Holland Tunnel Electrical / Mechanical Rehabilitation of Ventilation Systems Reauthorization

Committee on Capital Planning, Execution and Asset Management

July 24, 2013

Overview and Scope of Work

- **First mechanically-ventilated vehicular tunnel** — Opened 1927
- **Challenge:** maintain safe air quality
- **Improve operational efficiency**
  - Replace motors
  - Add automatic control system
  - Add adjustable speed drives
- **Replace electrical equipment**
- **Replace all 84 fans**

Challenges and Lessons Learned

- **Complex contract**
  - Antiquated system replacement
  - Rigid phasing necessary to maintain ventilation (5 phases)
  - Constrained building spaces within 86 year old buildings
  - “First Generation” technology implementation/integration
- **Overly aggressive initial plan**
- **Project delivery enhancements now under way**
  - Risk assessments
  - Peer reviews/ industry outreach/ inter-agency discussions
  - Enhanced delivery methods/ alternate contract strategies
  - Enhanced status reporting

Major Issues

- **Systems**
  - Electrical equipment (switchgear) commissioning
  - Automatic Control System software integration
  - Motor drive performance
- **Working Conditions**
  - Space limitations in Ventilation Buildings
  - Pier 9 deterioration limits NJ River Ventilation Building access
- **Super Storm Sandy**
  - Inspection of stored fans
  - Clean/ restore components
  - Possible major fan component replacement

Contract Assessments

- **Reviewed options**
  - Breach/ rebid contract
  - Replace critical equipment manufacturer
  - Aggressively manage contractor/vendor
- **Continue with current contractor/ vendor**
  - Ensure one equipment source
  - Collaborate with Contractor and Vendor to expedite resolution of issues
  - Most cost effective and expedient solution

Project Status

- **Overall completion** – 70%
- **Fan fabrication/ delivery** – 100%
- **Automatic control system installation** – 100%
- **Electrical equipment installation** – 90%
- **2 out of 5 phases completed** – 40%
- **Anticipated completion**
  - Phase 3 – Feb. 2014
  - Phase 4 – Nov. 2015
  - Phase 5 Final Completion – Dec. 2016

Project Reauthorization Request

Total Authority spending: **$196.4** million

Additional Project Cost borne by Insurer: **$10** million

Total Project Cost: **$206.4** million

(includes $13 to $20 million attributable to Sandy)

	Existing	Increase	Forecast
Construction Cost:	$85.8	$17.3	$103.1 million
Staff Cost:	$17.7	$16.3	$34.0 million
Consultant Cost:	$ 3.5	$0.0	$3.5 million

Construction End: December 2016

Economic Benefits: additional140 job-years, $9 million in wages, and $35 million in economic activity