

# Energy Efficiency Upgrades for the Port Authority of NY and NJ

Upgrades to transport agency lead to increased energy efficiency



## Challenge

Prior to 1927, there were no bridges or tunnels enabling cars to cross New York's Hudson River. In 1921, the Port Authority of New York & New Jersey (Port Authority) was created as an interstate agency for the purpose of efficient economic development of the Port District, an area of land encompassing New York and New Jersey that flanks the Hudson River. Throughout its history, the Port Authority has undertaken complex infrastructure projects, many of which are noteworthy for both innovation and scale.

Today, more than 450,000 vehicles cross the Hudson River between New Jersey and New York City every day—an amount that exceeds the population of many U.S. cities. The Port Authority manages all of these Hudson River crossings, and with the high volume of traffic it handles every day, it is critical that the Port Authority operates its transportation infrastructure efficiently.

## Solution

In the same spirit of innovation that it has applied to its other infrastructure projects, the Port Authority has also led the way in energy efficiency projects in transportation. In 2011, Constellation began a series of energy audits that culminated in the August 2012 award of a \$7.5 million energy performance contract (EPC) at the Port Authority Bus Terminal and Lincoln Tunnel facilities. Energy conservation measures (ECMs) were installed across all selected locations, including lighting, building envelope, HVAC, and window upgrades. The measures, part of Phase 1, are projected to save over \$700,000 a year.

After the success of Phase 1, Constellation proceeded with a Phase 2 efficiency project, in which the Port Authority chose Constellation to make \$25.8 million in efficiency upgrades to the Goethals Bridge, the Outer Bridge Crossing, the George Washington Bridge, and a number of other administration buildings serving the Port District. These improvements are expected to save the Port Authority \$27 million over 20 years and reduce greenhouse gas emissions by 3,000 tons per year. The project includes the installation of more than 5,000 LED bulbs at the selected facilities. As part of this lighting scope, Constellation will be installing Smart LED fixtures on many of the designated bridges and roadways. These fixtures will be able to host security cameras, air-quality sensors and lighting controls, in addition to energy-efficient LED lighting.

## Highlights

### Project

- No upfront cost for the Port Authority of New York & New Jersey
- Energy savings used to fund the cost of the projects
- Phase 1: Approximately \$1 million in energy savings annually over 15 years
- Phase 2: Estimated \$27 million in operating cost savings over 20 years

### Technical

- 2,300 LED lights installed in the Lincoln Tunnel and Port Authority Bus Terminal
- 5,000 LED lights installed along the George Washington Bridge, Holland and Lincoln Tunnel Roadways, Goethals Bridge and Outerbridge Crossing
- New boilers, chillers and controls systems installed at tunnel and bridge administration buildings
- 3,000 tons in greenhouse gas reduction expected per year

Constellation will also be installing efficiency upgrades at administration buildings near many of the Hudson River crossings. At those facilities, measures including lighting, building automation controls, boiler and chiller replacements, low-flow toilets and faucets, and building envelope improvements will be implemented.

As a result of Constellation's improvements, the Port Authority will see its tunnels, bridges, and roadways continue to operate efficiently into the future.

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