

The background of the slide features three iconic structures: the Statue of Liberty on the left, the Leaning Tower of Pisa in the center, and the Burj Khalifa on the right, all set against a clear blue sky with a few white clouds.

America's front door.

We make a big world smaller.

Superstorm Sandy
**The Experience of The Port Authority of New
York and New Jersey**

December 7, 2012

**American Association
of Port Authorities**

THE PORT AUTHORITY OF NY & NJ

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big world
smaller



THE PORT OF NY & NJ IS OPEN FOR BUSINESS.

We wish to thank you for your patience as the port recovered from Hurricane Sandy, and express our gratitude to the entire New York and New Jersey port community for its extraordinary effort in bringing this vital resource back on line.

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2012 - Year of Disruptions



**Possible longshoremen's strike
Port of N.Y. and N.J.**
Published: Tuesday, August 28, 2012, 6:30 AM
Updated: Tuesday, August 28, 2012, 1:13 PM
The Star-Ledger

NY & NJ port closed to vessel traffic
October 29, 2012, 10:13 a.m. ET

Breaking News

**EC ILA
POTENTIAL STRIKE**
Oct 1, 2012 Dec 30, 2012

[Click Here for Updates](#)

The banner features a background image of a large cargo ship at a port. The text is overlaid on the image, with 'Breaking News' in a red diagonal box, the main title in large white letters, the dates in red, and a yellow link at the bottom.

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Port Authority of NY & NJ



Responsible for
Airports
Tunnels & Bridges
PATH
Port of NY & NJ
World Trade Center

Established in 1921 by an act of US Congress

Financially self-supporting through user fees and bond issues.

Landlord Port

Board of Commissioners chosen by Governors of NY(6) and NJ(6)



Preparation

- Notification to tenants began Thursday, Oct. 25 (USCG Sector NY Hurricane/Severe Weather Plan + PA's Emergency Op's. Plan)
- PA Emergency Operations Center activated on Oct. 28
- Until Sunday, Oct. 28th, there was a false sense of security
- Oct. 28 National Weather Service briefing indicated surge of 6-11' above normal high tide
 - PA decision to close terminals to all but essential personnel by 2359 hours
- Mon - Oct. 29 – 1200 hours --- all tenant personnel and PA contract security ordered off port; Port Commerce and PAPD staff vacated at 1915 hours (just prior to surge)
- Mon., Oct 29 – 2000 hours --- NOAA reported water levels at the Battery and Bergen Point @ 9-10' above MHW; winds @ 80-90 mph; surge 13 -14'.



During the Storm

- Not much could be done
- Keep staff safe
- Hunker down

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Sandy's Aftermath





Damages Incurred

• Extensive infrastructure damage

- Flooding (Water level in buildings @ 3-5')
- Utilities --- general commercial power, motors, controllers
- Sewage/fire pump motors and controllers
- Loss of rail relays and switches
- Security fencing and guard booths destroyed
- Damage to cranes and cargo handling equipment
- Debris in roadways, channels and berths
- Road and rail track damage
- Total loss of rail car float and rail transfer bridge at Greenville

• Cargo impacts

- Toppled container stacks
- Lost containers
- Autos destroyed by flooding and fire

• Cruise Passenger Auto Damages

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Container Terminals



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Crane Wheel Motor Housings



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Typical Fence Line Damage



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Red Hook Barge “New York” Sitting on Berth 6



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Fence / Rail Damage Port Newark



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Chassis Took a Huge Hit



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Port Drayage Trucks



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Auto Damage



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Access Road at Port Jersey



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Greenville Yards Jersey City



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Cross Harbor Rail Car Float Broken in Half



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International Motor Freight



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Empty Container Depot



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Empty Container Depot



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November 7 Nor'easter





Estimated Diversions

- 57 vessels diverted to other US East Coast ports
- Estimated cargo lost:
 - Containers = 15,000
 - Autos = 9,000
- 1 cruise ship diverted from PA's Brooklyn Cruise Terminal to the Manhattan Cruise Terminal.



Recovery Timeline

- **Tues, Oct. 30 - Assessment, response, recovery and restoration begins**
- **Friday, Nov. 2 – USCG re-opens Port to deep draft commercial traffic**
- **Friday, Nov. 2 - First vessel arrival at PA facilities = *Brilliance of the Seas at Cape Liberty***
- **Sat. Nov. 3 - Power restored at Elizabeth**
- **Sun. Nov. 4 – Maher / APM work 5 vessels**
- **Mon. Nov. 5 – Truck gates at all container terminals opened for business**
- **Mon./Tues. Nov. 5 & 6 – All remaining container terminals work their first vessels**



Estimated Costs

Operating Costs

- To date: \$ 1.4m
- Anticipated additional: \$3.7m

Lost Revenue from Port Operations

- \$1.2m (2012 + 2013)
- Anticipated additional: \$390,000 every 3 months Cross Harbor Rail operation is out of service.

Capital Costs

- Range = \$34m - \$52m



What Will We Do Differently?

- Future builds based on cost-benefit considerations.
- Evaluate localized power/electric stations fueled by natural gas and/or diesel to service key infrastructure
- Relocate overhead electric lines to underground duct banks.
- Evaluate vertical parking structures
- Protect pump stations and other fire protection systems from flooding
- Consider increasing elevations of port facilities under development.



What Will We Do Differently? (cont'd.)

- Develop contingency plans for moving goods, supplies and materials throughout region when road/rail/air/port facilities are compromised
- We are working to adjust capital plans to:
 - Fast-track improvements to drainage/sewage/fire protection systems; pump houses, electric substations and electric components – upgrade where necessary
 - Design redundant power and communications systems
 - Re-evaluate design criteria using latest storm recurrence intervals, storm surge levels, wind and wave data
- **We will harden our facilities and invest wisely!**



Lessons Learned

- Having a good communications plan and emergency communications infrastructure in place is critical
- Provide sufficient advance information and industry will respond
- Qualifications of personnel responding to assist in recovery is more important than the number responding
- Emergency broadcast messages must be concise enough for both email and text formats
- Availability of traffic/street lights is critical to recovery --- work can be done on 24-hour basis vs. daylight hours only
- Document baseline power requirements for each facility and each tenant beforehand --- will facilitate procurement of temporary generators.

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