



Newark Liberty International Airport

Sustainable Management Plan



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I am pleased to present the Newark Liberty International Airport (EWR) Sustainable Management Plan. We face many challenges as we begin to integrate sustainability principles into EWR'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 EWR has on area water quality, air quality, and noise. We 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.

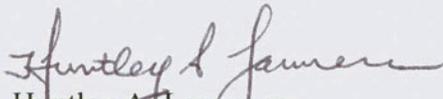
By way of background, The Port Authority of NY & NJ adopted a sustainability policy in 2008 which called for an 80% reduction in greenhouse gas emissions from all of our facilities by 2050, as well as the development of climate change adaptation and risk management strategies. The release of the sustainability policy was timely because in 2010, EWR 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 ten target areas which focus on improving all aspects of airport operations -- from storm water management, to solid waste and recycling, and to employee health to welfare. We have identified responsible staff, timeframes, and budgets for all 53 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 Plan serves as an enduring priority for EWR.

We look forward to working with all of our airport staff, airlines, tenants, and passengers 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

Newark-Liberty International Airport (the Airport) is a critical transportation hub for the New York-New Jersey metropolitan area and the nation; the Port Authority of New York and New Jersey (the Port Authority) 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 airlines 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;
- 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;
- Emphasize education and training** for our employees to support their health and well-being;
- Support the creation** of local and regional jobs and new and emerging businesses through existing and new partnerships;
- Support the development** of emerging technologies and new market solutions that foster sustainable innovation, including partnering on product trials and supporting industry research;
- Build on our achievements** in energy management, sustainable procurement, and alternative surface transportation modes and fuels and improve our performance in other areas, including solid waste reduction and recycling, stormwater management, and stakeholder communication;
- 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 commercial 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 and support 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 has been incorporating sustainability principles across its business for many years. At Newark Airport (EWR), which is operated by the Port Authority, there are many examples of sustainability in practice. Sustainability projects undertaken by the Port Authority, airlines, concessionaires and tenants provide an excellent launching pad for the Port Authority to develop this sustainable management plan.

To demonstrate its commitment to develop transportation facilities in a sustainable manner, the Port Authority adopted an agency-wide sustainable design policy in 2006 (the sustainable design policy 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. The Port Authority developed the *Sustainable Design Guidelines* in 2007 to meet this policy's sustainable design and construction goals.

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, which are tracked through regular GHG inventories. The resulting sustainability policy established 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; and
- 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 Plan, which was published in September 2010, details the sustainability goals and initiatives planned for SWF. In 2010, the FAA selected EWR

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 and design goals for 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 the Port Authority facilities are required to implement the guidance in *Sustainable Building Guidelines, 2007* 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. Sustainable building guideline requirements vary according to project type (i.e. new construction, substantial renovations, and reconstruction projects) and project size. The sustainable design policy requires 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 EWR 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 EWR.

SUSTAINABILITY MISSION

The Port Authority developed a sustainability mission statement that outlined the purpose of EWR's sustainability program. EWR'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 this 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:

- E**conomic Viability
- O**perational Efficiency
- N**atural resource conservation
- S**ocioeconomic responsibility



Using these two approaches to sustainability, EWR developed its sustainability vision and guiding principles detailed in the previous section. Port Authority and EWR 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 EWR and Port Authority staff from various departments within the agency. With this foundation, the Port Authority then developed strategic focus areas and conducted a sustainability baseline assessment to begin to develop a sustainable management plan. The sustainable management plan addresses the following nine focus areas:

- 1. Operational efficiency**
- 2. Climate change adaptation**
- 3. Water management**
- 4. Air quality and greenhouse gases**
- 5. Solid waste management and recycling**
- 6. Ground transportation**
- 7. Community outreach**
- 8. Contract and lease management**
- 9. Health and welfare of employees**

Concentrating on the nine focus areas, the Port Authority performed a baseline sustainability assessment of EWR, which served as a critical starting point in understanding EWR's key sustainability indicators and developing a sustainable management plan. The baseline assessment completed in March 2012 was used to create the goals, targets and opportunities (also referred to as initiatives) that make up the backbone of the plan.

The Port Authority uses a continual improvement process for integrating sustainability into EWR'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 EWR 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 EWR.

- 1 **Identify and Rank Opportunities** – The findings of the baseline assessment helped the green team identify opportunities that can advance sustainability 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 EWR a more sustainable airport.
- 3 **Recommend Actions and Set Targets** – The green team considered potential actions that can 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 EWR 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 EWR staff will begin activities to implement the initiatives.
- 6 **Monitor Performance** – As the initiatives are implemented, EWR'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, EWR'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.

CONTINUAL IMPROVEMENT

This plan details the first three steps of this process.

SUSTAINABILITY GOALS

As one of the first steps in developing the sustainable management plan, the Port Authority established goals for each of the nine strategic focus areas: Operational Efficiency, Climate Change Resilience, Water Management, Air Quality and Greenhouse Gas, Solid Waste Management and Recycling, Ground Transportation, Community Outreach, Contract and Lease Management, and Health and Welfare of Employees. The goals for EWR 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 water consumption and continue to contribute to the protection of water quality in Newark Bay.



4. Minimize EWR's contribution to climate change, air pollution, and depletion of the ozone layer.



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



6. Reduce emissions from ground transportation and reduce reliance on single occupancy vehicles as a means of traveling to and from Newark Airport.



7. Enhance communication with, and in support of, the airport community.



8. Integrate sustainable practices into internal policies, business processes, and written agreements.



9. Provide opportunities and incentives to improve the health and welfare of employees.

The following narrative will describe the Port Authority's plan for achieving these goals through a set of initiatives and related targets.

FOCUS AREA PLANS



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



Integrating sustainability principles into standard operating procedures is a key step towards ensuring lasting improvements at the airport. Operational efficiency measures save time and money for airport employees and the Port Authority. Operational efficiency measures can demonstrate positive effects across various aspects of airport operations, from aircraft operation on the airside to paper use on the landside. Airport staff have put in place programs that make EWR a well-run and efficient airport. The adoption of the Port Authority's alternative fuels program and the implementation of the *Sustainable Design Guidelines* are examples of such programs. To this end, the Port Authority and EWR staff strive to incorporate new strategies and technologies into all day-to-day operations. This process allows the Port Authority to take an in depth look into airport activities and improve current practices.

Current Activities

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

- EWR applies the Port Authority *Sustainable Building Guidelines* and *Sustainable Infrastructure Guidelines* in all Port Authority and tenant projects, as relevant
- EWR installed a Ground Based Augmentation System (GBAS) to allow for more precise flight sequencing to support NextGen procedures
- Light rail service and centralized rental car facilities are available to ease congestion at the terminals
- The Port Authority made extensive airfield modifications to enhance safety and accommodate larger aircraft, giving the air traffic control tower more flexibility in the movement of aircraft
- A study explored further modifications for delay reduction, including Technology Acceptance Model (TAM) improvements
- United Airlines, recently merged with Continental Airlines, installed a ground management system (Aerobahn) which provides ramp operators and Air Traffic Control with information and tools to minimize aircraft departure taxi time and engines-on time
- Several ATC procedures such as the use of "Dispersal Headings" reduce delays for departing aircraft



- When weather conditions allow, aircraft arriving from the west use charted visual approach procedures to reduce arrival delays
- For morning departures, the Tower can utilize RW 29 for turbo props only which alleviates congestion for departing aircraft on RW 22R, reducing delays
- The Port Authority built high-speed taxiways, reducing delays for arriving aircraft

Future Initiatives

Reducing idling, taxiing and approach times at EWR (New York-New Jersey metropolitan area’s busiest airport in terms of flights) will allow for more efficient airspace and airfield operations that will facilitate reduced air emissions and reduce fuel consumption. In addition to this, the Port Authority will also target its landside and day to day employee procedures and work with corporate and federal partners on these initiatives. To meet this goal, EWR will implement the following initiatives:

- Implement full airside ground management program
- Modify approaches using Ground-Based Augmentation System (GBAS) and Required Navigation Performance (RNP)
- Support additional NextGen activities while advocating that new procedures support environmental goals of organization
- Establish more extensive teleconference/Webex/shared documents systems for intra- and inter-facility communication
- Establish default double-sided printing procedures
- Investigate potential to streamline data logging, reporting and inspecting
- Develop paperless systems for day-to-day Port Authority processes

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

- Reduce aircraft idling, taxiing and approach times
- Reduce airport paper purchases by 5% by 2015

Additional details for future initiatives are included below.

Implement full airside ground management program

John F. Kennedy International Airport (JFK), also operated by the Port Authority, installed a ground management program that improves the efficiency of the departure management system. Aircraft waiting for a departure release consume fuel while idling on active taxiways, which causes air quality deterioration at the airport. The ground management system provides airlines with airside operational information, including flight schedules and planned arrival and departure gates with accurate aircraft and vehicle surveillance and identification for a real-time view of surface operations. With this information, ramp operators and Air Traffic Control are given the tools to minimize aircraft departure taxi time and engine-on time. This results in reduced fuel consumption and emissions of criteria air pollutants and GHG on the airport. The



TARGET

Reduce aircraft idling, taxiing and approach times



TARGET

Reduce airport paper purchases by 5% by 2015



Port Authority will expand upon the ground management program used by United Airlines and implement airport-wide ground management, using Collaborative Decision Making (CDM) framework established at JFK to foster cooperation between all carriers operating at EWR.

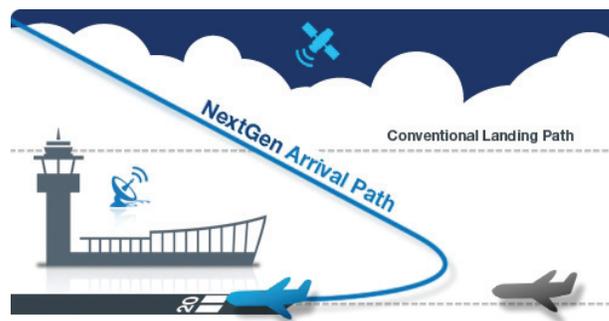


Modify approaches using Ground-Based Augmentation System (GBAS) and Required Navigation Performance (RNP)

FAA's Next Generation Air Transportation System (NextGen) advocates using satellite based precision approach procedures rather than current ground based instrumentation. Satellite based instrumentation can allow aircraft to follow more direct flight paths and approaches, resulting in fewer miles travelled and resulting reductions in fuel use and delays. RNP approaches allow for these efficiency gains and can save substantial amounts of fuel and time for operators. GBAS goes a step further and allows for precision based approaches for aircraft equipped with Global Positioning System (GPS) in very low visibility conditions. GBAS can help alleviate the major congestion resulting from low visibility conditions at EWR. The Port Authority installed GBAS at EWR and it is one of the first commissioned systems installed in the United States. The Port Authority will collaborate with the FAA on implementing these procedures.

Support additional NextGen activities while advocating that new procedures support environmental goals of organization

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. The Port Authority will coordinate with the FAA on the expansion of surface congestion management and the deployment of the full suite of NextGen technologies in the New York and New Jersey region. The FAA estimates that NextGen improvements will reduce delays 38 percent¹ by 2020 throughout the country.



Source: Federal Aviation Administration.

¹ http://www.faa.gov/nextgen/media/executive_summary_2012.pdf.



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 EWR and increase employee productivity. Increased use of tele- and videoconferencing technology as well as deploying web-based meeting capabilities will allow EWR employees to save fuel and reduce emissions since there will be a reduced need to travel to other facilities. Encouraging teleconferencing will save employees time and minimize traffic in the region. The time saved will increase employee productivity. In addition, deploying an expanded and improved inter facility shared document system that limits printing hard copies will reduce waste generation and minimize paper purchases. The Port Authority will work to expand the possibility of web-based collaboration when working on documents.

Establish default double-sided printing procedures

Minimizing waste in an office environment begins with reducing purchases of ongoing consumables. The Port Authority seeks to develop procedures that reduce outright costs and wasted resources. As one of the first steps in reducing paper purchases, EWR will establish the default setting on all copiers and printers to double-sided printing. For copiers and printers that do not have double sided capability, the Port Authority will investigate alternative equipment.

Investigate potential to streamline data logging, reporting and inspecting

EWR staff and personnel perform inspections for capital projects, regulatory compliance, and other airport projects. At this time, the Port Authority conducts most inspections and procedures in hard copy. Information is then transferred to computer databases for reporting. To simplify this process, the Port Authority will investigate the use of tablets and mobile devices for conducting inspections. Electronic data logging in the field will save paper and allow for easier integration into databases for reporting. In addition, inspection information can be tied to electronic manuals for easier verification of issues and problems in the field. Using tablet technology will save paper and time since the information will be easily downloaded into reporting and database software.

Develop paperless systems for day-to-day Port Authority processes

The Port Authority uses paper for many aspects of its administrative procedures at EWR. With the increased acceptance of electronic signatures, the Port Authority will review their practices to determine where paperless systems can be instituted at EWR, and use EWR as a test bed for similar agency-wide initiatives. Paperless systems reduce paper consumption, minimize emissions from the production of paper and the distribution of paper products to offices throughout the airport, minimize waste, reduce storage requirements for archiving records, and eliminate the need to scan in copies for archiving.



The Port Authority believes that understanding and addressing risks to infrastructure and operations resulting from predicted climate change impacts will give EWR 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 impacts².

Current Activities

The Port Authority is an active participant in New York City and New York State climate change efforts, as well as a participant in the New Jersey Turnpike Authority Technical Advisory Committee for its GHG Emissions Mitigation Plan. 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. 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

This evaluation is required for all capital project design by the Engineering Department.

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 EWR:

- Conduct climate change risk assessments for capital projects
- Communicate results of current climate change adaptation actions to stakeholders and tenants



TARGET

By December 2015, have in place a site-specific risk assessment and climate change adaptation action plan for EWR that addresses physical and operational resiliency related to potential climate change impacts

² 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.



- Establish tracking mechanism for additional costs arising from weather, to quantify potential impacts of climate change based on shifts and trends in weather events in the last ten years

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

- By December 2015, have in place a site-specific risk assessment and climate change adaptation action plan for EWR that addresses physical and operational resiliency related to potential climate change impacts.

Additional details for future initiatives are included below.

Conduct climate change risk assessments for capital projects

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

Communicate results of current climate change adaptation actions to stakeholders and tenants

The Port Authority is an active member in climate change adaptation planning in New York State and New York City, as well as GHG mitigation planning in northern New Jersey. These activities and future actions will be communicated to airport stakeholders, community members and others in order to share knowledge and best practices for adaptation strategies. EWR staff will communicate its climate change adaptation focused activities through its website, in public service announcements in the airport, and at public meetings.

Establish tracking mechanism for additional costs arising from weather, to quantify potential impacts of climate change based on shifts and trends in weather events in the last ten years

The Port Authority will continue to track costs incurred by severe weather. Using the high level infrastructure inventory completed in 2009, EWR 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, EWR will specifically anticipate costs associated with flooding and storm surge events. The cost tracking mechanism 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.

Focus Area	WATER MANAGEMENT
Goal	Minimize water consumption and continue to contribute to the protection of water quality in Newark Bay



Water conservation and water quality protection are important considerations at Newark Airport. The Port Authority prioritizes the protection of water quality at all facilities within the Port District. The Port Authority is constantly evaluating methods to improve airport water quality and reduce water consumption at all of its facilities in the region.

The Port Authority will develop a program consistent with the aviation industry’s Voluntary Pollution Reduction Program regarding airport deicing to contribute to the protection of the water quality in Newark Bay. The sustainable management plan will support the Voluntary Pollution Reduction Program.

Current Activities

The Port Authority has developed a Stormwater Best Management Practices (BMP) Plan for the Airport that outlines potential sources of stormwater contamination as well as practices and procedures to minimize contamination. The Authority uses several tools to manage stormwater, including:

- Water quality monitoring outflow results, including pH, TSS, TKN, TPHC, CBOD, and COD
- Airline tenants perform internal BMP inspections and make subsequent improvements if issues arise
- The Port Authority regularly inspects the airline tenant operational areas and ensures BMP compliance
- Maps of outfalls with discharges to surface waters on airport ground, including information on the locations of cross ditch booms, outfall booms, and proposed outfall booms

Future Initiatives

To continue to reduce water consumption at EWR and reduce the amount of pollutants entering Newark Bay, the Port Authority will take the following proactive role:

- Establish active management of landscape contracts to ensure correct planting times and minimize water use and weed growth
- Analyze all stormwater management options for new projects, including maximization of pervious surfaces
- Increase stormwater education BMPs where applicable
- Evaluate re-roofing projects for all sustainable roofing options, including green roofs, cool roofs, or solar energy installations
- Develop airport wide airfield deicing strategy to minimize deicer use while maintaining safe aircraft operation



TARGET

By 2014, develop and implement a deicing chemical use, collection and treatment plan that responds to the airport industry’s Voluntary Pollution Reduction Program and emphasizes minimized chemical use and maximum deployment of ‘environmentally friendly’ alternatives



- Develop airport wide aircraft deicing strategy to minimize deicing fluid runoff
- Maintain and enhance program for reducing sediment in peripheral ditch through improved maintenance operations
- Develop Terminal A aircraft deicing fluid controls
- Explore options to capture and re-use stormwater

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

- Develop and implement a deicing chemical use, collection and treatment plan that responds to the airport industry's Voluntary Pollution Reduction Program and emphasizes minimized chemical use and maximum deployment of 'environmentally friendly' alternatives by 2015

Additional details for future initiatives are included below.

Establish active management of landscape contracts to ensure correct planting times and minimize water use and weed growth

EWR has extensive vegetated areas. EWR will review landscape contracts and management practices to ensure that the correct procedures are used to reduce the need for excessive mowing and pesticide/herbicide use on vegetated areas. Carefully planned planting times, mowing heights, and monitoring can reduce wildlife hazards, invasive weeds, and ensure plant health and longevity.

Analyze all stormwater management options for new projects, including maximization of pervious surfaces

EWR seeks to minimize runoff from storms to surrounding waterways. Several strategies can minimize the volume and improve the quality of airport runoff by increasing detention capacity on-airport. Due to the operating characteristics of EWR, there are large amounts of impervious surfaces on the airport. The Port Authority seeks to minimize runoff by evaluating all feasible stormwater management strategies when building new projects. These strategies could include greywater and rainwater collection and reuse, installing surfaces that slow stormwater runoff, and increasing pervious surfaces where applicable.

Increase stormwater education BMPs

EWR takes a proactive stance in stakeholder education as it relates to spill response, stormwater management, and good housekeeping on the ramp and around the airport. Proactive pollution prevention training helps stakeholders prevent pollutants from entering the stormwater system. The Port Authority will review its stormwater best management practices and develop training materials and signage to educate stakeholders and the public at EWR. The Port Authority will also host events such as rampwide housekeeping days to reinforce its training and educational materials.

Evaluate re-roofing projects for all sustainable roofing options, including green roofs, cool roofs, or solar energy installations

Roofs make up a large portion of airport property and can contribute to stormwater runoff, excessive building energy use, and poor thermal insulation. Several sustainable roofing options are available. Green roofs employ a soil substrate and vegetation to provide additional insulation



and stormwater retention capacity for roofs, and are in use at several airports around the world. Cool roofs employ a light-colored membrane to reduce the heat gain that a black roof can contribute in the summer, reducing the regional heat island effect. Solar photovoltaic panels can be deployed on a roof to generate electricity for the building. EWR will evaluate all of these options when conducting re-roofing projects, and determine which strategy will best suit each individual project. Sustainable roofing projects will be done in accordance to the Port Authority *Sustainable Building Guidelines*.

Develop airport wide airfield deicing strategy to minimize deicer use while maintaining safe aircraft operation

During the winter of 2008-9, EWR used 400,775 gallons of potassium acetate and 3,677 tons of salt to deice roadways, taxiways, and runways on the airport. Airfield deicing fluids and salts drain into surrounding waterways and soils. The Port Authority will inventory current deicing practices on the airfield and determine methods for increasing the efficiency of the pavement deicing operation. The Port Authority will also conduct an evaluation of deicing equipment to determine whether efficiency gains can be made through equipment retrofits or replacement. EWR will also test alternative deicing products that have a smaller impact on surrounding soils and waterways.

Develop airport wide aircraft deicing strategy to minimize deicing fluid runoff

Deicing aircraft is an important safety procedure at airports during winter operations. Minimizing the amount of deicing fluid that enters local waterways is a priority for the Port Authority while maintaining safe aircraft operation. The Port Authority will regularly evaluate a list of recommended strategies and BMPs for air carriers and work with the carriers to modify and improve deicing practices to minimize fluid use and runoff. The Port Authority will also use the ground management program to minimize the need for secondary aircraft deicing due to aircraft exceeding holdover times.



Maintain and enhance program for reducing sediment in Peripheral Ditch through improved maintenance operations

The Peripheral Ditch drains an area within the City of Newark, as well as approximately 8.7 square miles on and around the Airport, and drains to Newark Bay. Airport stormwater runoff is conveyed to the Peripheral Ditch via surface swales and a subsurface network of drains and pipes. Since the ditch is an important drainage structure for the airport, the Port Authority will review BMPs and investigate the development of new strategies to decrease sediment volumes entering the ditch



at EWR. Minimizing sediment will reduce flood potential and increase water quality in Newark Bay. The airport will continue its program to remove floatables from the peripheral ditch around the airport.

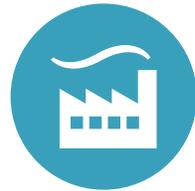
Develop Terminal A aircraft deicing fluid controls

The Port Authority is planning a major redevelopment project that will replace or substantially renovate the current Terminal A. The Port Authority will advocate that innovative deicing fluid controls be incorporated at Terminal A and work with carriers to ensure that deicing fluid controls are deployed to the maximum extent possible.

Explore options to capture and re-use stormwater

Stormwater can be reused for irrigation and as grey water in buildings. In drought-prone areas and in areas where wastewater treatment plants are reaching their design capacity, stormwater recycling can minimize the facility's water consumption and reduce the quantity of water entering a treatment facility after a storm. EWR will evaluate options to develop stormwater collection capacity at existing on-airport facilities.

Focus Area	AIR QUALITY AND GREENHOUSE GASES
Goal	Minimize EWR's contribution to climate change, air pollution and depletion of the ozone layer



As part of the goal to minimize air quality impacts, the Port Authority focuses on both local air quality as well as global impacts from emissions that occur as a result of operations at EWR. Local air quality is primarily affected by the concentration of criteria air pollutants, which include ozone, particulate matter (PM₁₀ 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 majority of on-airport NO_x, PM₁₀, PM_{2.5}, and GHG emissions are generated by aircraft. Emissions of SO_x result from building electricity use due to emissions from electric power plants. Airport Ground Support Equipment (GSE) and fleet vehicles also contribute to EWR's air pollutant emissions.

Current Activities

The Port Authority is committed to reducing its GHG emissions. Annual GHG emission inventories are conducted to understand the contributions from various sources. To address criteria air pollutant emissions, the Port Authority has conducted periodic criteria pollutant inventories for EWR since 2006. The Port Authority and its tenants have implemented many initiatives to reduce emissions of criteria air pollutants, GHGs and ozone-depleting substances. Energy and fuel management strategies, including reducing energy demand, increasing the use of renewable energy and alternative fuels and transitioning to more efficient equipment and aircraft, are successful in reducing emissions associated with energy and fuel use at EWR. The following initiatives have already been implemented at EWR:

- EWR has implemented extensive efficiency retrofits in buildings and the Central Heating and Refrigeration Plant (CHRP) and continues to evaluate its physical plant for further efficiency opportunities
- The Port Authority uses a 20% biodiesel blend (B-20) in all diesel vehicles that it operates.
- Hybrid and alternative fuel vehicles comprise 63% of the Port Authority vehicle fleet at EWR
- The large holding area known as the "The Yankee Ballpark" gives more flexibility for United Airlines to maneuver aircraft around Terminal C and reduces taxiing, enables aircraft to shut engines off and can be used for remain overnight (RON) aircraft. It has space for approximately ten aircraft
- All gates at the Airport are electrified to reduce the use of aircraft auxiliary power units and mobile ground power units at the gates
- Preconditioned air is provided at the majority of gates at the airport to reduce the need for aircraft to use their auxiliary power units for air conditioning and heating purposes



TARGET

Reduce Scope I and II greenhouse gas (GHG) emissions per aircraft operation from all operations, including stationary and mobile sources, by 10% by 2016 compared to the 2006 baseline inventory consistent with the overall Port Authority goal of an 80% reduction by 2050



Future Initiatives

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

- Develop standardized methods for recording and tracking energy use
- Investigate energy efficiency and renewable energy opportunities
- Perform life cycle cost analysis for new equipment purchases
- Provide simulator training for Port Authority and FAA employees driving equipment/ vehicles
- Evaluate use of gate power and pre-conditioned air (PCA)
- Consider Energy Services Company (ESCO) recommendations when investing in infrastructure/equipment
- Establish airport-wide vehicle anti-idling program
- Continue to purchase alternative fuel vehicles and incorporate life cycle costs
- Use outside funding to expand alternative fuel fleet vehicle program
- Investigate opportunities to increase alternative fuel vehicles in tenant fleets

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

- Reduce Scope I and II absolute 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
- Improve the efficiency of Port Authority controlled utility use by 10% per square foot for electricity and 10% per square foot for natural gas compared to the 2009 baseline.
- Reduce ground vehicle emissions of particulate matter and NO_x by 5% and 15% by 2016 compared to the 2009 baseline
- Increase the production and/or use of energy from sustainable sources at the airport to 200kW (or equivalent) by 2015
- Continue conversion of the Port Authority fleet at Newark Airport to hybrid/alternative fuels, such that 100% of light duty vehicles are hybrid/alternative fuel by 2015
- Reduce vehicle fuel consumption of Port Authority vehicles at Newark Airport by 10% per employee by 2015

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 to the Port Authority's commitment to further improve air quality and minimize greenhouse gas emissions at EWR.



TARGET

Improve the efficiency of Port Authority controlled utility use by 10% per square foot for electricity and 10% per square foot for natural gas compared to the 2009 baseline.



TARGET

Reduce ground vehicle emissions of particulate matter and NO_x by 5% and 15% by 2016, respectively



Develop standardized methods for recording and tracking 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 EWR. 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, as well as understanding per-building energy use. This initiative will also help compare buildings against each other at the facility by measuring their Energy Use Intensity (EUI). Benchmarking will help EWR staff implement measures to decrease energy consumption.

Investigate energy efficiency and renewable energy opportunities

The Port Authority will explore external funding options for improving energy efficiency to further deliver financial and environmental savings to EWR. Incentives that are available from federal, state, utility, and local funding resources will be used to complete energy projects. In addition, the Port Authority will specifically explore funding mechanisms offered by Energy Services Companies (ESCOs) and encourage tenants to participate in such programs. The Port Authority will continue to investigate the feasibility of renewable energy installations at the airport through various financing mechanisms. New capital projects utilizing the Port Authority *Sustainable Building Guidelines* will see significant decreases in energy use.

Perform life cycle cost analysis for new equipment purchases

Life cycle costs incorporate both the initial purchase price of a piece of equipment and the operating costs over the life of the equipment. This analysis can help the Port Authority choose equipment with the lowest long-term energy and maintenance costs to the airport. The Port Authority will incorporate these and other aspects into its process for buying new equipment.



Provide simulator training for Port Authority and FAA employees driving equipment/vehicles

All drivers that operate vehicles on the airside at EWR must go through extensive training to understand airport signs, lights, markings, operating procedures, and avoid runway incursions or conflicts with aircraft within the movement area. Currently, drivers go through many hours of on-airfield driver training in order to obtain certification to drive in the movement area. This training uses fuel, removes vehicles from their normal duty cycle, and creates potential safety hazards to aircraft and vehicles within the movement area. The Port Authority is exploring



TARGET

Increase the production and/or use of energy from sustainable sources at the airport to 200kW by 2015



simulator training programs that will reduce the number of hours required in actual vehicles on the movement area to complete the training. This will save fuel, provide a more complete range of situations for drivers to train in, and improve safety on the airfield.

Evaluate use of gate power and pre-conditioned air (PCA)

All gates at the Airport employ gate power (400 hz) and most gates provide preconditioned air (PCA) to reduce the use of aircraft auxiliary power units (APUs) and mobile ground power units at the gates. Gate Power and PCA reduce the need for aircraft to use APUs to supply electricity while waiting at the gates. The Port Authority would like to investigate any barriers to the use of gate power and PCA at EWR and help airlines make full use of the resources provided. In addition, the Port Authority will work with airlines to establish procedures for pilots that minimize the use of the APU in all situations at the airport.



Consider Energy Services Company (ESCO) recommendations when investing in infrastructure/equipment

Honeywell, an Energy Services Company (ESCO) completed an Investment Grade Audit (IGA) that identified major energy efficiency opportunities for EWR. As EWR invests in its physical plant, it will consider all recommendations provided within the IGA and explore funding opportunities for implementing similar strategies throughout the facility. Some strategies that EWR will consider are lighting retrofits, chiller replacements, improved building insulation and controls, and renewable energy installations.

Establish airport-wide vehicle anti-idling program

In cooperation with the tenants, the Port Authority will develop anti-idling training materials and guidelines for airport vehicle operators. The Port Authority will initiate outreach programs and an educational campaign for tenants and establish training programs at EWR. The Port Authority will conduct anti-idling outreach programs for external shuttle and livery companies through curbside signage and driver education. Additionally, the Port Authority will increase awareness of New Jersey's anti-idling law, which prohibits vehicle idling for periods longer than three minutes at EWR.

Continue to purchase alternative fuel vehicles and incorporate life cycle costs

Sixty-three percent of EWR's fleet vehicles are alternative fuel vehicles. The Port Authority is committed to converting its entire light duty fleet to alternative fuel vehicles. Several types of alternative vehicles are available, including electric vehicles, plug-in hybrid electric vehicles, compressed natural gas, biodiesel-capable, flex-fuel, and bi-fuel. When purchasing vehicles,



TARGET

Continue conversion of EWR fleet so that 100% of light duty vehicles are alternative fuel vehicles by December 2015



TARGET

Reduce vehicle fuel consumption of Port Authority vehicles at Newark Airport by 10% per employee by 2015.



the Port Authority will choose technologies that help it meet its GHG reduction goals while satisfying the operational needs of the airport. The Port Authority will aim to ensure that vehicle technologies provide the lowest life cycle costs compared to other technologies, and reduce the agency's exposure to fluctuating energy costs to the maximum extent possible.



Use outside funding to expand alternative fuel fleet vehicle program

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 acquire vehicles that minimize GHG emissions. The Port Authority will research existing funding mechanisms and apply for grants to purchase alternative fuel vehicles.

Investigate opportunities to increase alternative fuel vehicles in tenant fleets

The Port Authority will work with tenants to develop airside and landside infrastructure that supports tenant acquisition of alternative fuel vehicles. The Port Authority will specifically work with airline tenants to advance efforts in electrifying tenant fleets of GSE and other airside vehicles to improve air quality for airport employees. The Port Authority will identify any barriers to entry for e-GSE acquisition and explore funding mechanisms to remove those barriers.

Focus Area	SOLID WASTE MANAGEMENT AND RECYCLING
Goal	Minimize the generation of solid waste (including universal, hazardous, and construction wastes), and reuse and recycle waste to the maximum extent possible



The State of New Jersey has a recycling goal of 50 percent. As part of the New Jersey Statewide Mandatory Source Separation and Recycling Act, the list of materials identified for recycling by the City of Newark includes newspapers, office papers, magazines, glass, aluminum, plastic, corrugated containers, leaves, white goods, motor oil, vehicle batteries, consumer batteries, steel and tin containers, ferrous scrap, and automobile tires. The materials identified by the City of Elizabeth include newspapers, office papers, glass, aluminum, plastic, food waste, corrugated containers, leaves, grass, brush, white goods, motor oil, antifreeze, motor oil filters, vehicle batteries, consumer batteries, fluorescent bulbs, computers and peripherals, steel and tin containers, ferrous scrap, automobile tires, wood, masonry, roofing material, and construction and demolition 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.”

Currently, the Port Authority manages recycling activities for those spaces that are controlled by the Authority, including Terminal B, Building 1, Building 79, and Building 80. The Port Authority also helped to establish the public area recycling program in Terminal A (where responsibility for waste removal is shared among the Port Authority and several airlines). The Port Authority recycling programs are implemented separately from those of United Airlines, UPS, and FedEx. Port Authority policy requires that contractors recycle 75 percent of certain demolition debris items, which currently include asphalt, Portland cement concrete (PCC), and clean soil.

Current Activities

At EWR, the tenants generate the majority of solid waste. The Port Authority and its tenants have instituted the following activities to recycle and reduce waste:

- Terminals A and B and Buildings 1, 79, and 80 provide public area recycling for mixed paper and bottles and cans
- Terminal A concessionaires recycle cardboard
- Terminal C provides public area, single-stream recycling for mixed paper and bottles and cans
- Cooking oil and fats are recycled in all three terminals



TARGET

Reduce landfilled waste generated by Port Authority operations at the Airport by 15% per passenger by 2016 using a 2009 baseline



Future Initiatives

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

- Develop and implement office waste minimization program
- Increase construction waste recycling beyond current guidelines and requirements
- Set up and run annual e-waste collection event for employees
- Perform a waste composition study to identify additional ways to reduce/recycle waste
- Expand recycling efforts to include additional locations and materials (e.g. compost food waste from concessionaires, recycle restaurant grease). Work with airlines to establish or expand their recycling efforts
- Explore potential for consolidation of waste hauling
- Work with concessionaires to reduce packaging and minimize/shift paper and plastic bag use

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

- Reduce landfilled waste generated by Port Authority operations at the Airport by 15% per passenger by 2016 using a 2009 baseline
- Establish a food waste composting program among terminal concessionaires by 2016
- Expand the recycling of construction waste to include all feasible materials by 2020

Additional details for future initiatives are included below.

Develop and implement office waste minimization program

The Port Authority believes that developing and implementing an office waste minimization program in conjunction with other paper use reduction efforts will reduce the amount of office waste generated. Using the results of the waste audit discussed below, the Port Authority will identify major sources of ongoing consumables waste and establish source reduction efforts.



TARGET

Establish a food waste composting program among terminal concessionaires by 2016.



Increase construction waste streams beyond current guidelines and requirements

A Port Authority-wide policy requires that contractors recycle 75% of certain demolition debris items, which currently include asphalt, Portland cement concrete (PCC), and clean soil. Recycling construction wastes reduces the need for landfill space and reduces the cost of construction since recycling is more cost effective than disposal. The Port Authority believes that additional construction waste streams can be recycled. The Port Authority will identify additional recoverable material and work with contractors to establish recycling programs and regular reporting.

Set up and run annual e-waste collection event for employees

The Port Authority collects electronic waste in accordance with New Jersey and federal law, and is committed to expanding e-waste collection at EWR. 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 waste stream.

Perform a waste composition study to identify additional ways to reduce/recycle waste

The Port Authority will perform a comprehensive waste composition study 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 study, 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.

Expand recycling efforts to include additional locations and materials (e.g. compost food waste from concessionaires, recycle restaurant grease). Work with airlines to establish or expand their recycling efforts

The results of the waste composition study will allow the Port Authority to identify materials that can be recycled by tenants and concessionaires. The Port Authority will recommend improvements to existing tenant recycling programs; work with restaurant concessionaires to establish a food waste compost program and work to expand this program to all passenger terminals; and work to accommodate segregated recyclables recovered from deplaned waste.



TARGET

Expand the recycling of construction waste to include all feasible materials by 2020





Explore potential for consolidation of waste hauling

As part of the waste audit initiative, the Port Authority will coordinate with tenants to explore the feasibility of a system that will consolidate waste and recycling programs and create a consolidated airport waste removal contract. A consolidated contract will allow for significant cost savings for the Port Authority and tenants, as well as significant increases in recycled materials. 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 maximize the recycling diversion ratio and minimize the amount of waste entering landfills in the region.

Work with concessionaires to reduce packaging and minimize/shift paper and plastic bag use

Packaging provided by concessionaires for food products and other items may present barriers to maximizing the number of recoverable recyclables collected at the airport, due to customer confusion when discarding food products and packaging. The Port Authority will work with tenants to develop a trial area for exploring appropriately sized, recoverable or recyclable packaging for food along with simplified recycling containers and signage. The Port Authority will also work with concessionaires to reduce bag use and the amount of ongoing consumables waste created at each concession.

Focus Area**GROUND TRANSPORTATION****Goal**

Reduce emissions from ground transportation and reduce reliance on single occupancy vehicles as a means of traveling to and from Newark Airport



In 2009, approximately 33 million people traveled through EWR. Along with the thousands of people who work on or near the airport both for the Port Authority and airport tenants, EWR is a convergence point for commuters, employees, and passengers. With the large number of vehicles that travel to and from EWR, the Port Authority is in an advantageous position to reduce single occupancy vehicle travel. Improvements in traffic flow, mass transport, and shuttle service will decrease traffic congestion and enhance the quality of life for people who work and live near each of the airports. The Port Authority is committed to reducing the number of single occupancy trips associated with its operations.

Current Activities

The Port Authority reduces single occupancy vehicle travel with the following activities:

- EWR is accessible by both passenger rail and urban bus routes to/from a variety of locations including major cities in New Jersey, all boroughs of New York City, parts of Pennsylvania and Connecticut, and beyond
- In 2010, to promote public transit as a viable option for travel to work, the Port Authority implemented a pilot program that waives the monthly fee to ride AirTrain for Port Authority employees
- Shared-ride vans provide passengers with an economical alternative to taxicabs or limousines. These vans are available on-demand at the curbside, and carry multiple parties to multiple destinations

Future Initiatives

EWR will expand its access to mass transit and other strategies to reduce single occupancy vehicles with the following actions:

- Support implementation of Port Authority employee ridesharing program
- Establish program to encourage increased use of hybrid/alternative fuel commercial shuttles (or consolidation/reduced use of existing shuttles)
- Develop sustainability standards for Shared Ride shuttles
- Develop sustainability standards for off-airport parking shuttles
- Explore methods of encouraging fuel efficient cab programs

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

- Reduce vehicle fuel consumption by operators providing access to the Airport (taxi, hotel and rental car shuttles) by 10% per passenger by 2020

**TARGET**

Reduce vehicle fuel consumption by operators providing access to the Airport (taxi, hotel and rental car shuttles) by 10% by per passenger by 2020



Additional details for future initiatives are included below.

Support implementation of Port Authority employee ridesharing program

Rideshare programs eliminate millions of miles of travel on the region's highways and reduce GHG emissions. Ridesharing provides a less stressful and costly commute for employees. The Port Authority is preparing to implement an informal ridesharing program for employees to increase the number of carpools and vanpools and help employees find effective ways to use public transportation for their commute. The Port Authority will take steps to publicize the program to both Port Authority central office and EWR staff.

Establish program to encourage increased use of hybrid/alternative fuel commercial shuttles (or consolidation/reduced use of existing shuttles)

Commercial shuttles transport passengers from EWR terminals to area hotels as well as destinations such as New York City. The shuttles operate under agreements with the Port Authority. The Port Authority will work with the operators to understand their requirements and determine the number of existing alternative fuel vehicles. The Port Authority will then establish targets for alternative fuel vehicles to limit emissions and the number of trips to destinations to minimize congestion at EWR. The Port Authority will work to codify targets for alternative fuel vehicles and trip reduction in agreements with operators.



Develop sustainability standards for Shared Ride shuttles

Shared Ride shuttles are passenger shuttles that operate under an agreement with the Port Authority. These shuttles allow passengers to travel to and from EWR without using a single occupancy vehicle. The Port Authority will work with shuttle operators to establish sustainability standards for the vehicles and ensure that they are complying with New Jersey's anti-idling law.

Develop sustainability standards for off-airport parking shuttles

There are a number of off-airport parking vendors who use shuttles to bring passengers to the airport terminals. To minimize congestion and pollutants, the Port Authority will develop sustainability standards for shuttles that transport passengers from EWR terminals to parking lots, in collaboration with the shuttle operators. The Port Authority will work with the operators to understand their requirements and determine the number of existing alternative fuel vehicles. The Port Authority will work with them to establish goals for alternative fuel vehicles to limit emissions and the number of trips to minimize congestion at EWR. The Port Authority will also ensure that the shuttle operators are complying with New Jersey's anti-idling law.



Explore methods of encouraging fuel efficient cab programs

Currently, the taxicab fleet at EWR is registered in and regulated by the cities of Newark and Elizabeth, NJ. The taxicab fleet encompasses a diverse mix of vehicles and the airport operation is controlled by a central dispatch for each terminal. The airport will explore ways to incentivize the use of alternative fuel or fuel efficient cabs. The airport will also ensure that the cab operators are complying with New Jersey's anti idling law.



Focus Area	COMMUNITY OUTREACH
Goal	Enhance communication with the airport community



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, EWR hosts a variety of educational and community events, which range from career days to help students explore aviation career opportunities, to a Traveler's Aid Thank You Brunch. Many Port Authority and EWR staff meet regularly with local community boards, participate in community forums and serve in community organizations during their spare time.

Current Activities

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

- EWR works with the Aviation Development Council (ADC) to promote and manage the Airport community watch program. ADC has also launched the Airports Do Care community outreach program
- ADC meets with local officials to ensure that the communities surrounding the Airport have an open dialogue with a representative of the region's aviation industry on matters such as aircraft noise abatement, traffic congestion, airport construction projects, and other important quality of life issues
- 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
- The Port Authority installed sound insulation in several local schools

Future Initiatives

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

- Initial and recurring sustainability training for employees
- Develop an internal and external communication plan to report on sustainability performance
- Establish a sustainability coordinator position at EWR to implement and monitor the sustainable management plan
- Develop job fairs for members of the surrounding communities



TARGET

By June 2014, expand community engagement activities to serve a broad representation of Airport and off-Airport communities



TARGET

Agree on key performance metrics and implement a data reporting system at the Airport by January 2013 to track and report progress toward sustainability targets



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 to track and report progress toward sustainability targets
- By January 2014, have at least one program that addresses sustainability training, education, or awareness for each of the following stakeholder groups: 1) employees, 2) tenants, 3) passengers, and 4) the community
- By January 2014, have procedures in place to measure and communicate annual cost savings from sustainability initiatives to monitor and improve progress
- By January 2014, develop an Airport related program which promotes training and employment opportunities in the region

Additional details for future initiatives are included below.

Initial and recurring sustainability training for employees

The Port Authority will develop a sustainability awareness program for EWR 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, and tenant awareness roundtables and coordination.

Develop an internal and external communication plan to report on sustainability performance

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, Port Authority staff will prepare an annual sustainability report card that outlines sustainability achievements and other EWR programs such as stormwater management and noise abatement. EWR management will keep stakeholders aware of its sustainability efforts on a continued basis.



TARGET

By January 2014, have at least one program that addresses sustainability training, education, or awareness for each of the following stakeholder groups: 1) employees, 2) tenants, 3) passengers, and 4) the community



TARGET

By January 2014, have procedures in place to measure and communicate annual cost savings from sustainability initiatives to monitor and improve progress



Establish a sustainability coordinator position at EWR to implement and monitor the sustainable management plan

As part of the development of this sustainable management plan, EWR will designate a sustainability coordinator. The sustainability coordinator will take the lead in sustainability program implementation and stakeholder engagement at EWR with support from all airport staff as well as others within the Port Authority.

Develop job fairs for members of surrounding communities

EWR is an economic engine for the region. EWR believes that expanding the number of local residents who are employed by EWR and its tenants improves not only the economy of the community, but also its social network. The Port Authority will continue to support and host job fairs for local community members to increase their employment opportunities.



TARGET

By January 2014, develop an Airport related program which promotes training and employment opportunities in the region



While developing the sustainability baseline report, the Port Authority performed an assessment of its policies and written agreements with airport stakeholders and tenants. As the Port Authority implements the EWR sustainable management plan, it acknowledges that it needs to integrate sustainability in a systematic manner.

Current Activities

As evidenced under other goals, the Port Authority has developed numerous programs that integrate sustainability into its business practices. The following activities show this integration:

- Sustainability Design Guidelines
- Construction Debris Recycling Program
- GHG emission reduction activities
- Alternative Fuel Vehicle Program
- Integration of aviation department recycling policy into airport rules and regulations

Future Initiatives

The Port Authority will further expand its integration with the following actions:

- Provide sustainability information and incentives to employees, tenants and contractors
- Investigate and develop partnerships with tenants to advance sustainability priorities

Additional details for future initiatives are included below.

Provide sustainability information and incentives to employees, tenants and contractors

Several components of the sustainable management plan will result in long term operating cost reductions and process improvements for tenants. The Port Authority will provide cost saving information to employees, tenants and contractors to build a greater understanding of the purposes and justification behind the initiatives detailed in this plan. Additionally, the Port Authority will share best practices and lessons learned with stakeholders. In addition, the Port Authority will investigate the best methods for incentivizing sustainability practices among tenants. This proactive process will allow for successful integration of the sustainable management plan in tenant controlled space.

Investigate and develop partnerships with tenants to advance sustainability priorities

As the sustainability program progresses, the Port Authority will memorialize and publicize tenant progress on sustainability initiatives. Tenants at the airport are very engaged in sustainability on a corporate or facility level and the Port Authority would like to collaborate with tenants, share best practices, and highlight tenant achievements.



The Port Authority has a responsibility to provide a healthy and productive workplace where employees feel that they are providing a service to the Airport community and to the wider regional community. The Port Authority provides resources for career advancement and workplace satisfaction. The sustainability program includes measures to improve workplace health and productivity.

Current Activities

The Port Authority has several programs that increase workplace satisfaction:

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

Future Initiatives

The Port Authority will further expand its commitment to workplace satisfaction with the following actions:

- Conduct annual sustainability events for employees, tenants, and the public
- Introduce employee health competition to improve motivation
- Develop internal Indoor Air Quality (IAQ) Management Plan and increase use of environmentally preferable cleaning products
- Work with food service operators to provide education on healthy eating and food choices
- IAQ Management contract enforcement for facility alterations and additions and regular stakeholder outreach



Additional details for future initiatives are included below.

Conduct annual sustainability events for employees, tenants, and the public

As part of the communication plan and the integration of sustainability practices into day to day operations, the Port Authority will host events for employees, tenants, and the public to raise awareness of sustainability issues at EWR. These events may focus on best practices into day to day operations both in the workplace and at home to expand the reach of the sustainability management plan beyond the airport.

Introduce employee health competition to improve motivation

The Port Authority is committed to a healthy, active, and engaged workforce. The Port Authority wants to provide a safe and healthy work environment for its employees. The Port Authority will expand upon current programs that incentivize employee health and fitness.

Develop internal IAQ Management Plan and increase use of environmentally preferable cleaning products

The Port Authority prides itself on providing a healthy work environment for its employees. At EWR, less than three indoor air quality complaints are received per year on average. To further reduce the number of complaints and provide for more systematic monitoring and reporting, the Port Authority will formalize existing practices into an Indoor Air Quality Management Plan. This plan will specify regular air quality testing and monitoring to create a more proactive and healthy work environment. In addition, the Indoor Air Quality Management Plan will specify the use of environmentally preferable cleaning products for all critical areas.

Work with food service operators to provide education on healthy eating and food choices

EWR seeks to provide a variety of healthy food choices for employees working at the airport. The Port Authority will work with the on-site cafeteria operator and other concessionaires at the airport to expand upon the selection of healthy food and provide nutritional information to employees, tenants, contractors, and passengers.

IAQ Management contract enforcement for facility alterations and additions and regular stakeholder outreach

Port Authority and tenant construction activities can cause indoor air quality deterioration if not properly managed and controlled. Most construction contracts require isolating sensitive areas, among other measures, during periods of indoor construction at EWR. Ensuring proper source control and isolation of construction activities can avoid deterioration of air quality in occupied spaces. Working with contractors to develop an enforceable IAQ Management Plan for all alterations and additions will allow for a more healthy environment for employees and passengers.

IMPLEMENTATION OF THE PLAN



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 EWR.

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

EWR 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 programs 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.

EWR Green Team: responsible for representing EWR 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. 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 action plans:

- 1) Describe the tasks that must be performed to complete the initiative
- 2) Provide an implementation schedule
- 3) List personnel responsible for each task
- 4) Specify the resource and cost allocation by task
- 5) Identify the associated metrics needed to track and report back progress for each initiative

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 improvement to the sustainability performance of EWR. 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 EWR will be through the modernization and sustainable operations of the infrastructure and assets at the airport and adherence to the requirements in the guideline 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 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 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 EWR.

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 (PAIs). 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.

EWR Sustainability Scorecards

Newark 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 expected to save the Port Authority \$ and x gallons of fuel, 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 Newark Airport.

Signed,

Newark Airport General Manager

EXAMPLE FORM

Quick Glance-Sustainability by the Numbers

<p>CO2 Savings</p> <p style="font-size: 1.2em; font-weight: bold;">xxx tons</p>	<p>Recycling Diversion Ratio</p> <p style="font-size: 1.2em; font-weight: bold;">X%</p>
<p>Electricity Savings</p> <p style="font-size: 1.2em; font-weight: bold;">xxx kWh</p>	<p>Recycling Diversion Ratio-Improvement from 2012</p> <p style="font-size: 1.2em; font-weight: bold;">X%</p>
<p>Natural Gas Savings</p> <p style="font-size: 1.2em; font-weight: bold;">xxx therms</p>	<p>Sustainability Initiatives Underway</p> <p style="font-size: 1.2em; font-weight: bold;">X%</p>
<p>Ground Vehicle Fuel Savings</p> <p style="font-size: 1.2em; font-weight: bold;">X Gallons/Employee</p>	<p>Sustainability Initiatives Planned-2014</p> <p style="font-size: 1.2em; font-weight: bold;">X%</p>

Operational Efficiency	Focus Area
Incorporate sustainability principles into the long-term business strategy and day-to-day operations of the Airport, building on existing systems and standard operating procedures	Goal

Initiatives	Status	Implementation Details	Completion Date
Implement full airside ground management program			
Modify approaches using Ground-Based Augmentation System (GBAS) and Required Navigation Performance (RNP)			
Support additional NextGen activities while advocating that new procedures support environmental goals of organization			
Establish more extensive teleconference/Webex/shared documents systems for intra- and inter-facility communication			
Establish default double-sided printing procedures			
Investigate potential to streamline data logging, reporting and inspecting			
Develop paperless systems for day-to-day Port Authority processes			

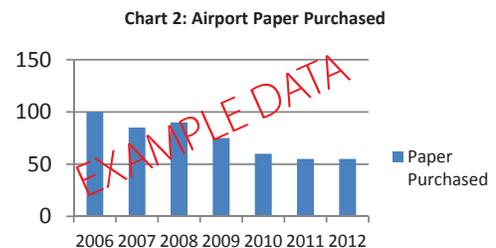
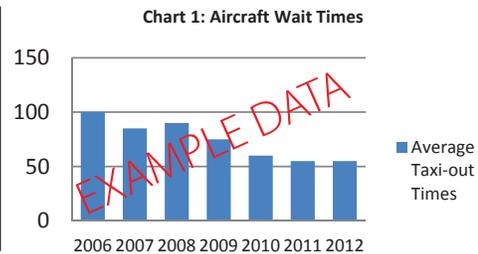
Targets

Reduce aircraft idling, taxiing, and approach times

- Metric: Average Taxi-out Times
- Baseline: None
- Current: None
- Performance to date:

Reduce airport paper purchases by 5% by 2015

- Metric: Paper Purchased
- Baseline: None
- Current: None
- Performance to date:



Climate Change Adaptation	Focus Area
Address the impacts of predicted changes in climate and weather conditions in order to provide continuing operations at the Airport.	Goal

Initiatives	Status	Implementation Details	Completion Date
Conduct climate change risk assessments for capital projects			
Communicate results of current climate change adaptation actions to stakeholders and tenants			
Establish tracking mechanism for additional costs arising from weather, to quantify potential impacts of climate change based on shifts and trends in weather events in the last ten years			

Targets	By 2015, have in place a site-specific risk assessment and climate change adaptation action plan for Newark Airport that addresses physical and operational resiliency related to potential climate change impacts	Performance to date:
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Water Management	Focus Area
Minimize water consumption and continue to contribute to the protection of water quality in Newark Bay.	Goal

Initiatives	Status	Implementation Details	Completion Date
Establish active management of landscape contracts to ensure correct planting times and minimize water use and weed growth			
Analyze all stormwater management options for new projects, including maximization of pervious surfaces			
Increase stormwater education BMPs			
Evaluate re-roofing projects for all sustainable roofing options, including green roofs, cool roofs, or solar energy installations			
Develop airport wide airfield deicing strategy to minimize deicer use while maintaining safe aircraft operation			
Develop airport wide aircraft deicing strategy to minimize deicing fluid runoff			
Maintain and enhance program for reducing sediment in peripheral ditch through improved maintenance operations			
Develop Terminal A aircraft deicing fluid controls			
Explore options to capture and re-use stormwater			

Targets	By 2014, have in place a deicing chemical use, collection and treatment plan that responds to the airport industry's Voluntary Pollution Reduction Program and emphasizes minimized chemical use and maximum deployment of 'environmentally friendly' alternatives	Performance to date:
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Air Quality and Greenhouse Gas	Focus Area
Minimize EWR's contribution to climate change, air pollution, and depletion of the ozone layer	Goal

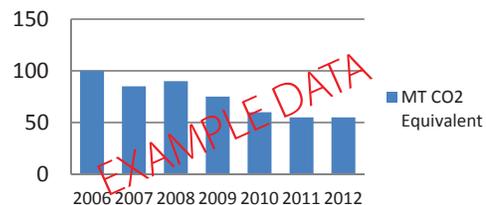
Initiatives	Status	Implementation Details	Completion Date
Develop standardized methods for recording and tracking energy use			
Investigate energy efficiency and renewable energy opportunities			
Perform life cycle cost analysis for new equipment purchases			
Provide simulator training for Port Authority and FAA employees driving equipment/vehicles			
Evaluate use of gate power and pre-conditioned air (PCA)			
Consider Energy Services Company (ESCO) recommendations when investing in infrastructure/equipment			
Establish airport-wide vehicle anti-idling program			
Continue to purchase alternative fuel vehicles and incorporate life cycle costs			
Use outside funding to expand alternative fuel fleet vehicle program			
Investigate opportunities to increase alternative fuel vehicles in tenant fleets			

Targets

Reduce Scope I and II absolute 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:

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



Air Quality and Greenhouse Gas	Focus Area
Minimize EWR's contribution to climate change, air pollution, and depletion of the ozone layer	Goal

Targets

Improve the efficiency of Port Authority controlled utility use by 10% per square foot for electricity and 10% per square foot for natural gas compared to the 2009 baseline.

- Metric: Electricity/Floor Area (kwh/ft2)
- Baseline: None
- Current: None
- Performance to date:

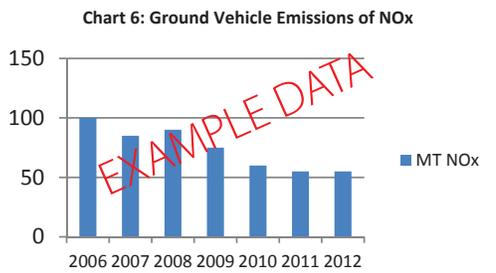
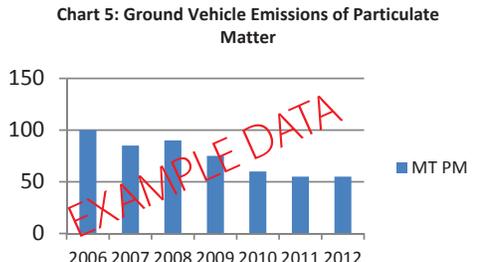
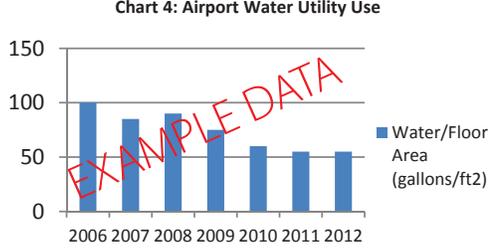
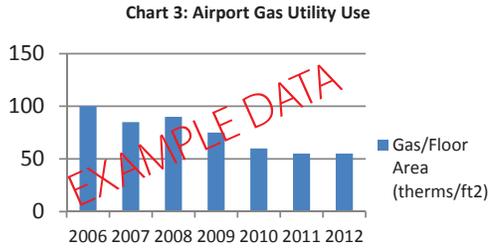
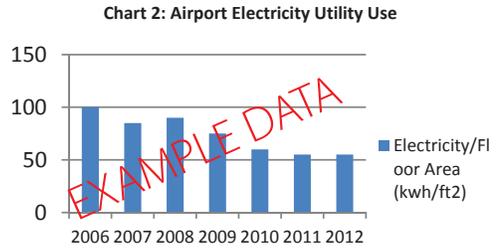
- Metric: Gas/Floor Area (therms/ft2)
- Baseline: None
- Current: None
- Performance to date:

- Metric: Water/Floor Area (gallons/ft2)
- Baseline: None
- Current: None
- Performance to date:

Reduce ground vehicle emissions of particulate matter and NOx by 5% and 15% by 2016 compared to the 2009 baseline

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

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

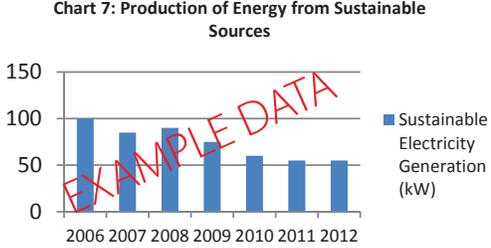


Air Quality and Greenhouse Gas	Focus Area
Minimize EWR's contribution to climate change, air pollution, and depletion of the ozone layer	Goal

Targets

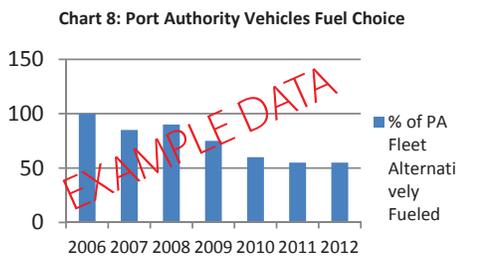
Increase the production and/or use of energy from sustainable sources at the airport to 200kW (or equivalent) by 2015

- Metric: Sustainable Electricity Generation (kW)
- Baseline: None
- Current: None
- Performance to date:



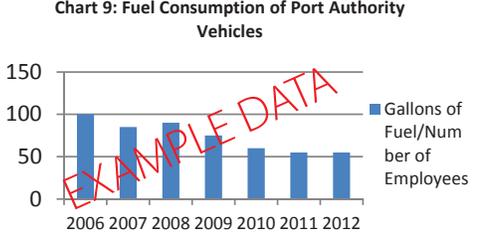
Continue conversion of the Port Authority fleet at Newark Airport to hybrid/alternative fuels, such that 100% of light duty vehicles are hybrid/alternative fuel by 2015

- Metric: Percentage of PA Fleet Alternately Fueled
- Baseline: None
- Current: None
- Performance to date:



Reduce vehicle fuel consumption of Port Authority vehicles at Newark Airport by 10% per employee by 2015

- Metric: Gallons of Fuel/Number of Employees
- Baseline: None
- Current: None
- Performance to date:



Solid Waste Management and Recycling	Focus Area
Minimize the generation of solid waste (including universal, hazardous, and construction wastes), and reuse and recycle collected waste to the maximum extent possible.	Goal

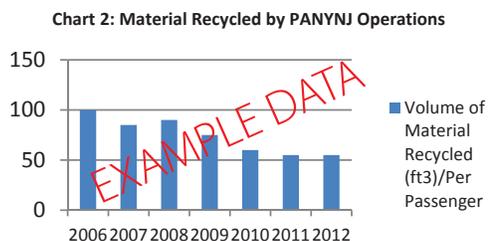
Initiatives	Status	Implementation Details	Completion Date
Develop and implement office waste minimization program			
Increase construction waste recycling beyond current guidelines and requirements			
Set up and run annual e-waste collection event for employees			
Perform a waste composition study to identify additional ways to reduce/recycle waste			
Expand recycling efforts to include additional locations and materials (e.g. compost food waste from concessionaires, recycle restaurant grease). Work with airlines to establish or expand their recycling efforts			
Explore potential for consolidation of waste hauling			
Work with concessionaires to reduce packaging and minimize/shift paper and plastic bag use			

Targets

Reduce landfilled waste generated by PANYNJ operations at the Airport by 15% per passenger by 2016 using a 2009 baseline

- Metric: Volume of Waste to Landfill (ft3)/Per Passenger
- Baseline: None
- Current: None
- Performance to date:

- Metric: Volume of Material Recycled (ft3)/Per Passenger
- Baseline: None
- Current: None
- Performance to date:



Solid Waste Management and Recycling	Focus Area
Minimize the generation of solid waste (including universal, hazardous, and construction wastes), and reuse and recycle collected waste to the maximum extent possible.	Goal

Targets

By 2016, establish a food waste composting program among terminal concessionaires

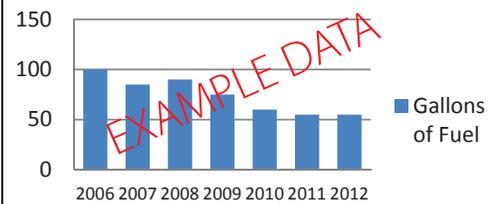
Performance to date:

Ground Transportation	Focus Area
Reduce emissions from ground transportation and reduce reliance on single occupancy vehicles as a means of traveling to and from Newark Airport.	Goal

Initiatives	Status	Implementation Details	Completion Date
Support implementation of PA employee ridesharing program			
Establish program to encourage increased use of hybrid/alternative fuel commercial shuttles (or consolidation/reduced use of existing shuttles)			
Develop sustainability standards for Shared Ride shuttles			
Develop sustainability standards for off-airport parking shuttles			
Explore methods of encouraging fuel efficient cab programs			

Targets	<p>Reduce vehicle fuel consumption by operators providing access to the Airport (taxis, hotel and rental car shuttles) by 10% by 2020</p> <ul style="list-style-type: none"> • Metric: Gallons of Fuel • Baseline: None • Current: None • Performance to date:
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Chart 1: Vehicle Fuel Consumption by Operators



Community Outreach	Focus Area
Enhance communication with, and in support of, the airport community.	Goal

Initiatives	Status	Implementation Details	Completion Date
Initial and recurring sustainability training for employees			
Develop an internal and external communication plan to report on sustainability performance			
Establish a sustainability coordinator position at EWR to implement and monitor the sustainable management plan			
Develop job fairs for members of the surrounding communities			

Targets	By June 2014, expand community engagement activities to serve a broad representation of Airport and off-Airport communities	Performance to date:
	Agree on key performance metrics and implement a data reporting system at the Airport by January 2013 so progress toward sustainability targets can be tracked and reported to stakeholders	Performance to date:
	By January 2014, have at least one program in place which addresses sustainability training, education, or awareness for each of the following stakeholder groups: 1) employees, 2) tenants, 3) passengers, and 4) the community	Performance to date:
	By January 2014, have procedures in place to measure and communicate annual cost savings from sustainability initiatives to monitor and improve progress	Performance to date:
	By January 2014, develop an Airport related program which promotes training and employment opportunities in the region	Performance to date:

Contract and Lease Management	Focus Area
Integrate sustainable practices into internal policies, business processes, and written agreements.	Goal

Initiatives	Status	Implementation Details	Completion Date
Provide sustainability information and incentives to employees, tenants and contractors			
Investigate and develop partnerships with tenants to advance sustainability priorities			

Health and Welfare of Employees	Focus Area
Provide opportunities and incentives to improve the health and welfare of employees.	Goal

Initiatives	Status	Implementation Details	Completion Date
Conduct annual sustainability events for employees, tenants, and the public			
Introduce employee health competition to improve motivation			
Develop internal Indoor Air Quality (IAQ) Management Plan and increase use of environmentally preferable cleaning products			
Work with food service operators to provide education on healthy eating and food choices			
IAQ Management contract enforcement for facility alterations and additions and regular stakeholder outreach			

EWR Sustainability Metrics

	Units	Baseline Year	Calendar Year
		2006	2009
Airport Profile			
Total Airport Revenue	\$	665,431,000	729,120,000
Annual number of aircraft movements	Number	445,258	411,176
Enplaned passengers	Number	35,634,699	33,399,207
Total number of airlines	Number and floor area (Ft ²)	33	33; Terminal A: 469,000 Terminal B: 189,000 Terminal C: 1,850,000
Number of aircraft gates	Number	n/a	114; TA: 33, TB: 24, TC: 57
Total number of concessionaires	Number and floor area (Ft ²)	n/a	TA: 29, TB: 32, TC: 79 TA and TB: 60,400
Total terminal and Port Authority office treated floor area	Floor area (Ft ²)		PA buildings: 386,050 PA terminals: 720,143 PA hangars: 132,635
Total construction projects	Value of construction projects (\$)		189,100,000
Scope of the report	Port Authority operations and facilities only		
Greenhouse Gas Emissions			
Total direct and indirect GHG emissions;	MT CO _{2e}	1,188,611	1,168,430 (2008 data)
CO _{2e} emissions per operation;	MT CO _{2e} /operation	2.66	2.69 (2008 data)
Scope 1 and 2 CO _{2e} emissions	MT CO _{2e}	18,077	18,631 (2008 data)
Scope 3 CO _{2e} emissions	MT CO _{2e}	1,170,534	1,149,799 (2008 data)
Tons per year savings (compared to 2006)	MT CO _{2e}	n/a	20,181 (2008 data)
Offsets procured (including RECs)	MT CO _{2e} and \$	0	82,500 (2008 data)

EWR Sustainability Metrics (continued)

	Units	Baseline Year	Calendar Year
		2006	2009
Air Quality			
Criteria air pollutant emissions	Metric tonnes	n/a	NOx: 3892 (2008 data) SO2: 1107 (2008 data) PM10: 264 (2008 data) PM2.5: 230 (2008 data)
Electric power at gates	Percentage of total gates	n/a	TA: 100% TB: 100% TC: 100%
Preconditioned air at gates	Percentage of total gates	n/a	TA: 92% TB: 21% TC: 100%
Ozone depleting substances	Tons	n/a	n/a
Energy			
Gasoline used	Gallons	n/a	219,040 (2010 data)
Diesel fuel used	Gallons	n/a	207,394 (2010 data)
CNG used	Gge	n/a	n/a
Electricity used	kWh	71,797,100	82,512,791
Natural gas	therms, therms/pax, therms/ft2	2,158,039	2,480,328
Renewable energy generated on site	kWh output	0	0
Amount of energy purchased from renewable sources	kWh	0	0
Aircraft Fuel			
Total aircraft fuel consumed by type	Gallons	734,964,230	673,963,024
Alternative aviation fuel consumed	Gallons	0	0
Noise			
Number of people residing within DNL 65	Number of people	26,300 (2000data)	25,400 (2008 data)
Square miles within DNL 65		14.1 (2000 data)	8.6 (2008 data)
Number of noise-related complaints	Number of logged complaints	174	355
Number of complainants		31	43
Safety			
Damaging wildlife strikes per 100,000 movements	Number of strikes per 100,000 movements	1.11	0.48

EWR Sustainability Metrics (continued)

		Baseline Year	Calendar Year
	Units	2006	2009
Water Consumption			
Potable water consumption	Gallons	8,826,400	33,183,524
Non-potable water consumption	Gallons	0	0
Volume of water reclaimed	Gallons	0	0
Waste			
Total non-hazardous waste produced (Port Authority areas only – not including international waste)	Tons	n/a	3260
Total hazardous waste produced	Tons or gallons	n/a	15.56
Waste to landfill	Tons	n/a	3026
Waste to incineration (international waste)	Tons	n/a	n/a
Total recycled	Tons	n/a	234
Total composted	Tons	n/a	0
Total construction waste recycled	Tons	n/a	n/a
Ground Transportation			
Fleet vehicles that are alternatively fueled	Percentage of fleet	n/a	63%
Number of hybrid rental car	Number	n/a	Hertz: 139 Avis/ Budget: 135
Number of airport shuttle trips (Not hotels)	Number	n/a	96,725
Number of passengers using mass transit	Percentage of total passengers	n/a	8.5% (2008 data)
Number of Port Authority employees using mass transit	Percentage of employees	n/a	7%
Number of alternatively fueled Port Authority shuttles	Percentage of total	n/a	30%
Airside Transportation			
Number of electric ground support equipment	Percentage of total	n/a	15%
Community Engagement			
Number of events for the community hosted by the airport	Number	n/a	18+
Economic Impacts			
Direct jobs created by Airport	Number of direct jobs	n/a	n/a
Indirect jobs created by Airport	Number of indirect jobs	n/a	140,800
Actual percent of DBE business over total contracts let	Percentage of total	n/a	n/a

EWR Sustainability Metrics (continued)

	Units	Baseline Year	Calendar Year
		2006	2009
Employee Welfare			
Workforce diversity	Percentage by race/ethnicity	n/a	White: 61% Black: 23% Hispanic: 12% Asian/ other: 4%
Total hours of training for Port Authority employees	Number of hours	n/a	n/a
Staff turnover	Percentage	n/a	n/a
Days lost due to Port Authority employee injury	Number of days	n/a	n/a

Source: LeighFisher, June 2011.



Contact Us

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