October 2012

I am pleased to present the Teterboro Airport (TEB) Sustainable Management Plan. We face many challenges as we begin to integrate sustainability principles into TEB’s long-term business strategy and day-to-day operations. Constrained capacity in the New York/New Jersey airspace makes it increasingly difficult to accommodate the number of passengers passing through our airports, both on the ground and in the air. We take our role as a community leader seriously and strive to reduce the impacts TEB has on area water quality, air quality, and noise. We will also face challenges associated with climate change, including sea level rise and the increased frequency and severity of extreme storm events. Therefore, we must be able to adapt to allow for operational continuity and efficacy.

By way of background, The Port Authority of New York & New Jersey adopted a sustainability policy in 2008 which called for an 80% reduction in greenhouse gas emissions from all of our facilities by 2050, as well as the development of climate change adaptation and risk management strategies. The release of the sustainability policy was timely because in 2010, TEB joined an FAA pilot program to develop a Sustainable Management Plan.

This Plan lays out strategies to: allow for cost effective and reliable airport operations; minimize the adverse environmental impacts on the surrounding community and achieve Port Authority greenhouse gas reduction targets. We chose five target areas which focus on improving all aspects of airport operations -- from air quality and greenhouse gas, to solid waste and recycling, to community engagement. We identified responsible staff, timeframes, and budgets for all 23 initiatives identified in the Plan.

Our 2013 annual report will outline our progress towards the goals and targets laid out in the Sustainable Management Plan. Furthermore, we will seek to integrate sustainability principles into all future capital projects to ensure that the Plan serves as an enduring priority for TEB.

We look forward to working with all of our airport staff, tenants, and aircraft operators to ensure the success of this plan moving forward.

Sincerely,

Huntley A. Lawrence
General Manager
New Jersey Airports
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**Our Sustainability Mission**

**Teterboro Airport** (the Airport) is a critical general aviation and reliever airport for the New York-New Jersey airports system; the Port Authority of New York and New Jersey (the Port Authority, with its airport management contractor) is dedicated to integrating sustainability principles and practices into the Airport’s long-term business strategy and day-to-day operations. Building on its past achievements in sustainability, the Port Authority will seek a holistic management approach to enhance: (1) the Airport’s operational efficiency, safety, and economic viability; (2) regional economic growth; (3) the conservation and conscientious use of natural resources; and (4) our social responsibilities to our local and regional communities. The Port Authority will continue to support local, state, and regional efforts to improve sustainability and meet our mission for the Airport.

**Our Sustainability Guiding Principles**

- **Improve operational efficiency** of the Airport and airspace by working with the airport users, Fixed Base Operators, and Federal Aviation Administration to reduce aircraft delay and associated environmental impacts, by implementing infrastructure improvements and technologies to support airport, aircraft, and airspace operational enhancement;

- **Continue to foster** a positive relationship with the surrounding community through ongoing partnerships with the Teterboro Aircraft Noise Abatement Advisory Committee and other groups, and through efforts to address concerns related to noise, air quality and safety;

- **Support our tenants** in their pursuit to improve sustainability performance, by participating in activities aimed at reducing environmental impacts and enhancing efficiency and customer satisfaction;

- **Build resiliency** in our facilities, infrastructure, and operations through managing our assets proactively, encouraging proactive management of tenant assets, considering site-specific climate change impacts, and working with regional partners on adaptation and resiliency initiatives;

- **Reduce our contribution** to climate change by striving to meet our greenhouse gas emission reduction targets;

- **Advance the sustainable design and construction program** for Port Authority and tenant Airport building and infrastructure projects, to reduce environmental impacts and enhance resource conservation;

- **Build on our sustainability achievements** to enhance our success and improve performance in areas such as stormwater management, stakeholder communication, air quality, and safety;

- **Expand the use of life cycle cost** analysis to ensure there is a viable business case behind our decision-making; and

- **Become a national model** for other general aviation airports by successfully incorporating sustainability into our business model to improve financial efficiency, stimulate the regional economy, advance our environmental stewardship, and enhance our commitments to the community and our tenants.
BACKGROUND

In June 1993, the Port Authority of New York and New Jersey (the Port Authority) developed and issued an environmental policy statement formalizing its longstanding commitment to provide environmentally sound transportation, terminal, and other commerce facilities within the Port District to the greatest extent practicable. The policy seeks to minimize environmental impacts for Port Authority operations, organize and advance regulatory reporting and compliance, and integrate environmental planning into the capital planning process. The Port Authority developed the Sustainable Design Guidelines in 2007 to meet this policy’s sustainable design and construction goals.

The Port Authority has been incorporating sustainability principles across its business for many years. At Teterboro Airport (TEB), which is owned and operated by the Port Authority, there are many examples of sustainability in practice. Sustainability projects undertaken by the Port Authority and tenants provide an excellent launching pad for the Port Authority to develop this sustainable management plan to guide and develop future progress in this area.

To demonstrate its commitment to develop transportation facilities in a sustainable manner, the Port Authority adopted an agency-wide sustainable design policy in 2006, which can be found in Appendix A. The policy addressed new construction projects, substantial renovations, and reconstruction projects and established guidance addressing a project’s site decisions, water and energy resource use, construction practices, materials use, and indoor air quality as well as maintenance and operations.

In March 2008, the Port Authority enhanced its original environmental policy to include a sustainability component that explicitly addressed the issue of global climate change and maintained the Port Authority’s aggressive position in its efforts to reduce greenhouse gas (GHG) emissions, tracked through regular GHG inventories. The resulting sustainability policy establishes the following Port Authority-wide sustainability goals (The sustainability policy can be found in Appendix B):

- An 80% reduction in all GHG emissions related to its facilities from 2006 levels by 2050
- Eventually, net zero GHG emissions from Port Authority operations
- Working proactively with tenants and others to reduce their GHG emissions
- Development of strategies for climate change adaptation

The Port Authority wishes to strengthen its commitment to sustainability at all five airports it runs. In 2009, the Port Authority began development of an environmental sustainability plan for Stewart International Airport (SWF). The SWF plan, which was published in September 2010, details the sustainability goals and initiatives planned for the airport. In 2010, the FAA
selected TEB for inclusion in its Sustainability Pilot Program. The pilot program will produce ten sustainability management plans or sustainable master plans for airports across the United States. As a part of this program, the Port Authority developed this sustainable management plan.

**SUSTAINABLE DESIGN**

The Port Authority developed the *Sustainable Design Guidelines* in 2007 detailing strategies to meet its design and construction goals. In 2011, the Port Authority updated the 2007 *Sustainable Design Guidelines* to include sustainability strategies for infrastructure projects and provide sustainable design goals for all new construction and rehabilitation of infrastructure projects. The guidelines are divided into two sections; the *Sustainable Building Guidelines* and the *Sustainable Infrastructure Guidelines*. Distinguishing buildings from infrastructure allows the guidelines to address issues specific to each type of project. All tenants at Port Authority facilities are required to implement the guidance in the *Sustainable Building Guidelines*, through the Tenant Construction and Alteration Process (TCAP).

The *Sustainable Building Guidelines* take into account the US Green Building Council’s LEED® 2.1 Green Building Rating System, New York State Executive Order 111 and the New York State Green Building Tax Credit. Design requirements vary according to project type (i.e. new construction, substantial renovations, reconstruction projects) and project size. The guidelines require the most extensive application of sustainable design in new projects of 20,000 gross square feet or more. Projects comprising less than 5,000 gross square feet are exempt.

The *Sustainable Building Guidelines* have been successfully applied to projects at TEB since 2007. The continued application of the *Sustainable Building Guidelines* alongside the implementation of the sustainable management plan is critical for the Port Authority to achieve its sustainable goals at TEB.

**SUSTAINABILITY MISSION**

The Port Authority developed a sustainability mission statement and guiding principles that outline the purpose of TEB’s sustainability program. TEB’s sustainability mission statement can be found at the front of this plan. The sustainability mission and guiding principles outline agency and airport priorities established at the beginning of the sustainability planning process. The formation of the plan took place within the context of the guiding principles, and airport staff chose goals, targets, and initiatives that would help achieve the overall mission.

**SUSTAINABILITY APPROACH**

The Port Authority’s sustainability program and sustainable management plan 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

The EONS approach builds on the triple bottom line with the addition of operational efficiency and pertains specifically to airports. EONS represents the following:

- Economic Viability
- Operational Efficiency
- Natural resource conservation
- Socioeconomic responsibility

Using these two approaches to sustainability, the Port Authority developed its sustainability mission and guiding principles detailed in the previous section.

The Port Authority and TEB staff created a sustainability action working group (known as the green team) which guided the planning process and will guide implementation of activities and initiatives detailed in the plan. The green team includes TEB staff and Port Authority staff from various departments within the agency, as well as key contractors. With this foundation, the Port Authority considered the topics that should be selected as the strategic focus areas for TEB. The focus areas that were selected for this plan are not the only priority areas for the Port Authority but provide a starting place to design and implement continual improvement and positive change in these specific areas. As the plan is revised, the focus areas will be reviewed and new areas may be included. For this sustainable management plan, the strategic focus areas are:

1. Operational efficiency
2. Climate change adaptation
3. Air quality and greenhouse gases
4. Waste minimization and recycling
5. Community outreach

Concentrating on the five focus areas, the Port Authority performed a sustainability baseline assessment, which served as a critical starting point in understanding TEB’s key environmental indicators and developing a sustainable management plan. The baseline assessment completed in November 2011 was used to create the goals, targets and opportunities (also referred to as initiatives) that make up the backbone of the sustainable management plan.

As part of ongoing sustainability activities, the Port Authority has developed noise abatement programs. Since 1987, the Port Authority and the FAA have developed noise abatement procedures at TEB. The Teterboro Aircraft Noise Abatement Advisory Committee (TANAAC), created in 1987, established an effective dialogue between the airport community and the
residential communities. Membership is open to locally elected officials within a five mile radius of the Airport. Staff at TEB prepares quarterly and year-end reports for TANAAC and conducts quarterly meetings. In addition, community members can make an appointment to visit the noise office at the airport and observe the real-time monitoring of noise data. Public outreach and pilot awareness programs are in place at the airport to address noise concerns by the surrounding communities and to educate aircraft pilots using the airport. Since the Port Authority has an established and comprehensive noise management program in place and has also been successful in decreasing its noise impacts, noise management is not selected as a focus area within this plan. Noise remains a priority issue for the Port Authority and the agency is committed to maintaining its noise abatement program at TEB.

The Port Authority uses a continual improvement process for integrating sustainability into TEB’s on-going operations. Each of the following eight steps will be evaluated periodically to assess targets and determine additional initiatives to meet the targets and goals. The process promotes awareness of the sustainable management plan and encourages TEB staff and stakeholders to become actively involved in continual performance improvement. The Port Authority will build upon existing operations to enable continual sustainability improvements at TEB.

1 **Identify and Rank Opportunities** – The findings of the sustainability baseline assessment helped the green team to identify opportunities that could improve sustainable performance and encourage sustainable behavior and practices. Using a weighted scoring system, the green team ranked and prioritized opportunities.

2 **Set Goals** – With the opportunities identified and prioritized, the green team refined the initial goals to correlate with the specific objectives that will make TEB a more sustainable airport.

3 **Recommend Actions and Set Targets** – The green team considered potential actions that could assist in meeting goals and targets and successfully implementing initiatives. The green team set targets that will facilitate measurement and achievement of success for the TEB sustainability program.

4 **Develop Action and Monitoring Plans** – The Port Authority has developed specific plans and schedules to implement the initiatives. The green team will recommend leaders for each initiative and set milestones to measure success.

5 **Implement Initiatives** – After refining the goals, setting the targets, and developing the action and monitoring plans, Port Authority and TEB staff will begin activities to implement the initiatives.

6 **Monitor Performance** – As initiatives are implemented, TEB’s green team will monitor progress on a quarterly or semi-annual basis to ensure success and to determine if the initiatives will assist the Port Authority in meeting the goals and targets. These programs, initiatives and projects will be monitored on a regular basis to track progress.

7 **Evaluate Program** – To understand overall success of the sustainability program, TEB’s green team will review the entire program annually and make changes as appropriate.

8 **Communicate Progress** – The Port Authority will communicate progress in delivering its sustainable management plan to its stakeholders.
SUSTAINABILITY GOALS

As one of the first steps in developing the sustainable management plan, the Port Authority established goals for each of the five strategic focus areas; operational efficiency, climate change adaptation, air quality and greenhouse gas, waste minimization and recycling and community outreach. The goals for TEB include:

1. Incorporate sustainability principles into the long-term business strategy and day-to-day operations, building on existing systems and standard operating procedures.

2. Address the impacts of predicted changes in climate and weather conditions in order to provide continuing operations.

3. Minimize TEB’s contribution to climate change, air pollution, and depletion of the ozone layer.

4. Minimize the generation of solid waste (including universal, hazardous, and construction wastes), and recycle collected waste to the maximum extent possible.

5. Enhance communication with, and in support of, the airport community.
Integrating sustainability principles into standard operating procedures is a key step toward ensuring lasting improvements at the airport. Operational efficiency measures save time and money for airport employees. TEB has a highly engaged and committed workforce. Its staff wants the best for TEB and its surrounding environment and community. Airport staff have put in place programs, such as the adoption of the Port Authority’s alternative fuels program that make TEB a well-run and efficient airport. To this end, TEB’s staff strives to incorporate new strategies and technologies into day-to-day operations. The sustainable management planning process has allowed TEB to take an in depth look into airport activities to improve current practices.

**Current Activities**

As part of ongoing capital programs and facility improvement, the Port Authority looks to incorporate operational efficiency principles in all current and future projects and procedures. Actions taken in the last few years include:

- Adoption of the Port Authority’s *Sustainable Building Guidelines* and *Sustainable Infrastructure Guidelines* in all Port Authority and tenant projects
- Use of hybrid-electric engine technology for Port Authority-owned new light-duty vehicles as well as encouraging the use of alternative fuels
- Successful energy demand management, including LED lighting for Taxiway A and automatic light controls to increase energy efficiency

**Future Initiatives**

To further improve the airport’s operational efficiency, the Port Authority will implement the following initiatives:

- Coordinate with FAA to identify and implement modified approach procedures
- Encourage the FAA to implement automatic aircraft releases
- Continue to work with the FAA to initiate measures that promote NextGen agenda
- Construct additional taxiways and aircraft holding areas to ease congestion
- Conduct analysis of environmental and operational benefits of a perimeter road project and construct perimeter road within the airport
Establish more extensive videoconference/WebEx/shared document systems for intra- and inter-facility communication

Implement efficient turf management procedures

Investigate the feasibility of a green roof installation on a Port Authority building, and evaluate roofing projects for potential of Solar PV/Green Roof/White Roof installation in accordance with the Port Authority’s Sustainable Design Guidelines

With these initiatives, the Port Authority will strive to meet the following targets:

- Reduce aircraft idling and taxiing times
- Improve the efficiency of airport utility use by 10% for electricity and by 5% for natural gas by 2015 compared to the 2009 baseline

Additional details for future initiatives are included below.

**Coordinate with FAA to identify and implement modified approach procedures**

Due to congested airspace in the vicinity of TEB, some approaches to the airport are several miles longer than necessary, causing excessive aircraft fuel use. Additionally, some approaches overfly areas sensitive to aircraft noise. To minimize the amount of fuel and approach times, the Port Authority is working with FAA to support the development of procedures that will demonstrate environmental benefits including fuel savings, emissions reductions, and area noise reductions. The Port Authority will coordinate with the FAA to institute these changes.

**Encourage the FAA to implement automatic aircraft releases**

Aircraft waiting for a departure release consume fuel while idling on active taxiways, which is an air emission concern at the airport. Implementing automatic release procedures provides pilots with advance notification of anticipated departure times. Given a defined wheels up time, pilots can minimize fuel burn by delaying engine start until the appropriate time. The Port Authority will collaborate with the FAA on implementing these procedures.

**Continue to work with the FAA to initiate measures that promote NextGen agenda**

As part of the FAA’s program of enhanced safety and efficiency at US airports, the Port Authority will work with the FAA to implement NextGen air traffic control technologies. With NextGen, the FAA plans to make air travel more convenient and dependable, while maximizing the safety and security of each flight. Specifically, the Port Authority will coordinate with the FAA on the expansion of surface congestion management and further refining departure and approach procedures to maximize fuel savings using advanced navigation and weather information systems. The FAA estimates that NextGen improvements will reduce delays 38 percent by 2020 throughout the country.

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Construct additional taxiways and aircraft holding areas to ease congestion
Minimizing the amount of time aircraft spend waiting for takeoff and moving around the airfield is an important step toward developing a sustainable airport that facilitates the reduction of fuel consumption and emissions. Furthermore, reducing taxiway congestion is an important safety management consideration. The Port Authority believes that constructing additional taxiways and developing improved turning areas and holding areas will allow for increased airfield efficiency. All airfield construction will follow the Port Authority’s Sustainable Infrastructure Guidelines.

Conduct analysis of environmental and operational benefits of a perimeter road project and construct perimeter road within the airport
Ground vehicles must not impede the flow of aircraft traffic on the airfield. Vehicles travelling between certain FBOs and airport buildings must drive either on public roads or active taxiways, and cross active runways. The Port Authority will conduct an analysis to examine the impact of airport vehicles on the airport’s operational efficiency as well as traffic and congestion impacts that the vehicles cause in the surrounding community. The construction of a perimeter road following the Port Authority’s Sustainable Infrastructure Guidelines, should reduce fuel use, reduce air emissions and increase employee productivity for airport staff.

Establish more extensive videoconference/WebEx/shared document systems for intra- and inter-facility communication
Minimizing the amount of time commuting to other Port Authority facilities and minimizing the printing of documents will provide cost savings at TEB and increase employee productivity. The use of tele- and videoconferencing technology will allow TEB employees to save fuel and reduce emissions since it will reduce the need to travel to other facilities. Teleconferencing will save employees time and reduce congestion on area roadways. The time saved will increase employee productivity. In addition, using a inter facility shared document system that limits printing hard copies will reduce waste generation and minimize purchasing of paper.

Implement efficient turf management procedures
TEB has extensive turf cover on the airfield and in surrounding property. These areas are seeded to make TEB’s grounds aesthetically pleasing to the surrounding community and mowed to minimize potential wildlife strikes by aircraft. TEB staff will review the existing management procedures to identify changes that will reduce the use of fuel for landscape equipment and any fertilizer or herbicide use at the airport. With a sustainable turf management program, TEB will set mowing heights, ensure consistent planting times, and train employees so that the amount of fuel and chemical use will be minimized.
Investigate the feasibility of a green roof installation on a Port Authority building, and evaluate other roofing projects for potential of solar/green roof/white roof installation in accordance with the Port Authority’s Sustainable Design Guidelines

Green roofs minimize heating and cooling costs, increase stormwater retention, reduce stormwater runoff, and minimize heat island effects. Green roofs involve a roof partially or completely covered with vegetation with an impervious membrane that prevents water from leaking into the building. The vegetation provides improved insulation and reduces thermal gains and losses from hot or cold weather, which allows for lower electricity and fuel costs. In addition, rainwater that falls on the roof infiltrates into the soil membrane and is used by the vegetation for growth. Therefore, green roofs minimize stormwater runoff and improve stormwater quality. Finally, vegetation maintains similar surface temperature to the ambient air temperature, while traditional roof surface temperatures are much higher than the ambient temperature. Surface temperature mitigation decreases a roof’s contribution to local heat island effects. The Port Authority believes that green roofs as well as roof mounted solar photovoltaics and white roofs may also reduce costs and increase sustainability. The Port Authority will consider all options for green roofing, white roofing, or solar photovoltaic installation when replacing roofs at TEB. Sustainable roofing projects will be done in accordance to the Port Authority Sustainable Building Guidelines.
The Port Authority believes that understanding and addressing risks to infrastructure and operations resulting from predicted climate change impacts will give TEB the ability to adapt while minimizing costs and disruptions in operations in the future. Using the results of the New York City Climate Change Adaptation Task Force (CCATF) Risk Assessment and ClimAID (Integrated Assessment for Effective Climate Change Adaptation Strategies in New York State), the Port Authority has committed to evaluating all new construction and major rehabilitation projects for climate change impacts.

**Current Activities**

The Port Authority is an active participant in New York City and New York State climate change efforts. As part of this involvement, the Port Authority collaborates with the New York Climate Action Council and the nYC Climate Change Adaptation Task Force to identify actions and proposed strategies for climate change adaptation. TEB has worked with the New Jersey Meadowlands Commission on addressing area flooding concerns. The Port Authority is committed to participating in these discussions in both New York and New Jersey as they develop, and will work collaboratively with municipalities and state governments on the issue of climate change adaptation. The Port Authority is engaged in developing lists of at-risk infrastructure at all of its facilities. The Port Authority has committed to evaluating the effects the following climate change impacts will have on new construction and major rehabilitation projects at its facilities so that the project scopes anticipate climate change effects:

- Increase in mean annual air temperature
- Increase in mean annual precipitation
- Increase in sea level and associated storm surge

**Future Initiatives**

The Port Authority will undertake the following initiatives to meet the goal of addressing the impacts of predicted changes in climate and weather conditions in order to provide continuing operations at TEB:

- Modify cost tracking mechanisms for potential climate change impacts
- Implement pilot initiative to assess potential TEB capital projects for their sensitivity to climate change impacts
- Perform stormwater study for climate change/ flooding

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1 For the purposes of risk assessment, the Port Authority is using materials from the New York City Climate Change Adaptation Task Force, as similar materials are not available from a local or state agency in New Jersey.
With these initiatives, the Port Authority will strive to meet the following target:

- By December 2014, have in place a site-specific risk assessment and climate change adaptation action plan for Teterboro Airport that addresses physical and operational resiliency related to potential climate change impacts

Additional details for future initiatives are included below.

**Modify cost tracking mechanisms for potential climate change impacts**

The Port Authority will continue to perform tracking activities already underway by both the Port Authority and its tenants to assess costs associated with severe weather. The Port Authority completed a high level inventory of infrastructure in 2009 with the purpose of assessing climate change risks to facilities. Using this inventory, TEB will develop criteria for climate change cost tracking and projections based on existing tracking methodology and the New York City Climate Change Task Force’s asset class structure. Since flooding is anticipated to be the most significant threat from climate change, TEB will specifically anticipate costs associated with flooding and storm surge events. The cost model will be benchmarked against past and future severe weather events to verify and fine tune the results. The Port Authority will share the information with its tenants and encourage stakeholders to collaborate on mitigation strategies.

**Implement pilot initiative to assess potential TEB capital projects for their sensitivity to climate change impacts**

TEB will assess risks associated with climate change and sea level rise as part of its annual review of planned capital projects. TEB staff will use the information collected as part of the cost tracking mechanism initiative to assess risks to facilities. Because of TEB’s location, the Port Authority anticipates that increased flooding will be the most significant effect of climate change. TEB will work to ensure that capital project design focuses on flood avoidance and resilience.

**Perform stormwater study for climate change/ flooding**

The Port Authority anticipates increased flooding and possibly more frequent storms because of climate change. The Port Authority will complete a study that investigates the effects that increased stormwater will have on TEB’s property and operations. The results of the study will be used to adequately prepare for anticipated operational challenges associated with increased flooding and stronger storms. These changes will allow the Port Authority to modify capital and operating budgets and minimize service disruptions. The intent of the study is to minimize the need for rebuilding and closure of facilities due to flooding.
As part of the goal to minimize air quality impacts, the Port Authority focuses on both the local air quality as well as global impacts from emissions that occur as a result of operations at TEB. Local air quality is primarily affected by the concentration of criteria air pollutants, which include ozone, particulate matter (PM$_{10}$ and PM$_{2.5}$), carbon monoxide (CO), nitrogen oxides (NO$_x$), sulfur oxides (SO$_x$), and lead. Global impacts result from greenhouse gas (GHG) emissions that contribute to climate change as well as ozone-depleting substances, such as refrigerants. The vast majority (about 98%) of on-airport NO$_x$, PM$_{10}$, PM$_{2.5}$, and GHG emissions are generated by aircraft. Emissions of SO$_x$ result from building electricity use due to the emissions from electric power plants. Airport Ground Support Equipment (GSE) and fleet vehicles also contribute to TEB’s air pollutant emissions.

### Current Activities

To address criteria air pollutant emissions, the Port Authority has conducted criteria pollutant inventories for TEB since 2006. In addition, the Port Authority worked closely with the New Jersey Department of Environmental Protection (NJDEP) to complete a detailed air quality evaluation at TEB, the results of which were published in 2008. The study results helped identify TEB’s contribution to local air quality effects and enhance the activities aimed at reducing emissions from TEB operations.

The Port Authority is committed to reducing its GHG emissions. Annual GHG emission inventories are conducted to understand the contributions from various sources.

In addition to the inventories, studies and policies, the Port Authority and its tenants have implemented several 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, are successful in reducing emissions associated with energy and fuel use at TEB. The following initiatives have already been implemented at TEB:

- Annual inventories of criteria air pollutant and GHG emissions
- Completion of an air quality monitoring study
- Port Authority-wide targets for GHG emission reduction
- Use of hybrid-electric light duty vehicles
- LED lighting for Taxiway A
- Automatic light controls to increase energy efficiency
- Fuel efficient aircraft (tenant initiative)
- Adjusted temperature set points to reduce energy usage (tenant initiative)
ENERGY STAR program (tenant initiative)
Solar panels (tenant initiative)
Energy efficient lighting and HVAC equipment (tenant initiative)

Future Initiatives

To further reduce emissions, the Port Authority will undertake the following initiatives to meet the goal of minimizing TEB’s contribution to climate change, air pollution and ozone depletion:

- Pursue all paths for energy efficiency initiatives using outside funding
- Establish an airport-wide anti-idling program for Port Authority and tenant vehicles
- Develop and implement measures to reduce TEB vehicle fuel use, including driver education and fuel tracking
- Develop standardized methods for recording, tracking, and benchmarking energy use
- Use outside funding to continue/expand the alternative fuel fleet vehicle program

With these initiatives, the Port Authority will strive to meet the following targets:

- Reduce Scope I and II greenhouse gas (GHG) emissions by 10% by 2016 compared to the 2006 baseline inventory to help meet the overall Port Authority goal of an 80% reduction by 2050
- Reduce Airport emissions of particulate matter and NOx by 5% and 15% by 2016 compared to the 2009 baseline
- Reduce Port Authority-controlled fuel use at the Airport by 5% by December 2015 compared to a 2009 baseline

Additional details for future initiatives are included below. In addition, the initiatives described in goal #1 that focus on fuel use reduction will also contribute TEB’s commitment to further improve air quality and minimize greenhouse gas emissions.

Pursue all paths for energy efficiency using outside funding

The Port Authority will explore options for improving energy efficiency using available outside funding to further deliver financial and environmental savings to TEB. Incentives that are available from state, utility and local funding resources will be used to complete energy projects. In addition, the Port Authority will participate in the 2012 Direct Install program led by PSE&G, which will help the Port Authority continue to retrofit its space with energy efficient lighting and equipment. Tenants will be encouraged to participate in similar funding opportunities as they arise. All capital projects following the Sustainable Building Guidelines will increase the energy efficiency of TEB facilities.
Establish an airport-wide anti-idling program for Port Authority and tenant vehicles
In cooperation with the tenants, the Port Authority will develop an anti-idling policy and develop training materials for airport vehicle operators. TEB staff will initiate outreach programs and an educational campaign for tenants and establish annual training. TEB staff will conduct anti-idling outreach programs for external shuttle and livery companies through curbside signage and printed material. Additionally, TEB staff will increase awareness of New Jersey’s anti-idling law, which prohibits vehicle idling for periods longer than three minutes.

Develop and implement measures to reduce vehicle fuel use
The Port Authority operates a wide range of vehicles at TEB to provide excellent operational service for aircraft operators. The Port Authority has purchased six electric hybrid vehicles to minimize the usage of gasoline and diesel. With more efficient vehicles, the Port Authority will develop procedures for TEB staff to further minimize the amount of fuel used in each vehicle. The Port Authority will develop a driver education course for all employees that emphasizes fuel efficiency measures, and establishes a guide to best practices as a reference for vehicle operators. In addition, the Port Authority will enhance its program to track fuel use in all vehicles and identify further opportunities for fuel savings.

Develop standardized methods for recording, tracking, and benchmarking energy use
Measuring and understanding energy end uses in buildings and on the airfield is an important first step to achieving energy use reduction goals. The Port Authority will develop and implement a program to record and track the amount of energy used in all Port Authority-controlled facilities at TEB. The Port Authority is aware of the total amount of energy consumed at the airport; this initiative is focused on centralizing and sharing energy use data among key staff to drive energy use reduction. This initiative will also help compare buildings against each other at the facility, by measuring their Energy Use Intensity (EUI). As the energy rate is analyzed, TEB staff will implement measures to decrease energy consumption.

Use outside funding to continue/expand the alternative fuel fleet vehicle program
The Port Authority owns a fleet of forty-six vehicles at TEB. Twenty-two vehicles are on-road vehicles and the remaining twenty-four vehicles are off-road vehicles. Six of the vehicles are hybrid-electric. Agency-wide, the Port Authority is replacing operations and other light-duty vehicles with hybrid and alternative fuel vehicles as they reach the age of retirement. As part of this process, the Port Authority will pursue outside funding to replace the existing vehicles with efficient alternative fuel vehicles, and pursue vehicles that minimize GHG emissions. The Port Authority will research existing funding mechanisms and apply for grants to purchase alternative fuel vehicles.
The State of New Jersey has a goal that 50 percent of all waste be recovered and recycled. As part of the New Jersey Statewide Mandatory Source Separation and Recycling Act, Bergen County identified paper, glass, aluminum, plastics, cardboard, white goods, ferrous scrap, and construction and demolition waste as waste streams that must be recycled. In 2009, Bergen County recycled 55 percent of its solid waste. The Port Authority’s Aviation Department instituted a policy in 2009 acknowledging “the importance of diverting from disposal at landfills as much of the solid waste stream that is produced at the region's airports as possible” and establishing “that 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 Port Authority subsequently incorporated the policy into airport rules and regulations. A Port Authority-wide policy requires that contractors recycle 75 percent of certain demolition debris items, which currently include asphalt, Portland cement concrete (PCC), steel, and clean soil.

**Current Activities**

At TEB, the FBOs generate the majority of solid waste. Certain FBOs have instituted the following activities to recycle and reduce waste:

- Segregate waste streams on site for recycling (paper, bottles and cans, cardboard)
- When feasible, segregate newspapers taken off aircraft for recycling
- Send cardboard box packaging from outside catering companies back to flight kitchen or catering facility to minimize this waste stream on site

**Future Initiatives**

To develop a more robust waste management system, the Port Authority will institute the following actions:

- Set up and run annual electronic waste (e-waste) collection events for employees
- Perform a waste audit to determine recycling opportunities for Port Authority/AvPORTS facilities
- Explore opportunities to consolidate waste and recycling system for FBO and Port Authority waste
With these initiatives, the Port Authority will strive to meet the following targets:

- Increase Port Authority controlled recycling and landfill diversion by 10% by 2015 compared to the 2012 baseline
- Establish successful waste minimization and recycling program airport wide by 2015

Additional details for future initiatives are included below.

**Set up and run annual electronic waste (e-waste) collection events for employees**
Electronic waste is collected at TEB in accordance with New Jersey and federal law, and the Port Authority is committed to expanding e-waste collection. The Port Authority will enhance annual collection events for employees to bring in retired electronic equipment for recycling. This collection activity will keep heavy metals and other contaminants from entering the environment.

**Perform a waste audit to determine the recycling opportunities at TEB**
One of the most significant sustainability opportunities at TEB is to expand recycling and waste minimization activities. The Port Authority will perform a waste audit to gain an understanding of the waste generated and recycled, and identify opportunities for increased recovery of recyclable materials. With the results of the waste audit, the Port Authority will develop a solid waste management and recycling plan and, if required, restructure waste hauling contracts accordingly to ensure effective recovery of plastic, cardboard and other materials.

**Explore opportunities to consolidate waste and recycling system for FBO and Port Authority waste**
As part of the waste audit, the Port Authority will coordinate with FBOs to explore the feasibility of a system that will consolidate waste and recycling across the airport. The Port Authority believes that a consolidated waste and recycling contract will allow for significant cost savings for the Port Authority and tenants. Additionally, streamlining waste collection areas will allow for correct sizing and use of waste removal containers and efficient waste removal sequencing, reducing truck traffic and associated emissions on surface roads. These actions will help the Port Authority maximize the recycling rate and minimize the amount of waste entering landfills in the region.
The Port Authority takes its role as a community leader very seriously. This role includes everything from investing in the infrastructure that keeps the region moving, to investing in the people and places that make it all work. Each year, TEB hosts a variety of educational and community events, which range from career days to help students explore aviation career opportunities, to an annual 5K run. Many of TEB staff meet regularly with local community boards, participate in community forums and serve in community organizations during their spare time.

The Port Authority promotes culture and heritage in the local community through the on-site aviation museum. Founded in 1972, the Aviation Hall of Fame & Museum of New Jersey is dedicated to the preservation of New Jersey’s aviation and space heritage and features historic air and space equipment, artifacts, photographs, fine art, an extensive model collection and more. The museum celebrates the men and women whose outstanding aeronautical achievements have brought worldwide recognition to the state.

**Current Activities**

The Port Authority currently conducts several successful community engagement activities, including the actions listed below:

- TEB has supported Bergen County’s United Way by hosting a 5k run; raising more than $330,000 in 13 years
- The Teterboro Aircraft Noise Abatement Advisory Committee (TANAAC) was created in 1987 and establishes dialogue between the Airport Community and surrounding residential communities. Membership is open to locally elected officials within a five-mile radius of the airport. The airport prepares quarterly and year-end reports for TANAAC and conducts quarterly meetings
The Teterboro Airport Community Benefit Fund raises funds for college scholarships for local students majoring in aviation, engineering or other science-related fields through an annual golf tournament.

The Port Authority has committed to maximizing business opportunities for minorities, women, and small entrepreneurs in the New York/New Jersey region. Current construction contracts include the following goals for M/W/DBE: 17% total participation, 12% minority, and 5% women.

Future Initiatives

The Port Authority will build on the success of their existing community outreach program at TEB by expanding it to include elements of the sustainability program. At TEB, the community engagement program will be expanded upon to enhance stakeholder communication. TEB will perform the following actions:

- Establish a sustainability coordinator role at TEB
- Develop an internal and external communication plan
- Develop and implement a sustainability awareness program
- Expand current Earth Day activities

With these initiatives, the Port Authority will strive to meet the following targets:

- By June 2014, expand community engagement activities to serve a broad representation of Airport and off-Airport communities
- Agree on key performance metrics and implement a data reporting system at the Airport by January 2013 so progress toward sustainability can be tracked and reported to stakeholders
- By January 2014, have in place sustainability training, education and awareness programs for employees, tenants, and the community

Additional details for future initiatives are included below.

Establish a sustainability coordinator role at TEB

As part of the development of this sustainable management plan, TEB will designate a sustainability coordinator. The sustainability coordinator will take the lead in sustainability program implementation and stakeholder engagement at TEB with support from all airport staff as well as others within the Port Authority.
Develop an internal and external sustainability communication plan
The Port Authority will develop and implement a plan to report on sustainability performance to both internal and external stakeholders. As part of the sustainability program, a set of key sustainability metrics has been established. The data associated with these metrics will be updated at regular intervals and communicated to stakeholders. Specifically, TEB staff will prepare an annual sustainability report card that outlines sustainability achievements and other TEB programs such as stormwater and noise. Moreover, TEB management will keep stakeholders aware of its sustainability efforts on a continued basis.

Develop and implement sustainability awareness program
As one of the first steps in the sustainability communications plan, the Port Authority will develop a sustainability awareness program for TEB to be used for new employee training, tenant awareness, and passenger and community outreach. Key steps include training and information sharing programs for airport employees, tenant awareness roundtables and coordination, and programs to support client and passenger awareness at the FBOs.

Expand current Earth Day activities
Every year the Port Authority hosts Earth Day celebrations at many of its facilities. Each year on Earth Day, the airport community reaches out to the neighboring towns to help plant trees, clean up roadside trash and waste, provide recycling opportunities, and promote sustainability awareness. TEB staff will expand its Earth Day activities to further promote opportunities for sustainability and community awareness of sustainability issues.
ROLES AND RESPONSIBILITIES

Implementation of the sustainable management plan and delivery of its goals and targets is the shared responsibility of all Port Authority employees serving TEB.

Delivery of the sustainable management plan is additionally supported by several specific roles, including:

**TEB Sustainability Coordinator:** responsible for increasing awareness of the sustainable management plan, driving the implementation of the initiatives and serving as the main point of contact for all sustainability related issues at the airport.

**Port Authority Aviation Department (Environmental program management):** responsible for supporting the sustainability coordinator in his/her role, facilitating green team meetings, annual sustainability reporting and sharing sustainability best practice and resources from other airports.

**TEB Green Team:** responsible for representing TEB staff departments and helping to raise awareness of the sustainable management plan and the initiatives among airport staff. Green team members will attend meetings and provide input in the review and updates to the sustainable management plan’s goals, targets and initiatives. Some green team members will have specific responsibilities as the leads for the implementation of initiatives and in these cases they are also responsible for recording, monitoring and reporting on progress.

**All employees:** responsible for delivery of the sustainable management plan and for meeting the goals and targets set out within it. All employees should be cognizant of the sustainable management plan and seek to integrate sustainable practices and procedures into the operations and management of the airport.

IMPLEMENTING THE SUSTAINABILITY INITIATIVES

Each of the sustainability initiatives detailed in the sustainable management plan has a corresponding internal action plan that was drafted in conjunction with the sustainable management plan. The action plans provide detailed procedures to ensure the successful
implementation of the sustainable management plan. They will be updated as needed by the Port Authority employees responsible for implementing the initiative. The information in the action plans includes the following:

1) Describes the tasks that must be performed to complete the initiative

2) Provides the implementation schedule

3) Lists personnel responsible for each task

4) Specifies the resource and cost allocation by task

5) Identifies the associated metrics needed to track and report back progress for each initiative.

The action plans are internal guidance documents for staff and will be available in either hard or electronic format for personnel responsible for implementing each task.

**REINFORCING SUSTAINABLE DESIGN AND OPERATIONS**

The Port Authority follows the *Sustainable Building Guidelines* for capital projects and renovations. Applying the guidelines to new capital projects supports the goals and targets of the sustainable management plan and helps to drive improvements to the sustainability performance of TEB. The sustainability coordinator and the Port Authority’s aviation and engineering departments will work with project managers to review opportunities for improving sustainability during the design phase to ensure the Port Authority will achieve the goals of both the *Sustainable Building Guidelines* and the sustainable management plan during the operation of the asset. Arguably, the biggest opportunity to improve the sustainability performance of TEB will be through the modernization and sustainable operations of the infrastructure and assets at the airport and adherence to the requirements in the guidelines will ensure these opportunities are seized. Physical infrastructure should incorporate design features that support the goals and targets in the sustainable management plan.
MONITORING AND REPORTING OUR PROGRESS

The green team played an integral role in producing the sustainable management plan and will continue to meet and review goals, targets, and initiatives throughout the implementation phase. The green team will meet twice per year at a minimum to discuss progress on implementing the sustainable management plan. As part of the green team meetings, staff responsible for implementing the sustainability initiatives will provide status updates to the team. The green team meetings will provide an opportunity to discuss any limitations with the implementation of the initiatives and the effect of these limitations on the schedule for implementation. The green team will be responsible for discussing and recommending steps to solve issues and ensure the continued and successful delivery of the sustainable management plan. In addition, the green team will be responsible for all revisions to the implementation schedule and scope.

Sustainability metrics are key to measuring continual improvement at the airport. The sustainability scorecards provide a space for staff to log and track metrics on an on-going basis. Additional sustainability metrics (not included in the action plans) will also be measured and tracked in order to provide a comprehensive overview of sustainability performance at TEB. The aviation department and the sustainability coordinator will determine which sustainability metrics should be measured on an on-going basis and will create a mechanism for capturing this data as part of the delivery of the sustainable management plan.

REPORTING TO OUR STAKEHOLDERS

On an annual basis the Port Authority will report progress on its sustainability performance and delivery of the sustainable management plan to stakeholders and the public. Progress will be reported in the form of the sustainability scorecard (Appendix C). The sustainability scorecard has been developed to provide Port Authority employees, tenants, the FAA and other external stakeholders with a comprehensive, high-level summary of sustainability performance at the airport. The scorecard provides a page summary for each of the sustainability focus areas within the sustainable management plan. For each focus area page there is an overview of the goal, its associated targets, a glimpse of performance to date using metrics and data, and a status report on the implementation of the initiatives associated with achieving the targets.

The sustainability scorecard will be available to stakeholders via the Port Authority website.
Appendix A

PORT AUTHORITY OF NEW YORK AND NEW JERSEY SUSTAINABLE DESIGN POLICY, 2006

I. Introduction

Sustainable design seeks to reduce the environmental impact to improve the maintenance and operation of new and renovated buildings and facilities. The Port Authority’s sustainable design guidelines, developed and updated periodically by the Engineering Department, emphasize and strive for a balance among the following goals: (1) energy conservation and efficiency; (2) conservation of water and other natural resources; (3) waste reduction; and (4) healthy indoor environments. The guidelines also seek to benefit the region’s economy by encouraging the use of locally manufactured materials and by supporting emerging regional markets in renewable energy and clean technologies.

II. Instruction

A. The Port Authority’s policy is to reduce adverse environmental impacts of the design, construction, operation and maintenance and occupancy or leasing of new or substantially renovated buildings and facilities, reconstruction projects, and programs. Departments adhere to this administrative instruction as outlined in paragraphs B, C, and D below. Because the Instruction may necessitate design decisions or the use of materials that have a higher first cost than would conventional designs or materials, departments implement sustainable design only when life cycle cost analyses, prepared by or reviewed by the Engineering Department, show that such costs are neutral, or that sustainable design will yield a positive return on investment (referred to as the “life cycle cost criterion”).

B. New Buildings and Facilities

1. The sustainable design guidelines apply to a new building or facility that is 20,000 gross square feet or more, or any new multi-building construction project in which the buildings are of the same construction type and have a combined area of 20,000 gross square feet or more, provided the sustainable design measures meet the life cycle cost criterion and do not compromise safety or security. A new building or facility that is 20,000 gross square feet or more, or any new multi-building construction project in which the buildings are of the same construction type and have a combined area of 20,000 gross square feet or more, is to surpass building code standards for energy efficiency by at least 20 percent.
2. A new building or facility or multi-building project of less than 20,000 gross square feet incorporates significant attributes of applicable sustainable design principles (site planning, water, energy, materials and resources, and indoor environmental quality) to comply with this Instruction. Incorporation of these attributes is based on the life cycle cost criterion.

C. Substantial Renovations and Reconstruction Projects

1. A substantial renovation in a building or facility of 20,000 gross square feet or more is to surpass building code standards for energy efficiency by at least 10 percent, provided that this measure meets the life cycle cost criterion. Additionally, best efforts are used to adhere to the sustainable design guidelines.

2. A reconstruction project in a building or facility of 20,000 gross square feet or more is to surpass building code standards for energy efficiency by at least 10 percent, provided that this measure meets the life cycle cost criterion. Additionally, best efforts are used to adhere to the sustainable design guidelines.

3. A substantial renovation or reconstruction project in a building or facility of less than 20,000 gross square feet is to incorporate significant attributes of applicable sustainable design (with respect to water, energy, materials, resources and indoor environmental quality) to comply with this Instruction. Incorporation of these attributes is based on the life cycle cost criterion.

D. Programs

To the extent that it is deemed reasonable by the Chief of Real Estate and Development, with the concurrence of the Chief Financial Officer, applicable sustainable design principles (site planning, water, energy, materials and resources, and indoor environmental quality) are to be applied to all programs in which the Port Authority participates.

III. Definitions

A. “Building” or “facility” is defined as a structure of 5,000 gross square feet or more.

B. Substantial renovation” is defined as the replacement of more than 50 percent of any building subsystem, measured in units appropriate to the subsystem, within any consecutive 12-month period.

C. “Subsystem” is defined as a building assembly or building set of units made up of various components that serve a specific function including, but not limited to, exterior walls, windows, doors, roofs, ceilings, floors, lighting, piping, duct work, insulation, heating, ventilation and air cooling (HVAC) system equipment or components, electrical appliances and plumbing appliances.
D. “Reconstruction project,” commonly referred to as a “gut rehabilitation,” is defined as a renovation: (1) in which four or more primary building systems of a building or facility undergo at least a 50% replacement within a 12-month period; and (2) during the performance of which the affected building area is unoccupiable for 30 days or more due to the nature of the construction.

E. “Primary building systems” is defined as: (1) HVAC; (2) lighting; (3) exterior walls and windows; (4) roofs and ceilings; (5) plumbing; and (6) other electrical.

F. “Program” is defined as an action or series of related actions initiated by the Real Estate and Development Department that has been authorized by the Board of Commissioners.

IV. Space Leased to the Port Authority

To the maximum extent practical, the Real Estate Department implements the Port Authority’s sustainable design policy (with regard to water, energy, materials and resources, and indoor environmental quality) in spaces leased to the Port Authority. The Real Estate Department seeks to execute improvements whose expected cost savings provide a payback prior to the end of the lease term.

V. Port Authority Tenants

Leases provide or will provide that tenant construction, substantial renovation and reconstruction are to comply with this Administrative Instruction. This requirement is incorporated into leases at inception, renewal or modification as appropriate.

VI. Roles & Responsibilities

A. Port Authority Contracts

The Project Management Department identifies building and facility projects in the Port Authority Capital Plan that meet the criteria for implementation of the sustainable design guidelines as set forth in paragraphs II. A. and II. B. For such projects, a project team comprising representatives from the Project Management Department, the Engineering Department, and the respective line department identifies and evaluates ways to comply with this Instruction. This evaluation takes place in the planning stages of design (pre-Stage I, Stage I, and Stage II). The Project Management Department reports the status of these projects to the Office of Environmental Policy, Programs & Compliance on a quarterly basis.

The Project Management Department develops and maintains an agency-wide list of proposed projects in the planning stages (pre-Stage I, Stage I, and Stage II) with opportunities for sustainable design applications. The Project Management Department also maintains a list of all projects that move into final design and construction (Stage III and IV) that incorporate sustainable design applications. The Project Management Department updates both lists at least twice a year and transmits them to the Office of Environmental Policy, Programs & Compliance.
B. Tenant Alteration Applications

The Tenant Alteration Application process requires tenants to adhere to this Administrative Instruction. All tenant projects that require approval of Tenant Alteration Applications are reported to the Office of Environmental Policy, Programs & Compliance on a bi-annual basis.

C. Port Authority Programs

The Office of the Chief of Real Estate and Development periodically reports on its efforts to incorporate sustainable design principles in Port Authority programs to the Office of Environmental Policy, Programs & Compliance.

DISCLAIMER
Although issued in revised format, the information contained in these Administrative Instructions (AIs) reflects the content of previously issued Administrative Policy Statements (APS) and, in certain limited instances, Port Authority Instructions (PAs). The rules set forth in these AIs will remain in effect until changing conditions require their revision. This body of instructions is not intended to be exhaustive with respect to all the responsibilities of employees and it does not constitute a contract. These AIs will be updated from time to time to reflect changes or additions as appropriate, at the direction of the Executive Director.
Appendix B

PORT AUTHORITY OF NEW YORK AND NEW JERSEY ENVIRONMENTAL SUSTAINABILITY POLICY, 2008

In June 1993, the Port Authority formally issued an environmental policy statement recognizing its long-standing commitment to provide transportation, terminal and other facilities of commerce within the Port District, to the greatest extent practicable, in an environmentally sound manner. Additionally, the Port Authority expressed its commitment to manage its activities consistent with applicable environmental laws and regulations and to deal with identified environmental matters on a responsible, timely and efficient basis. Over the years, each of the Port Authority’s facilities has been involved to some degree in actively pursuing capital and operating strategies that address various air, land, water quality and other environmental matters.

In recent years, human-induced climate change has emerged as one of the most significant challenges to economic and social well-being. The most significant driver of climate change is the worldwide emissions of greenhouse gases (GHG) from economic activity. The effects of climate change are already apparent in the rise of air and ocean temperatures, geographic shifts in the habitats of plants, animals and insects, melting glaciers and sea ice, and a rise in sea levels. Scientists expect that further global warming will lead to more frequent and intense storms, greater storm surge, flooding, more incidents of extreme temperatures, and significant losses of biodiversity. The generation of heat-trapping GHG emissions, if not reduced by substantial levels, is expected to cause irreversible harm around the world, especially to areas with significant low-lying coastal regions, including the Port District.

In March 27, 2008, the Board of Commissioners reaffirmed its support of the Port Authority’s continuing sustainability initiatives by expanding the Port Authority’s environmental policy to include a sustainability component that explicitly addresses the problem of global warming and ensures that the agency maintains an aggressive posture in its efforts to reduce GHG emissions within the region (Sustainability Policy).

Implementation of the sustainability policy shall be predicated on the following principles:

- The Port Authority will continue to use its best efforts to reduce all GHG emissions related to its facilities, including tenants and customers, by 80% from 2006 levels, by 2050. The majority of these reductions will come from improvements made through new capital investments and changes in operations (e.g., lighting and HVAC system upgrades; fuel switching).

- The Port Authority will establish a goal of net zero GHG emissions from its own operations by 2010. In pursuit of this goal, the Port Authority may make use of new and emerging strategies in the marketplace that are available to help organizations account for their net GHG footprint in the near term. The use of such strategies – including, for example, carbon credits, renewable energy credits (RECs), allowances, and other tools – has become an increasingly accepted methodology, in situations where organizations direct their primary energies to reducing their own emissions. Accordingly, the Port Authority shall use such strategies only to account for GHG emissions the agency determines that it is unable to reduce through capital investments and changes in operations.
The Port Authority will encourage its customers, tenants, and partners to conduct their businesses in a more sustainable fashion, including reductions in their own GHG emissions, providing support for these efforts in all cases where it is practical to do so. Moreover, wherever possible, the Port Authority will also seek out innovative mechanisms and partnerships through which the region’s overall GHG footprint may be reduced. It is anticipated that these outside partnerships may provide opportunities for the Port Authority to contribute to regional GHG reductions on a much shorter timeline than would be possible by focusing solely on capital and operational improvements within the organization.

The Port Authority will develop strategies that reduce the risk posed by climate change to its facilities and operations and, in collaboration with other regional stakeholders, develop strategies that mitigate the risk to the region posed by climate change in a manner that will promote a sustainable environment.

Pursuant to the foregoing report, the following Port Authority Sustainability Policy was adopted with Commissioners Bauer, Chasanoff, Coscia, Ferer, Mack, Pocino, Silverman and Steiner voting in favor; none against.
Appendix C

TEB Sustainability Scorecards

Teterboro Airport
Sustainable Management Plan Achievements 2013

We are pleased to release the results of our sustainability program’s achievements for calendar year 2013. During this time, we implemented a total of x initiatives. The airport has saved $ in utility costs due to implementation of x, y and z energy efficiency measures. Additionally, we established an airport-wide anti-idling program and increased our recycling diversion ratio by x%.

Our public outreach programs have brought the airport closer to the community at large. We are planning and adapting to rising sea levels and temperatures by proactively integrating climate change planning into our capital process and operating procedures.

We look forward to continuing our progress on our sustainability program. We face many challenges: a hot summer and snowy winter caused our electricity and natural gas use to rise on a per square foot basis during January and July; however, various energy efficiency projects such as x have kept those increases to a minimum and resulted in a net decrease in energy use. As we continue implementing our sustainability plan, we look forward to working with tenants and the community to save money, decrease our environmental impact, and create lasting value at Teterboro Airport.

Signed,

Teterboro Airport General Manager

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Quick Glance - Sustainability by the Numbers

<table>
<thead>
<tr>
<th>CO2 Savings</th>
<th>xxx tons</th>
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</thead>
<tbody>
<tr>
<td>Electricity Savings</td>
<td>xxx kWh</td>
</tr>
<tr>
<td>Natural Gas Savings</td>
<td>xxx therms</td>
</tr>
<tr>
<td>Ground Vehicle Fuel Savings</td>
<td>X Gallons/Employee</td>
</tr>
<tr>
<td>Recycling Diversion Ratio</td>
<td>X %</td>
</tr>
<tr>
<td>Recycling Diversion Ratio-Improvement from 2012</td>
<td>X%</td>
</tr>
<tr>
<td>Sustainability Initiatives Underway</td>
<td>9</td>
</tr>
<tr>
<td>Sustainability Initiatives Planned-2014</td>
<td>5</td>
</tr>
</tbody>
</table>
Operational Efficiency

Incorporate sustainability principles into the long-term business strategy and day-to-day operations, building on existing systems and standard operating procedures

<table>
<thead>
<tr>
<th>Initiatives</th>
<th>Status</th>
<th>Implementation Details</th>
<th>Completion Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coordinate with the FAA to identify and implement modified approach procedures</td>
<td></td>
<td></td>
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<tr>
<td>Encourage the FAA to implement automatic aircraft releases</td>
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<tr>
<td>Continue to work with the FAA to initiate measures that promote NextGen agenda</td>
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<tr>
<td>Construct additional taxiways and aircraft holding areas to ease congestion</td>
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<tr>
<td>Conduct analysis of environmental and operational benefits of a perimeter road project and construct perimeter road within the airport</td>
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<tr>
<td>Establish more extensive videoconference/WebEx/shared document systems for intra- and inter-facility communication</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Implement efficient turf management procedures</td>
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<tr>
<td>Investigate the feasibility of a green roof installation on a Port Authority building, and evaluate roofing projects for potential of Solar PV/Green Roof/White Roof installation in accordance with the Port Authority’s Sustainable Design Guidelines</td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>

Reduce aircraft idling and taxi times
- Metric: Taxi time reduction
- Baseline: None
- Current: None
- Performance to date:

Improve the efficiency of Airport electricity use by 10% by 2015 compared to the 2009 baseline
- Metric: Electricity/Floor Area (kwh/ft2)
- Baseline: None
- Current: None
- Performance to date:

Improve the efficiency of Airport natural gas use by 5% by 2015 compared to the 2009 baseline
- Metric: Gas/Floor Area (therms/ft2)
- Baseline: None
- Current: None
- Performance to date:
# Climate Change Adaptation

**Goal**  
Address the impacts of predicted changes in climate and weather conditions in order to provide continuing operations.

<table>
<thead>
<tr>
<th>Initiatives</th>
<th>Status</th>
<th>Implementation Details</th>
<th>Completion Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Modify cost tracking mechanisms for potential climate change impacts</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Implement pilot initiative to assess potential TEB capital projects for their sensitivity to climate change impacts</td>
<td></td>
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<td></td>
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<tr>
<td>Perform stormwater study for climate change/flooding</td>
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</tbody>
</table>

By December 2014, have in place a site-specific risk assessment and climate change adaptation action plan for Teterboro Airport that addresses physical and operational resiliency related to potential climate change impacts.

Performance to date:
## Air Quality and Greenhouse Gases

### Focus Area

Minimize TEB’s contribution to climate change, air pollution and depletion of the ozone layer

<table>
<thead>
<tr>
<th>Initiatives</th>
<th>Status</th>
<th>Implementation Details</th>
<th>Completion Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pursue all paths for energy efficiency initiatives using outside funding</td>
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<tr>
<td>Establish an airport-wide anti-idling program for PANYNJ and tenant vehicles</td>
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<tr>
<td>Develop and implement measures to reduce TEB vehicle fuel use, including driver education and fuel tracking</td>
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<td></td>
</tr>
<tr>
<td>Develop standardized methods for recording, tracking, and benchmarking energy use</td>
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</tr>
<tr>
<td>Use outside funding to continue/expand the alternative fuel fleet vehicle program</td>
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</table>

### Targets

#### Reduce Scope I and II greenhouse gas (GHG) emissions by 10% by 2016 compared to the 2006 baseline inventory to help meet the overall Port Authority goal of an 80% reduction by 2050

- **Metric:** MT CO₂ Equivalent
- **Baseline:** None
- **Current:** None
- **Performance to date:**

#### Reduce Airport emissions of particulate matter and NOx by 5% and 15% by 2016 compared to the 2008 baseline

- **Metric:** MT PM
- **Baseline:** None
- **Current:** None
- **Performance to date:**

- **Metric:** MT NOx
- **Baseline:** None
- **Current:** None
- **Performance to date:**

---

**Chart 1:** Scope I and II Absolute Greenhouse Gas (GHG) Emissions

**Chart 2:** Ground Vehicle Emissions of Particulate Matter

**Chart 3:** Ground Vehicle Emissions of NOx
### Air Quality and Greenhouse Gases

<table>
<thead>
<tr>
<th>Focus Area</th>
<th>Goal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimize TEB’s contribution to climate change, air pollution and depletion of the ozone layer</td>
<td></td>
</tr>
</tbody>
</table>

#### Targets

<table>
<thead>
<tr>
<th></th>
<th>Reduce Port Authority-controlled fuel use at the Airport by 5% by December 2015 compared to a 2008 baseline</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Metric: Gallons of Fuel</td>
<td></td>
</tr>
<tr>
<td>• Baseline: None</td>
<td></td>
</tr>
<tr>
<td>• Current: None</td>
<td></td>
</tr>
<tr>
<td>• Performance to date:</td>
<td></td>
</tr>
</tbody>
</table>

![Chart 4: Fuel Consumption of Port Authority Vehicles](http://www.panynj.gov/airports/teterboro.html)
Waste Minimization and Recycling

Minimize the generation of solid waste (including universal, hazardous, and construction wastes), and recycle waste to the maximum extent possible.

<table>
<thead>
<tr>
<th>Initiatives</th>
<th>Status</th>
<th>Implementation Details</th>
<th>Completion Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Set up and run annual electronic waste (e-waste) collection events for employees</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perform a waste audit to determine recycling opportunities for PANYNJ/AvPORTS facilities</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Explore opportunities to consolidate waste and recycling system for FBO and PANYNJ waste</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Increase Port Authority controlled recycling and landfill diversion by 10% by 2015 compared to the 2012 baseline
- Metric: Tons of Waste to Landfill
- Baseline: None
- Current: None
- Performance to date:
- Metric: Tons of Waste Recycled
- Baseline: None
- Current: None
- Performance to date:

Chart 1: Waste to Landfill

Chart 2: Waste to Recycling

Chart 3: Recycling Diversion Ratio, %

Establish successful waste minimization and recycling program airport wide by 2015

Performance to date:
<table>
<thead>
<tr>
<th>Community Outreach</th>
<th>Focus Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enhance communication with the airport community</td>
<td>Goal</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Initiatives</th>
<th>Status</th>
<th>Implementation Details</th>
<th>Completion Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Establish a sustainability coordinator role at TEB</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Develop an internal and external communication plan</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Develop and implement a sustainability awareness program</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Expand current Earth Day activities</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Targets**

- **By June 2014, expand community engagement activities for Airport and off-Airport communities**

  

- **Agree on key performance metrics and implement a data reporting system at the Airport by January 2013 so progress toward sustainability can be tracked and reported to stakeholders**

  

- **By January 2014, have in place sustainability training, education and awareness programs for employees, tenants, and the community**

  

Performance to date:

-  
-  
-  

http://www.panynj.gov/airports/teterboro.html
# TEB Sustainability Metrics

<table>
<thead>
<tr>
<th></th>
<th>Baseline Year</th>
<th>Calendar Year</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Units</strong></td>
<td>2006</td>
<td>2009</td>
</tr>
<tr>
<td><strong>Airport Profile</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Airport Revenue</td>
<td>$29,861,000</td>
<td>$31,897,000</td>
</tr>
<tr>
<td>Annual number of aircraft movements</td>
<td>187,840</td>
<td>137,890</td>
</tr>
<tr>
<td>Port Authority-controlled space</td>
<td>Floor area (ft²)</td>
<td>20,000</td>
</tr>
<tr>
<td>Total number of fixed-base operators (FBOs)</td>
<td>Number/floor area (ft²)</td>
<td>5 / 662,350</td>
</tr>
<tr>
<td><strong>Greenhouse Gas Emissions</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total direct and indirect GHG emissions; CO₂e</td>
<td>MT CO₂e</td>
<td>122,533</td>
</tr>
<tr>
<td>CO₂e emissions per operation; MT CO₂e/operation</td>
<td>0.652</td>
<td>0.658</td>
</tr>
<tr>
<td>Scope 1 and 2 CO₂e emissions</td>
<td>MT CO₂e</td>
<td>5</td>
</tr>
<tr>
<td>Scope 3 CO₂e emissions</td>
<td>MT CO₂e</td>
<td>122,538</td>
</tr>
<tr>
<td>Tons per year savings (compared to 2006)</td>
<td>MT CO₂e</td>
<td>NA</td>
</tr>
<tr>
<td>Offsets procured (including RECs)</td>
<td>MT CO₂e and $</td>
<td>0</td>
</tr>
<tr>
<td><strong>Air Quality</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Criteria air pollutant emissions</td>
<td>Metric tonnes</td>
<td>260 NOx; 43 SO₂; 49 PM10; 46 PM 2.5</td>
</tr>
<tr>
<td><strong>Energy</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gasoline used</td>
<td>Gallons</td>
<td>Not available</td>
</tr>
<tr>
<td>Diesel fuel used</td>
<td>Gallons</td>
<td>Not available</td>
</tr>
<tr>
<td>CNG used</td>
<td>gge</td>
<td>0</td>
</tr>
<tr>
<td>Electricity used</td>
<td>kWh, kWh/(ft²)</td>
<td>1.47m (b) / 73.5</td>
</tr>
<tr>
<td>Natural gas</td>
<td>therms, therms/(ft²)</td>
<td>44,000 (c) / 2.2</td>
</tr>
<tr>
<td>Renewable energy generated on site</td>
<td>kWh output</td>
<td>Not available</td>
</tr>
<tr>
<td><strong>Aircraft Fuel</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total aircraft fuel loaded by type</td>
<td>Gallons</td>
<td>41m gal</td>
</tr>
<tr>
<td>Alternative aviation fuel consumed</td>
<td>Gallons</td>
<td>0</td>
</tr>
<tr>
<td><strong>Noise</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of people residing within DNL 65</td>
<td>Number of people</td>
<td>14,860 (d)</td>
</tr>
<tr>
<td>Number of noise-related complaints</td>
<td>Number of logged complaints</td>
<td>894</td>
</tr>
<tr>
<td>Number of complainants</td>
<td></td>
<td>239</td>
</tr>
<tr>
<td><strong>Safety</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Damaging wildlife strikes per 100,000 movements</td>
<td>Number of strikes per 100,000 movements</td>
<td>1.49</td>
</tr>
</tbody>
</table>

(a) Numbers are for 2008, the most recent data available.
(b) Includes estimated use where data are missing.
(c) Ibid.
(d) Contours are for calendar year 2000.
(e) All major drains on the AOA have StormCeptors.
(f) Based on number of pickups and container size therefore an estimate.
(g) Port Authority and AvPORTS currently do not handle international waste. Once customs checkpoint transferred from Atlantic to Port Authority control, international waste will be tracked.
(h) For most Port Authority / AvPORTS operations, there is informal recycling of paper through the Resident Engineer’s office.

Source: Port Authority/LeighFisher, April 2011.
## TEB Sustainability Metrics (continued)

<table>
<thead>
<tr>
<th>Water Consumption</th>
<th>Baseline Year</th>
<th>Calendar Year</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Units</td>
<td>2006</td>
</tr>
<tr>
<td>Potable water consumption</td>
<td>Gallons</td>
<td>Not available</td>
</tr>
<tr>
<td>Non-potable water consumption</td>
<td>Gallons</td>
<td>0</td>
</tr>
<tr>
<td>Volume of water reclaimed</td>
<td>Gallons</td>
<td>0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Water Quality</th>
<th>Baseline Year</th>
<th>Calendar Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percentage of drains with storm treatment features</td>
<td>%</td>
<td>Not available</td>
</tr>
<tr>
<td>Total number of permit exceedances</td>
<td>Number, %</td>
<td>0</td>
</tr>
<tr>
<td>Total ADF collected for treatment</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>% deicing fluid recycled</td>
<td>%</td>
<td>0</td>
</tr>
<tr>
<td>Total number of spills by substance</td>
<td></td>
<td>18 JetA; 2 x hydraulic fluid; 1 x oil; 2 x diesel; 1 x gas</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Waste</th>
<th>Baseline Year</th>
<th>Calendar Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total non-hazardous waste produced</td>
<td>Tons (f)</td>
<td>401.4</td>
</tr>
<tr>
<td>Total hazardous waste produced</td>
<td>Tons or gallons</td>
<td>150 gallons</td>
</tr>
<tr>
<td>Waste to landfill</td>
<td>Tons</td>
<td>401.4</td>
</tr>
<tr>
<td>Waste to incineration (international waste)</td>
<td>Tons</td>
<td>0</td>
</tr>
<tr>
<td>Total recycled (h)</td>
<td>Tons</td>
<td>0</td>
</tr>
<tr>
<td>Total composted</td>
<td>Tons</td>
<td>0</td>
</tr>
<tr>
<td>Total construction waste recycled</td>
<td>Tons</td>
<td>Not available</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Community Engagement</th>
<th>Baseline Year</th>
<th>Calendar Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of events for the community hosted by the airport</td>
<td></td>
<td>5+</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Economic Impacts</th>
<th>Baseline Year</th>
<th>Calendar Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct jobs created by Airport</td>
<td># of direct jobs</td>
<td>1200</td>
</tr>
<tr>
<td>Indirect jobs created by Airport</td>
<td># of indirect jobs</td>
<td>16,000</td>
</tr>
<tr>
<td>Actual % of DBE business over total contracts let</td>
<td>%</td>
<td>MBE 14.9%</td>
</tr>
<tr>
<td>WBE 6.3%</td>
<td>WBE 3.4%</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Employee Welfare</th>
<th>Baseline Year</th>
<th>Calendar Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Workforce diversity</td>
<td>Percentage by race/ethnicity</td>
<td>Not available</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
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Source: Port Authority/ LeighFisher, April 2011.
Contact Us

For more information about the Teterboro Airport Sustainable Management Plan, please contact:

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