.
<b>Finance</b>	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.
<b>Governance and Ethics</b>	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.
<b>Operations</b>	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.
<b>Security</b>	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 businesses. 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.



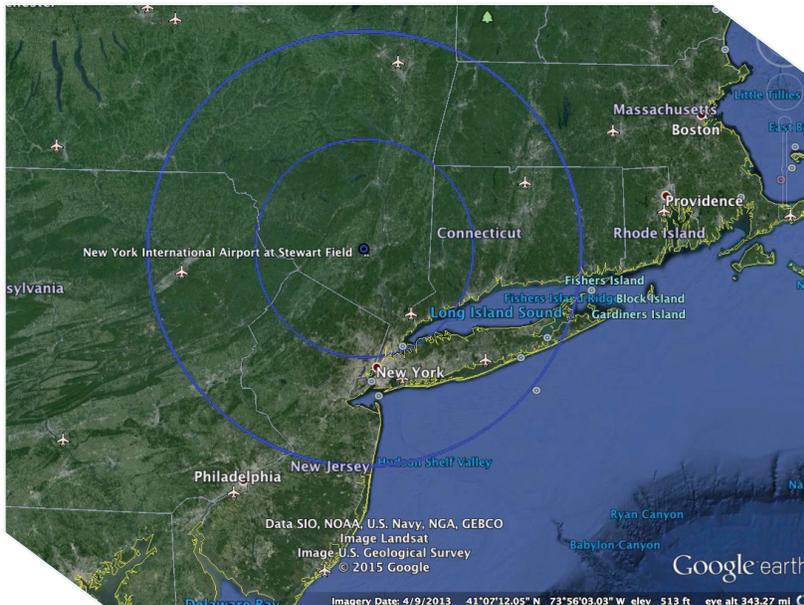
## 03\ ABOUT STEWART INTERNATIONAL AIRPORT

### The Port Authority has operated Stewart International Airport (SWF) since November 1, 2007.

In 2007, the Port Authority purchased the remaining 93 years of a 99-year operating lease for \$87.5 million. SWF is located in Newburgh and New Windsor, New York, at the intersection of the New York State Thruway (I-87) and Interstate 84. The airport is less than 60 miles north of New York City and within a 250-mile radius of Philadelphia, Baltimore, Washington, D.C., Buffalo, Boston, Toronto and Montreal. Ten Port Authority employees and approximately 40-50 personnel employed by the Airport's operational contractor, AFCO AvPorts Management, LLC, staff the airport.

SWF maintains compliance with the Federal Aviation Administration's (FAA) 14 CFR Part 139, as is required for an airport serving scheduled and unscheduled aircraft with more than 30 seats.





## SWF CATCHMENT AREA

SWF lies to the north of other Port Authority airports, in the Mid-Hudson Valley. The catchment area for the airport extends across the Hudson River east to Connecticut, and west to Northeastern Pennsylvania. The catchment area also encompasses the New York Metropolitan area.

## AIRPORT FACILITIES

SWF occupies 2,400 acres (9.71 square km) in the Mid-Hudson Valley of New York State.

Airport activity supports more than \$750 million in annual economic activity and more than 5,500 total jobs. The Port Authority has awarded more than half of its total capital investment to local firms and contractors. SWF has two runways—one is 11,817 feet (3,602 meters) long and the other is 6,004 feet (1,830 meters) long. Both are 150 feet (46 meters) wide. The SWF terminal features an expansive lobby with 38 check-in stations, an additional checkpoint lane, two Explosive Detection Systems (EDS) baggage-screening systems, and a Federal Inspection Service facility to process international arrivals efficiently. The terminal also includes seven passenger gates and boarding bridges, ticket counters, an electronic flight information display system, a spacious baggage claim area, and car rental agencies. The concourse features concessions, an ATM, and Wi-Fi service. The seven jetbridges make for easy transfers and connections, with 20-minute transfers possible.

SWF maintains 536,800 square feet of air cargo facilities. The airport handles a variety of cargo, from oversized freight to express packages to livestock. The airport is home to the New York Animal Import Center and FedEx. UPS also operates regularly scheduled flights at the airport. The U.S. Postal Service's mail facility for the mid-Hudson region and a USDA inspection facility are at the airport.

In addition to passenger and cargo facilities, the airport hosts a 250-acre Air National Guard Base, encompassing 36 buildings and 757,000 square feet of space. The 105th Airlift Wing is stationed on the base, operating nine C-17 Globemaster III aircraft. The Air National Guard, U.S. Army, and Active Guard and Reserve station approximately 810 personnel at the base on a full-time basis, along with over 3,000 temporary personnel at any given time.

There are two fixed-base operators at SWF hosting general aviation traffic.

The airport has several non-aeronautical uses. The following businesses maintain a presence on airport property:

- Anheuser-Busch Inbev
- Homewood Suites by Hilton
- USDA Animal Import Center
- U.S. Postal Service
- Federal Express
- American Express Company
- The Cessna Aircraft Company
- General Electric Company
- And many others

**MORE THAN  
\$750 MILLION  
IN ECONOMIC  
ACTIVITY**

**MORE THAN  
5,500  
TOTAL JOBS**

## AIRLINES AND DESTINATIONS



AIRLINE	DESTINATION	FREQUENCY (PER WEEK)
<b>JetBlue</b>	Orlando	7
<b>JetBlue</b>	Fort Lauderdale	7
<b>US Airways</b>	Philadelphia	19
<b>Delta</b>	Detroit	12
<b>Allegiant</b>	St. Petersburg-Clearwater	2

## CAPITAL INVESTMENT

In 1991, SWF became the first facility to receive \$5 million in funding under the FAA Military Airport Program for capital improvements to airports that were formerly military facilities or military/civil aircraft-use facilities.

That same year, the FAA awarded the airport a \$900,000 grant to fund a master plan update, conduct an environmental review and prepare a noise capability study. SWF also received \$13 million in federal funding for rehabilitation of its fuel farm, terminal-parking ramp, part of its taxiway system, and upgrades to its airside signage. The following year, SWF received another \$3 million from the FAA's Military Airport Program for terminal expansion. The airport instituted a passenger facility charge in 1995 to help fund capital projects. To accommodate cargo services, the airport opened a 50,000-square-foot air cargo building in 1990. In 2007, the Port Authority committed several million dollars for short-term projects, including taxiway improvements, parking lot expansion, and 200 additional new seats in the terminal. Upcoming plans include a new U.S. Customs station. In December 2011, the Port Authority Board of Commissioners approved a \$20 million expansion of the airport's passenger terminal. In May 2012, the Port Authority Board of Commissioners approved a \$143.5 million rehabilitation of both runways. In December, 2014, the full length of Runway 9-27 was reopened after a complete repaving.

## SUSTAINABILITY

In 2008, the Port Authority selected SWF as a prime location to test various strategies relating to sustainable management, energy efficiency, and innovative environmental strategies. The Port Authority subsequently wrote an Environmental Sustainability Plan for SWF, which the airport adopted in 2010. Airport stakeholders, community groups, and Port Authority agency staff developed the Sustainability Plan, which is available online.

To meet the mission and guiding principles, the Port Authority organized SWF's 2016 Sustainability Update by the following categories and associated goals. Each section details initiatives to help the airport meet the goals detailed below.

NUMBER OF  
**Passengers**

**320,682**



CATEGORY	GOAL
<b>Air Service Development</b>	Increase marketing efforts and remove barriers for increased air service and passenger traffic
<b>Air Quality and Greenhouse Gases</b>	Minimize SWF's contribution to climate change, air pollution, and depletion of the ozone layer
<b>World-Class Infrastructure</b>	Leverage SWF's physical assets to grow the Hudson Valley's economy and create new employment opportunities at the airport
<b>Healthy Buildings</b>	Provide a healthy environment for employees, passengers, and retail customers at SWF
<b>Community Outreach</b>	Create economic, educational, and recreational opportunities for Hudson Valley residents and businesses at SWF
<b>Water Quality and Conservation</b>	Reduce airport impacts on the Moodna Creek Drainage Basin, Quassaick Creek, and the Beaver Dam Lake Watershed
<b>Solid Waste Management</b>	Minimize non-recyclable waste generated at SWF





## 04\ AIR SERVICE DEVELOPMENT

After peaking at over 900,000 passengers in 2007, the economic downturn and airline industry consolidation took a toll on passenger traffic in subsequent years.

In 2013, 320,682 passengers travelled through SWF. However, due to air service incentives implemented in 2012, SWF attracted Allegiant Airlines to start service to St. Petersburg/Clearwater in Florida in 2013.

SWF's air service development focuses on three client bases: the local client base from the Mid-Hudson Valley, low-cost leisure travelers wishing to access the New York Metropolitan Area, as well as opening up more consistent and reliable service for business passengers accessing the region.

Almost two million people live within SWF's Hudson Valley catchment area, and there is significant potential for the development of service for residents of the Mid-Hudson Valley. There is also potential to develop service that brings leisure travelers to the Mid-Hudson Valley. SWF is a gateway to Hudson Valley wine country, the Catskill Mountains, cultural attractions along the Hudson River, and the Woodbury Commons shopping outlets, which are international destinations in themselves. Through this plan, the Port Authority intends to connect airport travelers with the region's cultural and culinary assets and foster greater community connections between the airport and the Mid-Hudson Valley.

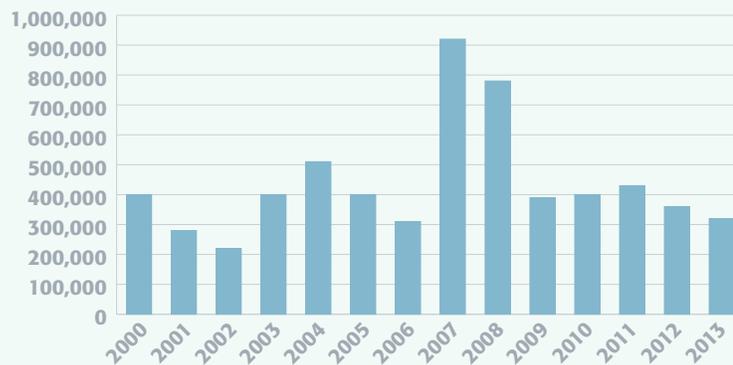
SWF has the potential to develop as the New York metropolitan region's low-cost alternative, making it an attractive option for both business and leisure travelers wishing to access the region. Increased bus services to New York City would help to expand the airport's catchment area and attract airlines seeking to access the New York City market.

SWF's airfield and terminal resources can support a much greater number of flights and passengers than today. With a Customs and Border Patrol Federal Inspection Facility (FIS), SWF can handle international arrivals. The Port Authority has plans to expand the FIS in order to have the ability to process more international arrivals in the future. The Port Authority's principal international airports, EWR and JFK, have caps on operations as a result of the FAA's Slot Management Rule. As a result, international air service to these airports is limited and not all carriers that wish to are able to serve the New York Metropolitan Area. SWF is positioned to accept new entrant carriers who may not be able to obtain slots at JFK or EWR in a cost effective manner. Operations into SWF can be achieved on a much lower cost basis than at the Port Authority's principal international airports.



## PERFORMANCE METRICS

### SWF Passenger Totals



## GOAL, TARGETS, AND INITIATIVES

### GOAL

**INCREASE MARKETING EFFORTS AND REMOVE BARRIERS FOR INCREASED AIR SERVICE AND PASSENGER AND CARGO TRAFFIC**

### TARGETS

- Increase the visibility of SWF as a destination through communications to airlines and passengers in potential destination cities
- Increase the number of social media outreach campaigns to potential airport customers
- Hold events, such as the New York Air Show, that introduce additional stakeholders to SWF

### INITIATIVES

#### COMPLETED

- Air service incentive program implemented in 2010 and extended in 2012
- Local advertising ongoing
- Dedicated air service development staff attend major air service development conferences and promote the airport at local events
- Hosted the 2015 New York Air Show

#### FUTURE

- Partner with local universities/shopping centers to time shuttle service with arriving flights
- Social media outreach to area universities
- Twitter feed that pushes flight deals to the public
- Social media campaign for international service



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## INITIATIVE DESCRIPTIONS

### **Partner with local universities/shopping centers to time shuttle service with arriving flights**

Currently, the only bus routes into the airport connect SWF to the Beacon Metro-North Station and the Port Authority Bus Terminal. There are opportunities to increase the use of SWF by visitors to Woodbury Commons outlets and West Point with properly timed shuttles jointly marketed with airlines. This action item would spur discussions with airlines and other partners to discuss marketing promotions.

### **Twitter feed that pushes flight deals to the public**

Currently, there is a flight deals feed on the SWF website, but no dedicated twitter account for SWF. A dedicated twitter account would allow the Port Authority to target potential SWF customers, such as Hudson Valley businesses and universities, highlight parking rates, flight deals, and more.

### **Social media outreach to area universities**

There are almost 40,000 students attending four-year universities in the Hudson Valley region. SWF provides a convenient alternative to the larger metropolitan airports for student travel, due to affordable parking options and accessibility. The marketing department will launch a marketing push with area universities through social media to position SWF as the preferred airport choice for area university students.

### **Social media campaign for international service**

The Port Authority has been working to attract international service to SWF for several years, most recently in the form of niche, boutique carriers servicing primarily leisure markets. There is a demand in the Hudson Valley for leisure oriented international service, and there is an opening for the Port Authority to leverage demand in the form of a social media campaign.

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**THE PORT AUTHORITY INTENDS TO  
CONNECT AIRPORT TRAVELERS  
WITH THE REGION'S CULTURAL AND CULINARY ASSETS AND  
FOSTER GREATER COMMUNITY CONNECTIONS  
BETWEEN THE AIRPORT AND THE MID-HUDSON VALLEY**

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## 05\ AIR QUALITY AND GREENHOUSE GASES

### In keeping with the Port Authority Sustainability Policy, reducing on-airport Greenhouse Gas (GHG) emissions is a top priority at SWF.

The airport realizes that escalating energy costs pose a threat to the competitiveness of all airports. The 2010 Sustainable Management Plan identified initiatives to help reduce energy use on the airport.

SWF completed a comprehensive GHG inventory in 2009, which breaks down the major sources of GHG emissions on the airport. The majority of GHG emissions come from aircraft (taxi, take-off, and landing); and from passengers and employees travelling to and from the airport. The Port Authority does not control either of these emission sources. However, through agency-wide efforts working with airlines on adoption of advanced aviation biofuels and through participation in the West of Hudson Regional Transit Access Study (the Metropolitan Transportation Authority (MTA)'s study to find better transit solutions), the Port Authority is constantly evaluating innovative solutions in these areas.

The Port Authority's main energy cost drivers are building energy use (natural gas and electricity); and fleet vehicle use (gasoline and diesel).

The airport has saved \$54,000 in utility costs due to the completion of a lighting retrofit. The airport installed energy efficient lighting in four buildings on the airport in partnership with the airport's utility, Central Hudson. In 2013, the Port Authority also implemented the recommendations from an Investment Grade Energy Audit completed in 2012. These improvements include additional lighting retrofits, HVAC improvements, and soon, installation of a small solar array on the terminal building.

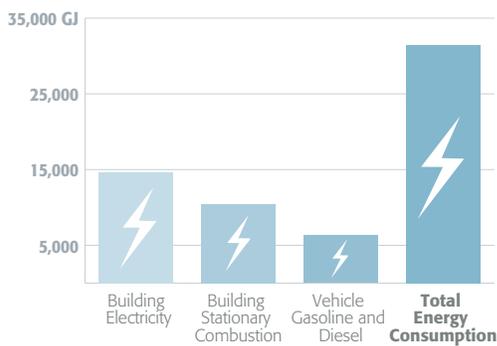
In 2008, the Port Authority recognized that climate change posed a severe risk to its facilities and included adaptation efforts as a mandate under its 2008 Sustainability Policy. Since then, the Port Authority has participated in the New York City Sea Level Rise Task Force and has applied lessons learned from Hurricanes Irene and Sandy to all capital planning efforts. The Port Authority has conducted targeted quantitative risk analysis on vulnerable facilities to prioritize resiliency measures.



Sea level rise does not pose a risk at SWF, which lies at an elevation of approximately 450 feet. However, Hurricane Irene’s precipitation was particularly devastating to the Catskills and Upper Hudson Valley, and was a reminder that climate change risks are prevalent everywhere.

The Port Authority recognized the strategic importance of SWF’s location during Superstorm Sandy. With airports closed in New York City and coastal New Jersey, SWF was the staging area for relief teams from around the country. SWF remained open throughout the storm and served as a critical lifeline to the New York City area. The Port Authority sees an opportunity for SWF to serve as an amplified disaster relief center. Ample ramp and taxiway space, long runways capable of handling any type of aircraft, and easy access to roadways position SWF to serve as a reliever during the stronger storms expected in the region’s future.

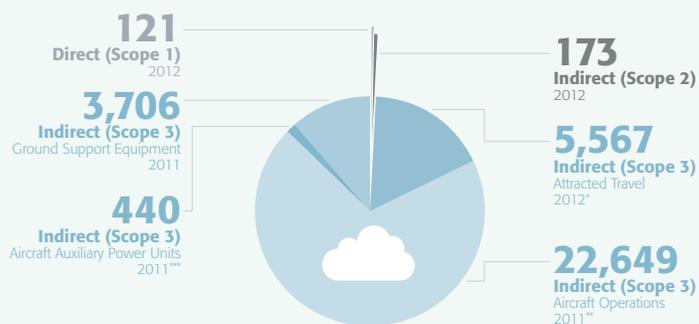
### AIRPORT Energy Use



### PERFORMANCE METRICS

#### GREENHOUSE Gas Emissions

TONS CO<sub>2</sub>e



\* Attracted travel includes passenger travel to and from airport.  
\*\* Aircraft Operations includes aircraft idling, landings and takeoffs, taxiing, and flights up to 3,000 feet AGL.  
\*\*\* 2011 and 2012 are the most recent years for which data are available.



**GOAL, TARGETS, AND INITIATIVES**

**GOAL**

**MINIMIZE SWF'S CONTRIBUTION TO CLIMATE CHANGE, AIR POLLUTION, AND THE DEPLETION OF THE OZONE LAYER**

**TARGETS**

- Meet targets consistent with Port Authority Sustainability Policy
- Identify continuous improvements that reduce GHG emissions from daily activities

**INITIATIVES**

**COMPLETED**

- Create preferred parking for alternative fuel/hybrid vehicles
- Include SWF facilities in multi-facility performance-based energy services process
- Install more energy efficient lighting
- Replace roofing with high albedo material

**FUTURE**

- Explore solar-powered electric vehicle charging station
- Develop sustainability requirements for airport construction projects
- Consider per-mile carbon emissions and costs for all new vehicle purchases
- Investigate ground power for hardstands
- Brush clearing using domestic animals
- Identify all efficiency opportunities for new Foreign Inspection Service (FIS)
- Electric ground service equipment (GSE) charging stations
- Airfield lighting and signage efficiency improvements
- Explore feasibility of airport micro-grid and redundancy options for airport power supply

**IN 2008, THE PORT AUTHORITY RECOGNIZED THAT CLIMATE CHANGE POSED A SEVERE RISK TO ITS FACILITIES AND INCLUDED ADAPTATION EFFORTS AS A MANDATE UNDER ITS 2008 SUSTAINABILITY POLICY.**



## INITIATIVE DESCRIPTIONS

### Explore solar-powered electric vehicle charging station

Currently, there are no charging stations available for customers driving electric vehicles. SWF is searching for opportunities to bring electric service to the parking lot via solar installations, and connect solar power to an electric vehicle charging station.

### Consider per-mile carbon emissions and costs for all new vehicle purchases

SWF has purchased hybrid or alternative fuel vehicles (AFVs) for most of its light duty fleet. This initiative will establish a step in the vehicle buying process where the purchasing party will evaluate the per-mile operating cost and carbon footprint of vehicle(s) before purchase. This will help the airport make informed purchasing decisions and avoid instances of purchasing an alternative fuel vehicle for the sake of owning an AFV, and instead make the best financial and environmental decision.

### Develop sustainability requirements for airport construction projects

Currently, all airport construction completed by the Port Authority must conform to the Port Authority's Sustainable Design Guidelines, and tenant buildings must conform to the Port Authority's Sustainable Building Guidelines. This initiative would institute a formal Quality Assurance (QA) process at the airport to ensure that all contractors are abiding by these requirements.

### Investigate ground power for hardstands

There are several hardstand positions for cargo aircraft at SWF. FedEx and UPS have several weekly frequencies to SWF. The Port Authority will initiate discussions with cargo carriers to understand the extent of Auxiliary Power Unit (APU) use in their aircraft at SWF and whether the availability of 400hz ground power at hardstands would alleviate APU use, improving local air quality and decreasing fuel use.

**THE PORT AUTHORITY  
IS EAGER TO INCREASE  
ENERGY RESILIENCY  
AND REDUNDANCY  
OPTIONS AT STEWART  
THROUGH THE  
DEPLOYMENT OF  
SMART,  
LOW-CARBON  
SOLUTIONS  
TO ENERGY  
MANAGEMENT**



### **Brush clearing using domestic animals**

There are several areas of dense brush around SWF. Clearing the brush is time consuming and labor-intensive, as operating powered equipment can be difficult. Some airports, including San Francisco International Airport and Chicago O’Hare International, have deployed grazing animals to clear brush and to provide a gasoline and labor free way of performing grounds maintenance. A similar program at SWF could support local business, while providing pasture for livestock.

### **Airfield lighting and signage efficiency improvements**

Over the past several years, the Port Authority has advanced lighting specifications for the airfield, and now almost all new lighting on the airside is comprised of energy efficient light-emitting diodes (LEDs) by default. LED lighting requires less maintenance due to a longer bulb life and consumes less electricity than standard incandescent lighting. SWF will work proactively to ensure that new lighting conforms to the latest efficiency standards and will work with the Aviation Department to advocate for expanded LED lighting applications on the airfield.

### **Identify all efficiency opportunities for new Foreign Inspection Service Facility (FIS)**

In 2011, the Office of Environmental and Energy Programs (OEEP) contracted with NYSERDA to conduct an energy efficiency evaluation of the planned FIS addition to the terminal building, to maximize efficiency in the building design. As design starts up for the next phase of this project, OEEP will work with the airport and potentially New York State Energy Research and Development Authority (NYSERDA) to ensure that the building is maximizing all energy efficiency opportunities.



*SWF Passenger Terminal Exterior*

### **Electric GSE charging stations**

Four airlines operate out of the terminal at SWF: Delta, US Airways (now American Airlines), Allegiant Air and JetBlue. None of the baggage tugs, belt loaders, pushback tugs, or other ground service equipment (GSE) are currently powered by electricity, as there are no charging stations available for such equipment. The Port Authority will work with the airlines to investigate outside funding mechanisms for the installation of charging infrastructure and purchase of electric GSE.

### **Explore feasibility of airport micro-grid and redundancy options for airport power supply**

The Port Authority is eager to increase energy resiliency and redundancy options at Stewart through the deployment of smart, low-carbon solutions to energy management. In partnership with Central Hudson, the airport’s utility, the Port Authority will explore options such as solar, battery, and natural gas backup to electricity supply at the airport in order to reduce peak electricity demand and increase the ability for the airport to operate during extended periods of power outage.

## 06 \ WORLD-CLASS INFRASTRUCTURE

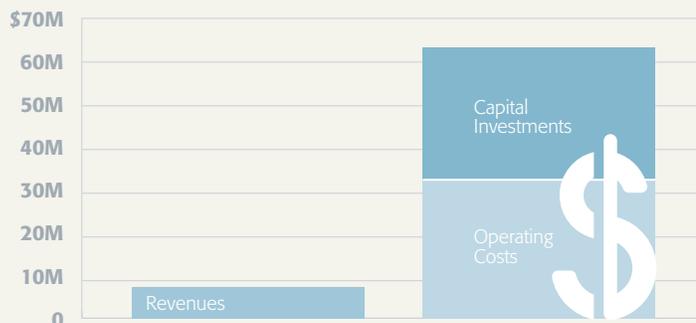
### SWF plays a vital role in the economy of the Mid-Hudson Valley.

In addition to hosting and supporting a crucial Air National Guard base and several on-site businesses, the airport serves as a gateway for those looking for an easier travel experience than that offered by the “big three” airports: John F. Kennedy, LaGuardia, and Newark Liberty International. Airport activity supports more than \$750 million in annual economic activity and more than 5,500 total jobs.

When the Port Authority took over SWF’s lease in 2007, it committed to investing \$500 million in the airport. That work includes a terminal expansion to accommodate a permanent Foreign Inspection Service (FIS) facility; rehabilitating both runways; and ensuring that the airport is ready to receive the next generation of travelers. The capital projects will support economic growth, job creation, and sustained quality of life in the Hudson Valley.

#### PERFORMANCE METRICS

##### AIRPORT Finances





## GOAL, TARGETS, AND INITIATIVES

### GOAL

**LEVERAGE SWF'S PHYSICAL ASSETS TO GROW THE HUDSON VALLEY'S ECONOMY AND CREATE NEW EMPLOYMENT OPPORTUNITIES AT THE AIRPORT**

### TARGETS

- Grow SWF's revenues to increase airport self sufficiency and sustainability
- Maintain physical infrastructure at SWF to best serve the core mission of the airport
- Use best available sustainability strategies when building out infrastructure to minimize ongoing operational costs

### INITIATIVES

#### FUTURE

- Explore creative financing methods for infrastructure repair and development
- Solar street lighting in industrial park
- Study to develop inventory of wetland areas
- Conduct a feasibility analysis for a district geothermal heating system at development sites
- Consolidated rental car Quick Turn Area (QTA)
- Solar powered wayfinding signage/directory to tenant areas
- Construct an airport travel plaza with sustainable, multiple fuel filling station

## INITIATIVE DESCRIPTIONS

### Study to develop inventory of wetland areas

SWF has several developable properties that may be in wetlands, hampering the ability to proceed with development. This study will focus on a three-step approach: (1) Mapping wetlands on SWF property; (2) Understanding the history and content of any existing mapping, and (3) overlying wetland mapping on buildable property to understand the constraints with development of land.

### Explore creative financing methods for infrastructure repair and development

Water and sewer repairs can be costly at the airport and involve many stakeholders. This action will involve exploring financing methods such as a water purchase agreement to treat and reuse water on-site for Port Authority and tenant purposes, to reduce strain on the water and sewer system.



**Solar street lighting in industrial park**

There is currently a lack of street lighting in SWF’s industrial park and along the new cargo road. The airport would like to investigate carbon-neutral methods of introducing street lighting to these areas. This initiative could involve developing a Request for Information (RFI) to understand the general cost of installing solar-powered street lighting in these areas.

**Conduct a feasibility analysis for a district geothermal heating system for development sites**

Geothermal systems can significantly lower the operating costs of buildings and could attract cost-conscious tenants to the airport.

**Consolidated Rental Car Quick Turn Area**

All rental cars processed at SWF use individual QTAs that do not provide optimum resource efficiency. QTAs allow rental car companies to wash, fuel, and service vehicles. Rental cars have to be taken to remote facilities between rentals, which increases fuel use and staff time. A consolidated QTA would reduce the amount of on-airport driving and improve convenience for passengers.

**Construct an airport travel plaza with sustainable, multiple fuel filling station**

SWF sits at a very busy crossroads in Orange County between Routes 17K, 207, 747, 32, and 300; as well as I-87 and I-84. The airport does not have an on-site rest stop or fueling station. Additionally, it does not have the array of sustainable fuels available at other Port Authority airports such as Compressed Natural Gas — and biodiesel. A travel plaza could provide a sustainable fueling source for Port Authority and tenant vehicles, as well as a revenue stream to the airport by attracting traffic that normally would not stop and spend money on airport property.

**Solar powered wayfinding signage/directory to tenant areas**

At certain decision points on the airport, it is difficult to find specific buildings or tenants. A solar powered wayfinding board would help motorists enter the airport without needing an electrical connection or connecting to grid power.



SWF Airfield

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**AIRPORT ACTIVITY  
SUPPORTS  
MORE THAN  
\$750 MILLION  
IN ANNUAL  
ECONOMIC  
ACTIVITY  
AND MORE THAN  
5,500 TOTAL JOBS.**

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## 07\ HEALTHY BUILDINGS

SWF was the first Port Authority facility to adopt green cleaning products as its main cleaning agents for the terminal building in 2012.

The three principal cleaning agents for the terminal are Green Seal Certified and provide a healthier environment for employees and passengers. Janitorial staff are trained to use proper dispensing processes for cleaning products in order to use the correct amount of product for the intended application.

Proper use of cleaning products and practices helps reduce the presence of allergens and pollutants in buildings. Additionally, the control of tobacco smoke around building areas and reduction of vehicle and aircraft engine use near building entrances helps improve Indoor Air Quality (IAQ).

The Leadership in Energy and Environmental Design (LEED) standard sets strict protocols for the control of IAQ and Environmental Tobacco Smoke Control. The Port Authority has voluntarily adopted these standards at its buildings at SWF. Furthermore, the Port Authority intends to educate tenants on the IAQ standards so that tenants can adopt them airport wide. The Port Authority also adopts IAQ standards for renovations with the *Sustainable Building Guidelines*.



## GOAL, TARGETS, AND INITIATIVES

### GOAL

**PROVIDE A HEALTHY ENVIRONMENT FOR EMPLOYEES, PASSENGERS, AND RETAIL CUSTOMERS AT SWF**

### TARGETS

- Conduct maintenance and janitorial activities in a way that minimizes employee and passenger exposure to elevated levels of CO<sub>2</sub>, VOCs, and other indoor pollutants.

### INITIATIVES

#### COMPLETED

- Major cleaning agents in SWF terminal are Green Seal Certified
- IAQ Management Plan communicated to SWF janitorial vendor

#### FUTURE

- Implement LEED policies airport wide
- Certify SWF terminal to LEED: Operations and Maintenance

## INITIATIVE DESCRIPTIONS

### Implement LEED policies airport wide

The Port Authority has assembled policies for the terminal building that are consistent with LEED standards for water management, recycling, green cleaning, indoor air quality management, and pest management. The Port Authority has implemented these policies on a progressive basis within the facilities they manage. This initiative would expand the applicability of LEED policies to cover other spaces on the airport.

### Certify SWF Terminal to LEED: Operations and Maintenance (O&M)

LEED: O&M provides third party verification that the operations and maintenance of a building benefits the environment and human health. Since switching to green cleaning products in 2012 and after a major energy efficiency retrofit, the terminal meets many of the specifications within the LEED: O&M rating system. Once the terminal qualifies for the energy prerequisites specified in the rating system, the Authority plans to begin the certification process.

**THE LEADERSHIP IN ENERGY AND ENVIRONMENTAL DESIGN (LEED) STANDARD SETS STRICT PROTOCOLS FOR THE CONTROL OF IAQ AND ENVIRONMENTAL TOBACCO SMOKE CONTROL.**



## 08\ COMMUNITY OUTREACH

When the Port Authority assumed control of operations at SWF in 2007, it recognized SWF's important role in the local community and economy.

The airport serves as a vital transportation and economic hub to the Mid-Hudson Valley. There are several businesses domiciled at the airport that employ Hudson Valley residents, and the Port Authority's investment in airport infrastructure has created jobs for the local community

### GOAL, TARGETS, AND INITIATIVES

#### GOAL

**CREATE ECONOMIC, EDUCATIONAL, AND RECREATIONAL OPPORTUNITIES FOR HUDSON VALLEY RESIDENTS AND BUSINESSES AT SWF**

#### TARGETS

- Increase the percentage of Hudson Valley residents that are aware of what SWF has to offer
- Increase the number of local businesses that have a presence on SWF
- Increase the number of airport users that are not airline passengers



## INITIATIVES

### COMPLETED

- Prepare annual sustainability report card showcasing SWF initiatives
- Appoint an SWF Sustainability Officer
- Continue to participate and collaborate with local and regional businesses
- School outreach days/field trip promotion

### FUTURE

- Carbon offsetting kiosk that invests in local green projects
- Sustainable and local food program/“Pop-up” stores in terminal highlighting Hudson Valley stores

### INITIATIVE DESCRIPTIONS

#### **Sustainable and Local Food program/“Pop-up” stores in terminal highlighting Hudson Valley stores**

The Hudson Valley is an epicenter for local, sustainable food production. SWF plans to integrate local and sustainable options into its concession offerings. There are several strategies for increasing the amount of local options, including: (1) Pop-up stores/stands in the terminals for local vendors that change seasonally; (2) working with the concession company to bring in a local restaurant or brewery to serve as the primary terminal restaurant, and (3) integrating local products into current food offerings.

#### **Carbon offsetting kiosk that invests in local projects**

Many airports host carbon-offsetting kiosks where passengers can offset the carbon emissions from their trips. However, most of the beneficiary projects from these payments do not make it back into the passengers’ community. SWF will explore hosting a kiosk that invests directly back into Hudson Valley focused projects, keeping passenger dollars local.

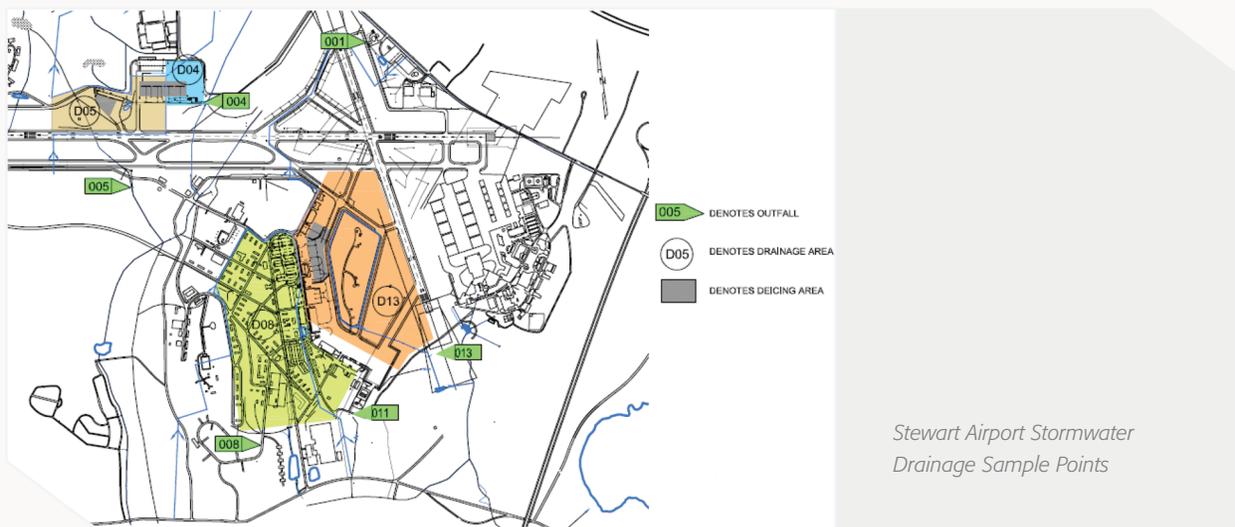
**STEWART SERVES AS  
A VITAL TRANSPORTATION AND ECONOMIC HUB  
TO THE MID-HUDSON VALLEY**

## 09\ WATER QUALITY AND CONSERVATION

SWF lies within the Moodna Creek drainage basin. Surface water at SWF generally flows in a southeasterly direction.

Drury Lane Creek and Gillick Brook drain the western and central portions of SWF, and the area north of Runway 9-27. Drury Lane Creek and Gillick Brook come together to flow into Beaver Dam Lake, which flows into Moodna Creek. A small part of the far eastern portion drains to Quassaick Creek, while most of the eastern portion of the Airport drains into two unnamed tributaries of Silver Stream. Those tributaries then flow to Moodna Creek, and ultimately the Hudson River.

Potential surface water pollutants at SWF include Jet A fuel, Avgas, gasoline, diesel fuel, kerosene, lubricating and fuel oils, deicing fluid (propylene glycol, potassium acetate, and urea), solvents, paint, cleaning agents, herbicides, pesticides, and heavy metals. Facility staff handles hazardous materials in ways that minimize risk to surface water. There are controls in place to protect surface water in the event of an inadvertent release of hazardous materials to the stormwater system.



Stormwater discharge prevention and watershed management is under the jurisdiction of the New York State Department of Environmental Conservation through the State Pollutant Discharge Elimination System (SPDES) program. In January 2007, SWF was issued an individual permit, which covers the portions of the SWF property that are under the entire or partial operation of the Port Authority, including aviation and non-aviation tenants. Two of the airport tenants, Air National Guard and Metal Container Corporation, maintain their own SPDES permit for outfalls whose drainage areas are encompassed entirely within their leased portions of the airport. The permit was originally issued for five years and was renewed in 2012 for coverage through the end of 2016.

SWF and its tenants operating under this permit are required to comply with the provisions set forth by the permit, which includes wet weather water quality sampling, visual

inspections of outfalls, and preparation and implementation of a Best Management Practices (BMP) Plan and a Storm Water Pollution Prevention Plan (SWPPP).

Surface water samples are collected monthly at six locations around the airport including from oil/water separators at the airport's two fuel storage farms, and various outfalls, streams and surface waters. Since 1995, staff or their contractors have collected surface water samples monthly from these locations and tested for oil and grease, Biological Oxygen Demand (BOD), Total Suspended Solids (TSS), total nitrogen, and field parameters including pH, dissolved oxygen (DO) and flow. Additional parameters are sampled quarterly including methyl tertiary butyl ether (MTBE) and benzene, toluene, ethylbenzene, xylene (BTEX) compounds or seasonally during deicing months for glycols.

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## BEST MANAGEMENT PRACTICES PLAN (BMPP)

The 2010 Best Management Practices Plan (BMPP) details strategies for preventing the contamination of stormwater at SWF. The BMPs implemented at SWF cover the following activities:

- Aircraft deicing
- Aircraft maintenance
- Aircraft washdown
- Fueling
- Significant materials storage
- Painting
- Pavement deicing/anti-icing
- Rubber removal
- Salt storage
- Tank loading and unloading
- Vehicle maintenance
- Vehicle washdown

For the above activities, the following protocols and teams are established:

- Pollution prevention team
- Reporting of BMP incidents
- Risk identification and assessment
- Employee training
- Inspections and records
- Security
- Preventative maintenance
- Good housekeeping
- Materials/waste handling, storage, and compatibility
- Spill prevention and response
- Erosion and sediment control
- Management of runoff
- Street sweeping

### WATER CONSERVATION

Orange County faces several challenges related to water supply. The Orange County Water Authority has conducted extensive research on the Moodna Creek Watershed and has determined that the water supply will not keep pace with expected growth in Orange County over the coming decades. The airport recognizes its role in advancing water conservation efforts. As such, it made water conservation a top priority of the Sustainability Plan in 2010. Since then, the airport completed a restroom and pantry water use audit and determined that the terminal's water use lays 39% above the IPC/UPC baseline, due to use of older faucet aerators in restroom sinks in the terminal. In 2013, the airport replaced all 2.0GPM faucets with IPC/UPC compliant 0.5GPM faucets.



*Mowing Activities on SWF Airfield*

### PERFORMANCE METRICS

#### Water Quality SAMPLING



**15** SAMPLE LOCATIONS  
Locations

**0** INCIDENTS  
Non-Compliance



**MONTHLY**  
SAMPLE Frequency

#### AIRPORT Water Use



**1,281,164**  
Gallons





## GOAL, TARGETS, AND INITIATIVES

### GOAL

**REDUCE AIRPORT IMPACTS ON THE MOODNA CREEK DRAINAGE BASIN, QUASSAICK CREEK AND THE BEAVER DAM LAKE WATERSHED**

### TARGETS

- Maximize water use efficiency within buildings and reduce potable water consumption as opportunities become available
- Seek to identify opportunities to minimize airport sanitary wastewater outflows
- Optimize the utilization of site water resources for purposes such as landscape irrigation
- Enhance the management and treatment of deicing fluid

### INITIATIVES

#### COMPLETED

- Conduct water use audits
- Install water efficient landscaping and irrigation systems
- Install pervious pavement
- Install water metering

#### FUTURE

- Update glycol recovery systems on cargo and terminal ramps
- Landscape beautification incorporating features such as rain gardens to reduce grass mowing
- Investigate built-in stormwater retention systems for development sites
- Cistern-based rainwater collection for maintenance vehicle washing and use

## INITIATIVE DESCRIPTIONS

### Update glycol recovery systems on cargo and terminal ramps

The cargo area has a glycol recovery system, which the airport could improve to capture more glycol than it currently does. The Port Authority will explore this initiative with cargo carriers. The terminal ramp glycol recovery system may need to be expanded with additional traffic, which the Port Authority will consider as necessary.



*Glycol Recovery Intake at SWF*

### **Investigate built-in stormwater retention systems for development sites**

SWF discharges stormwater to Quassaick Creek, which is a tributary of the Hudson River. While development on the airport will spur local economic development, the airport encourages development that does not adversely affect the local watershed. The airport will work with development partners to ensure that they incorporate adequate stormwater retention systems into any proposed project.

### **Landscape Beautification incorporating features such as rain gardens to reduce grass mowing**

SWF contains large areas of grass that require regular mowing during the growing season. Mowing consumes resources and staff time, and in certain areas poses hazards and impediments to motorists. Rain gardens can help capture runoff more effectively than lawn areas, and do not require regular mowing in the summer. SWF can deploy rain gardens where mowing poses operational hazards, such as at the intersection of International Boulevard and State Route 747, and the airport entrance at Route 207.



*Pervious Area Outside SWF Terminal*

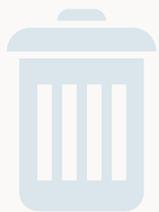
### **Cistern-based rainwater collection for maintenance vehicle washing and use**

Vehicle washing consumes potable water resources at SWF. A cost effective and simple solution for vehicle washing would be to collect non-potable rainwater in a cistern. Assuming 100 gallons are used per vehicle wash and each of SWF's 70 vehicles are washed three times per year, this initiative would save 21,000 gallons of water annually.

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**SWF AND ITS TENANTS OPERATING UNDER THIS PERMIT ARE REQUIRED TO COMPLY WITH THE PROVISIONS SET FORTH BY THE PERMIT, WHICH INCLUDES WET WEATHER WATER QUALITY SAMPLING, VISUAL INSPECTIONS OF OUTFALLS, AND PREPARATION AND IMPLEMENTATION OF A BEST MANAGEMENT PRACTICES PLAN AND A STORM WATER POLLUTION PREVENTION PLAN.**

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## 10\ SOLID WASTE MANAGEMENT

### SWF completed its first comprehensive waste composition study in 2012.

Airport staff focused on identifying low-cost methods of increasing the recycling rate at the airport and ensuring that current service levels were adequately addressing the waste and recycling needs on airport.

Interstate Waste, the airport's waste removal vendor, handles waste collection and removal, and takes all waste to their transfer station in northern New Jersey. The vendor then sends the waste to regional landfills, where workers bale and ship mixed recyclables to resale markets.

There is an average of 13.27 tons of waste and 1.41 tons of recycling generated per month at SWF. The majority comes from terminal and deplaned waste, with only 14% of the total waste stream coming from administration buildings.

Recycling rates vary across the airport. Building 138 has the highest recycling rate at 42%. The terminal has a recycling rate of 30% by weight; however, many beverage containers in the recycling stream still contain liquid, and the actual recycling diversion ratio in the terminal may be much lower.

Facilities also dispose of significant amounts of waste paper in the trash. Mixed paper found in the trash consisted mainly of shredded office paper and paper towels from the bathroom. Paper towels make up almost 100% of bathroom waste, and staff can recover them as recyclables at building 138, but not from the terminal.

If SWF is able to recover all recyclables through increased education and improved on-board recycling, there is a potential for the airport to achieve a 56% recycling rate with no change to the current waste stream.



*Port Authority Recycling Signage*



### PERFORMANCE METRICS

#### Waste AND RECYCLING



### GOAL, TARGETS, AND INITIATIVES

#### GOAL

**MINIMIZE NON-RECYCLABLE WASTE GENERATED AT SWF**

#### TARGETS

- Reduce tonnage and volume of non-recyclable waste transported to landfill
- To the maximum extent practicable, recover or compost food waste generated on airport

#### INITIATIVES

##### COMPLETED

- Develop a comprehensive waste management program
- Evaluate alternative systems for waste collection and recycling
- Recycle all universal waste and dispose of hazardous wastes properly

##### FUTURE

- Find market for excess dirt/fill or balance earthwork on development projects
- Develop a composting program with terminal concessionaires, and move towards a full-scale composting program incorporating post-consumer material
- Implement continuous improvement initiative for all recycling programs



## INITIATIVE DESCRIPTIONS

### **Find market for excess dirt/fill or balance earthwork on development projects**

A shortage of markets for excess dirt and expensive disposal costs have hampered development project risk assessments for SWF. This initiative will establish a process through which the airport will work with tenants and the engineering department to establish an effort to balance and reuse earthwork for redevelopment projects, or find markets within the airports for fill disposal or storage.

### **Implement Continuous Improvement Initiative for all recycling programs**

Implementing a recycling initiative is part of an ongoing process for any organization. It is imperative to continually reassess the success of programs and adjust for changing conditions. SWF will implement a yearly review of recycling practices and successes, and make changes accordingly.

### **Develop a composting program with terminal concessionaires, and move towards a full-scale composting program incorporating post-consumer materials**

At LaGuardia Airport and Newark Liberty International Airport, the Port Authority has established successful food waste composting initiatives with terminal concession partners. The Port Authority will build upon this experience to establish a composting program with the terminal concessionaire at SWF. An initial pilot will focus on back-of-house waste with a goal to expand to all front-of-house areas once infrastructure is in place.

**AT SWF, THERE IS AN AVERAGE OF 13.27 TONS OF WASTE AND 1.41 TONS OF RECYCLING PER MONTH.**

**THERE IS A POTENTIAL FOR THE AIRPORT TO ACHIEVE A 56% RECYCLING RATE WITH NO CHANGE TO THE CURRENT WASTE STREAM.**

## 11 \ METRICS

### GRI AIRPORT OPERATORS SECTOR SUPPLEMENT: STANDARD DISCLOSURES-PERFORMANCE INDICATORS: 2013

#### G4-9: SCALE OF THE REPORTING ORGANIZATION

SWF

Number of Employees	10
Number of Operations	38,808
Net Revenues	\$ 8,348,322
Size of Airport (acres)	2,400
Number and Length of Longest Runway (ft)	2   11,817
Number of Gates	7
Terminal Square Footage	107,798
Number of Concessionaires	1
Number of Airlines Served	4
Number of Destinations Served	5
Port Authority Controlled Terminal Square Footage	107,798
Port Authority Administrative and Maintenance Area Treated Square Footage	53,612

#### G4-10-11: EMPLOYMENT

SWF

Number of Permanent Airport Employees	49
Total PA Employees	10

<b>G4-EC1: DIRECT ECONOMIC VALUE GENERATED AND DISTRIBUTED</b>		<b>SWF</b>
Revenues		\$ 8,348,322
Operating Costs		\$ 31,289,346
Capital Investments		\$ 32,645,382
FAA Grants		\$ 4,226,368
Employee Compensation (including benefits)		\$ 2,043,763
Payments to Capital Providers/Governments		\$ 410,533
<b>TOTAL REVENUE</b>		<b>\$ 8,348,322</b>
<b>TOTAL EXPENDITURE</b>		<b>\$ 66,389,023</b>

<b>A01-PASSENGER TRAFFIC</b>		<b>SWF</b>
<b>Domestic Flights</b>		
Origin and Destination		320,682
Transfer or Transit		
<b>Total</b>		<b>320,682</b>
<b>International Flights</b>		
Origin and Destination		0
Transfer or Transit		0
<b>Total</b>		<b>-</b>
<b>TOTAL PASSENGERS</b>		<b>320,682</b>

<b>A02-AIRCRAFT MOVEMENTS</b>		<b>SWF</b>
<b>Commercial Passenger Aircraft Movements</b>		
Domestic		6,244
International		-
<b>Total</b>		<b>6,244</b>
<b>Cargo Aircraft Movements</b>		
Domestic		1,278
International		20
<b>Total</b>		<b>1,298</b>
<b>Government and General Aviation Aircraft Movements</b>		
Domestic		31,266
International		-
<b>Total</b>		<b>31,266</b>
<b>TOTAL MOVEMENTS</b>		<b>38,808</b>

<b>A03-CARGO TONNAGE</b>		<b>SWF</b>
<b>Arriving Cargo Tonnage</b>		
Freighter Aircraft		685
Passenger Aircraft		3,126
<b>Departing Cargo Tonnage</b>		
Freighter Aircraft		613
Passenger Aircraft		3,126
<b>TOTAL CARGO TONNAGE</b>		<b>17,490</b>

<b>G4-EC8: INDIRECT ECONOMIC IMPACTS</b>		<b>SWF</b>
Direct Jobs Created by Airport		609
Indirect Jobs Created by Airport		1,770
Airport Regional Economic Contribution (\$ millions)		\$470

<b>EN3-ENERGY CONSUMPTION WITHIN THE ORGANIZATION</b>		<b>SWF</b>
Building Electricity (Gj)		14,773
Building Stationary Combustion (Gj)		17,564
Building Heating and Cooling(Gj)		-
Vehicle Gasoline and Diesel (Gj)		6,301
Total Non-Renewable (Gj)		38,638
Vehicle Biodiesel and E-85 (Gj)		0
Building Renewable Energy (Gj)		-
<b>TOTAL RENEWABLE ENERGY (Gj)</b>		<b>-</b>
<b>TOTAL ENERGY CONSUMPTION (Gj)</b>		<b>38,638</b>
<b>EN5-ENERGY INTENSITY</b>		<b>SWF</b>
Energy/Aircraft Movement (kJ/movement)		995.63
<b>EN8-TOTAL WATER WITHDRAWAL BY SOURCE</b>		<b>SWF</b>
Water Usage (gallons)		1,281,164
Water Usage (m3)		-

<b>EN15-20-GHG EMISSIONS</b>		<b>SWF</b>
Direct (Scope 1) GHG Emissions (tons CO2e)		1,295
Emissions of Ozone Depleting Substances (tons CO2e)		-
Indirect (Scope 2) GHG Emissions (tons CO2e)		972.7
Indirect (Scope 3) GHG Emissions: Attracted Travel (tons CO2e)		5,347
Indirect (Scope 3) GHG Emissions: Aircraft and GSE (tons CO2e)		38,085
Reduction of GHG Emissions (tons CO2e)		684
Total GHG Emissions (tons CO2e)		46,561
GHG Emissions Intensity (tons CO2e/enplaned passenger)		0.145
Percentage of Gates with Preconditioned Air		100%
Percentage of Gates with Gate Power (400hz)		100%
Average Taxi-In Times (mins) (only domestic flights by major carriers)*		5.10
Average Taxi-Out Times (mins) (only domestic flights by major carriers)*		15.91

<b>EN21: NO<sub>x</sub>, SO<sub>x</sub>, AND OTHER SIGNIFICANT AIR EMISSIONS</b>		<b>SWF</b>
SO <sub>2</sub> (lbs)		17,288.6
NO <sub>x</sub> (lbs)		146,402.5
PM <sub>2.5</sub> (lbs)		3,898.2
PM <sub>10</sub> (lbs)		4,226.8

<b>A04-QUALITY OF STORMWATER BY REGULATORY STANDARDS</b>		<b>SWF</b>
Sample Locations (number)		15
Sample Frequency		Monthly
Incidences of Non-Compliance		0

**A06-AIRCRAFT AND PAVEMENT DEICING/ANTI-ICING FLUID** **SWF**

Aircraft Deicing Fluid Used as Neat Fluid (gallons)	40,062
Airfield Pavement Deicing Fluid used (gallons e36 Cryotech)	0
Airfield Pavement Deicing Fluid used (tons of Sodium Acetate)	51
Airfield Pavement Deicing Fluid used (gallons of Potassium Acetate)	20,400

**EN23-WASTE BY TYPE AND DISPOSAL METHOD** **SWF**

Waste for Landfill (tons)	36.79
Waste for Incineration (tons)	0
Waste for Recycling (tons)	9.84
Waste for Composting (tons)	0
Diversion Ratio - Deplaned Waste	0
International Waste (tons)	0

**G4-EN24: NUMBER AND VOLUME OF SIGNIFICANT SPILLS** **SWF**

Number of Spills	0
<b>TOTAL VOLUME OF SPILLS (gal)</b>	<b>0</b>

**G4-EN29-ENVIRONMENTAL FINES** **SWF**

Monetary Value of Fines Paid for Non-compliance with Environmental Regulations and Sanctions	0
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**A07-NOISE IMPACTS** **SWF**

Number of People Residing within DNL 65	25
Percentage Change of People Residing within DNL 65	0
<b>TOTAL NOISE COMPLAINTS (EN34)</b>	<b>4</b>

**A09-WILDLIFE IMPACTS** **SWF**

Total Wildlife Strikes	264
Damaging Wildlife Strikes	0
Total Number of Wildlife Strikes per 10,000 Aircraft Movements	6.41

## ADDITIONAL PERFORMANCE METRICS

VEHICLE FLEETS (# OF VEHICLES, LIGHT AND HEAVY DUTY)	SWF
Bi-fuel	0
Biodiesel-capable	62
CNG	0
Electric	0
E-85	0
Gasoline	19
Hybrid	5
Hydrogen	0
<b>Subtotal Alternative Fuel Vehicles</b>	<b>67</b>
<b>Total of all Vehicles</b>	<b>86</b>
<b>Alternative Fuel % of Total</b>	<b>77.91%</b>

VEHICLE ENERGY CONSUMPTION	SWF
Gasoline (gallons)	8,970
Diesel (gallons)	36,705
Bi-fuel (gallons)	0
Biodiesel (gallons)	0
E-85 (gallons)	0
Gasoline-Hybrid Vehicles (gallons)	1,849
CNG (gge)	0

AIRCRAFT FUEL	SWF
Total Fuel Loaded onto Aircraft (Jet A, gallons)	2,443,390
AvGas (gallons)	-
<b>TOTAL</b>	<b>2,443,390</b>
Alternative Aviation Fuel Consumed (gallons)	0