Indian Run Dam Rehabilitation

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Project Manager,
Alfred Benesch & Company
• 1834/ 179 years in business
â• Over 30,000 customers
Â 25 Municipalities
Â Drinking Water
 Â 6 water treatment plants
 Â 6 water surface reservoirs
Â Sanitary Sewer Service
 Â 5 wastewater treatment plants
SCMA’s largest customer
INDIAN RUN DAM

- Original construction: 1926
- 49.4 acre reservoir
- 488 Million gallon capacity
- PADEP - high hazard dam
ALTERNATIVES ANALYSIS

- Raise dam elevation
- Increase spillway capacity
  - Rectangular weir
  - Ogee weir
  - Labyrinth
- Armor downstream embankment
- Construct auxiliary spillway
- Approved by PADEP in 2008
  - Labyrinth Spillway
  - Embankment drainage system
  - Restore Valve Operations
TEAM MEMBERS

- Owner - SCMA
- Design/Management - Benesch and Schnabel
- Funding - PENNVEST and DCED/CFA
- Construction - Performance
VALVE HOUSE

- 90 ft. deep structure
- 3-level intake
- Replace valve operators
SPIELWAY CAPACITY

- 2.5 cycle labyrinth
- PMF storm capacity 11,600 CFS
- 400 ft. long chute
- 90 ft. wide
RECORD SETTING RAINFALLS

- Hurricane Irene/Tropical Storm Lee
- 4.5 and 9.4 inches of rainfall in less than 2 weeks
- Control of water designed for 100 year storm
• Original cost estimate: $10,000,000
• Design cost estimate: $7,200,000
• Final cost: $5,950,000

Over 1.2 million under budget
FUNDING

- Commonwealth Financing Authority H2O Grant Program (CFA H2O)
- Pennsylvania Infrastructure Investment Authority (PENNVEST)
- 80% Grant and 20 Low Interest Loan funded the project
- No impact to the SCMA Customer Rates
• The reservoir remained at full pool elevation during construction

• Treatment plant remained in full operation throughout entire construction project

• Main supply line located directly through the project site

• Project completed without sacrificing integrity of SCMA water supply
2013 ACEC/PA DIAMOND HONOR AWARD


Originally constructed in 1929, Indian Run Dam experienced uncontrolled seepage, embankment deficiencies, inadequate spillway capacity and deterioration of the spillway. The dam was placed on PADEP’s list of Unsafe High Hazard Dams in 2007.

After conducting an alternatives analysis, including an in-depth geotechnical investigation, the project team identified a uniquely-designed labyrinth spillway as the most viable option. Serving as the primary potable water source for SCMA, the reservoir could not be drained during construction. Techniques implemented to allow for a 100-year by-pass flow during construction proved to be the savior of the project as Hurricane Irene/Tropical Storm Lee dumped nearly 11 inches on the site in the late summer of 2011 without any major complications!

Rehabilitation of Indian Run Dam saved a vital source of drinking water for SCMA allowing continued service to over 30,000 customers in 25 municipalities. The project eliminated the threat of downstream flood damage and potential loss of life from dam failure. And just as impressive as the technical accomplishments, the use of the combined Commonwealth Financing and PENWEST grant/loan and the $5.9 million project without any customer rate
Thank you.
Questions?

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