

# ***Energy Conservation Improvements and Overview of Other Environmental Efforts***

**Committee on Operations**

**September 20, 2012**

# Environmental Initiatives by Line Department: Aviation

## Energy Conservation: NYPA Energy Services Program

### Completed Projects:

- JFK Bldg 142, Stewart International Airport Bldg 800

### Projects under construction:

- JFK Building 14, JFK parking garages

### Projects in Design/Audit:

- JFK Bldg 254, 255, 141, 111
- LGA Hangars 7 & 11, Central Automotive Bldg, Marine terminal Bldg parking lot, Central Terminal Building



## Energy Conservation: PSE&G Direct Install Program

- Teterboro Airport Hangar 1, EWR Bldg 70

## Sustainable Management Plans

- SWF Environmental Sustainability Plan Released in 2010
- TEB and EWR received grants through FAA pilot program to develop Sustainable Management P release expected in October



## JFK Wins ACI-NA Environmental Achievement Award for Bay Runway

- Ground management innovation saves 5M gallons of fuel; 48,000 tons CO2; 14,800 hours of taxi-out delays

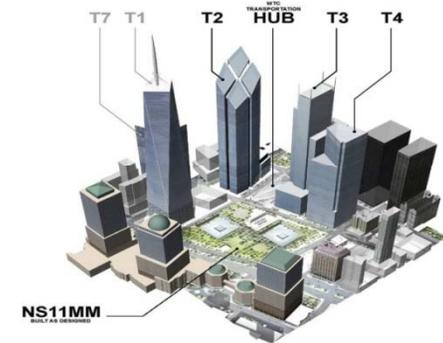
# Environmental Initiatives by Line Department: WTC

## Eleven Planned Facilities

- Towers 1-5 seeking LEED Gold
- Vehicle Security Center and Transportation Hub WTC Sustainable Design Guidelines

## 1 WTC

- LEED Gold
  - Fuel Cells
  - Renewable Energy
  - Water Reuse
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- The site will be operated and maintained to maximize environmental & operational efficiencies while minimizing operational expenses
  - Working with the Office of Environmental and Energy Programs to address partner and tenant coordination issues



## ***Environmental Initiatives by Line Department: PATH***

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### **New Passenger Car Fleet**

### **Signal System Replacement**

- Computer Based Train Control
- Reduced Headway
- Increased Capacity



### **Expansion of Platforms**

- Increase from 8-car operation to 10-car operation

**Allows Port Authority to meet projected demand, increase a more sustainable mass transit system**

# Environmental Initiatives by Line Department: Port Commerce

## Ocean Going Vessels (OGV)

- Low sulfur fuel Incentive
- Install shore power at Brooklyn Cruise Terminal
- Clean Vessel Incentive program

## Harbor Craft

- Expand marine vessel engine replacement program to private ferries and tugs

## Cargo Handling Equipment (CHE)

- Implement CHE fleet modernization program
- Electrify diesel cranes or repower them with new cleaner burning engines
- Replace some CHE with alternative powered equipment



## Rail

- Retrofit switching locomotives to low emitting generator set configuration. Use Ultra Low Sulfur Diesel fuel in locomotives
- Evaluate use of alternative powered lifting equipment in rail yards

## Trucks

- Implement program to replace old trucks (engines 2003 or older)
  - Implemented Truck Replacement Program (TRP) funded by PANYNJ and \$8.5M Grant. Provides grant for 25% of new truck cost and low interest loan for remaining 75%. Old truck scrapped
- Establish emissions reduction fund to finance acquisition of cleaner trucks
- Develop a truck phase out plan
- Develop an appointment system for trucks

# *Environmental Initiatives by Line Department: TB&T*

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## **Green Roof Pilot at NJ Holland Tunnel Administrative Building**

- Potential savings in energy, water, costs through thermal insulation, reduced heat island greenhouse and pollution, noise pollution reductions, storm water runoff reductions, and increased longevity of roofs.



## **Holland tunnel LEDs**

- LED replacement lamps will be arriving October-December 2012, enabling facility forces to begin replacing existing fluorescent lamps
- Will yield energy savings of approximately \$151,000 and re-lamping costs of \$48,000 annually – project payback if three years
- Meets code requirements for tunnel lighting and exceeds the existing lighting performance with approximate energy savings of 4.6 watts per linear foot of lamp



# Agency-Wide Environmental Initiatives

## Environmental Compliance

- Regulatory Compliance Management System
- Hazardous Waste
- Sustainable Design Guidelines
- Sustainable Infrastructure
- Employee RideShare Program

## Renewable Energy Certificate Purchases

- Currently purchase over 40,000 MWh of wind RECs from upstate NY wind farms
- Taylor Biomass Energy to come online in 2013, adding 163,000 RECs at maximum production

THE OFFICE OF ENVIRONMENTAL AND ENERGY PROGRAMS

FACT SHEET  
**LEAD WASTE**

**LEAD WASTE INCLUDES** paint chips, lead-based paints, bullet casings, air filters and PPE from working with lead bearing wastes. Lead-based paint has been banned since 1978, but many older structures still have this paint on their surfaces.

**Agency Contacts:** Contact the Facility Environmental Coordinator.

**Current Contractor:** Disposal is performed by Clean Earth of North Jersey, Inc.

**WASTE CATEGORY:**  
Hazardous: Lead bearing wastes are hazardous for the EPA toxicity characteristic of lead (D008).

**STORAGE AND SEGREGATION:**

- Keep drums closed except when adding waste.
- Store all lead contaminated wastes in 55-gallon metal drums. HEPA filters from the firing range can be stored in approved boxes
- Drums should be stored indoors or under cover. If storing outdoors, use of an impermeable surface, secondary containment and protection from weather conditions are required.

**LABELING REQUIREMENTS:**  
Label container with a Hazardous Waste label indicating drum number, waste description ("Paint Chips"), and date drum began being filled.

**ACCUMULATION TIME LIMITS:**  
At the point of generation, drums are considered satellite storage. Once full, mark drums with the date (called the "start accumulation date") and contact the Facility Environmental Coordinator to move the drum to the Central Accumulation Area.



**ENVIRONMENTAL IMPACT**  
Lead is a highly toxic metal. Workers can be exposed to lead contamination by cutting, scraping, sanding, heating, burning, or blasting lead-based paint from building components, metal bridges and metal storage tanks. In addition to exposure to workers, lead-based paint debris or dust can also make its way into soil, potentially contaminating surface waters. Lead poisoning is a serious health threat for adults and is especially damaging to young children.

**WHEN MANAGING LEAD WASTES**

- DO NOT throw wastes from lead projects into the trash.

**Links to Regulatory Sites**

<http://www.epa.gov/lead/>

<http://www.nj.gov/dep/dshw/rtp/lbpoint.htm>

7/2012



# *Hudson-Raritan Estuary Resources Program*

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## **New York:**

- *9 Sites, 153 Acres:*
  - Staten Island: North Shore Marina, Wiman Avenue, William H. Pouch Scout Camp, Quintard Street, Butler Manor, North Mount Loretto Woods
  - Queens: Idlewild Marsh, Beach 88<sup>th</sup> Street
  - Bronx: Harlem River Promenade at Depot Place



## **New Jersey:**

- *10 Sites, 246 Acres:*
  - Meadowlands: Murray Hill; Meadowlark; Barge Club; Boulevard Tire
  - Bachstadt/Lady Slipper- Holmdel
  - South Plainfield- Dismal Swamp/County of Middlesex
  - Hackensack Riverfront Park site, Jersey City
  - Riverbank Park Extension, Essex County
  - Adams Property, Middlesex County
  - McNamee Property, Hazlet Township



# *Environmental Initiatives on the Horizon*

## **Solar**

- On-Site Solar Generation Project at Newark Liberty International Airport
  - 20-year Solar Power Purchase Agreement, estimated cost savings of \$1.25M
- Also plan small solar PV installations at SWF and PATH-Harrison Car Maintenance Facility through the Guaranteed Energy Savings program
- Exploring other grant opportunities that could support larger installation at SWF

## **Port Jersey Wind**

- \$3.6M grant available from the NJ Board of Public utilities for a utility-scale wind farm at Port Jersey
- Expect to finalize grant funding agreement by November 2012, and draw down on pre-construction funds provided by grant in early 2013.

## **Electric Vehicle Chargers**

- 10 EV charging stations installed -- five stations each at LGA and JFK
- Potential NYSERDA-funded project will deploy additional stations at PABT and SWF



## Phase 2 Energy Conservation Improvements

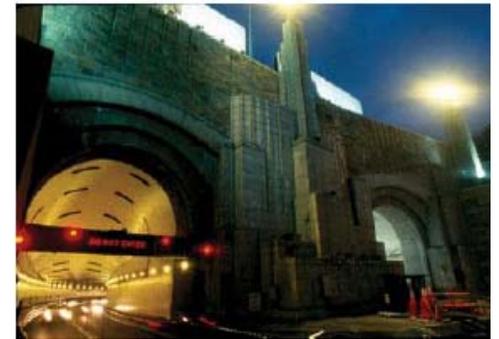
- Newark Liberty International Airport and Stewart International Airport
- Multi-Facility Guaranteed Energy Savings Program
  - Honeywell
- Combined guaranteed maximum amount of \$12.2M
- Guaranteed energy consumption reductions of:
  - approximately \$1.4 million per year
  - aggregate of \$21.5 million over the projects 15-year term



PROJECT SCOPE	
<b>EWR</b> (Terminal B, Terminal C Parking Garage, CHRP, Admin Bldg, Air Train & NEC Stations, FIS Bldg)	<b>SWF</b> (Main Terminal, Admin Bldg, Maintenance Bldg, Hangar 2290)
Lighting, controls, heating/ HVAC upgrades	Lighting, controls upgrades, boiler replacement, CO2 sensors, solar PV

## Phase 1 Energy Conservation Improvements

- Approved by PA Board in February 2012
  - Constellation Energy: Port Authority Bus Terminal/Lincoln Tunnel
  - Johnson Controls, Inc.: PATH Journal Square Transportation Center/ Harrison Car Maintenance Facility
- Combined guaranteed maximum cost of \$19.2 million
- Guaranteed energy consumption reductions of:
  - approximately \$2 million per year
  - aggregate of \$31 million over the projects 15-year term
- Phase 1 & 2: PA will pay for projects from operating funds
- Annual utility and operating and maintenance savings attributed to reduced energy consumption will offset the cost of the projects, and yield ongoing savings for the PA.



## Phases 1&2 Environmental and Economic Benefits

- Annual Greenhouse Gas (GHG) emissions reductions of approximately 70,000 tons of carbon dioxide equivalent – comparable to 7,200,000 gallons of gasoline saved annually.
- \$2-3 million in avoided GHG offset purchases over the 15-year period
- Replacing older equipment, with higher-efficiency, longer-lived equipment, thus reducing material usage and cost
- Improvements support energy efficiency and clean energy in the region
  - 210 job years
  - \$15 million in wages
  - \$40 million in economic activity

