Cobbs Creek Dam - Investigations and Alternatives Analysis

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Overview

- Project Background
- Preliminary Selection of Dam Types
- Site Geology
- Initial Investigation
- Dam Alternatives and Selection
Project Description
Preliminary Selection of Alternatives

- **Length-to-height ratio**
  - Arch dams have $L/H = 3$ to $6$
  - Cobbs Creek Dam $L/H \approx 25$

Embankment vs. Gravity
Preliminary Selection of Alternatives

- Gravity Dam
  - Roller Compacted Concrete (RCC)
  - Concrete

- Embankment
  - Earthen
  - Rock fill

Volume required dictates RCC

Need more information about availability of rock material
Preliminary Alternatives
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2011 VA EARTHQUAKE
WE WILL REBUILD
Subsurface Investigation

Strategy:

- Characterize residual soil profile
  - Variation in thickness of residual/transition material
  - Depth to sound rock
- Availability of potential borrow materials
- Identify diabase dikes
Residual Soil Profile

- Topsoil
- Residual Soil
- Transitional Material
- Low RQD Rock
- Medium RQD Rock
- High RQD Rock
Subsurface Profiles
Subsurface Profiles
Diabase dike
~ 30-ft wide
RCC or Earth?

- Deep rock on abutments
- Potential aggregate/rock sources deep
- Dam doesn’t require a large spillway
- Inlet/outlet tower necessary
Current Status

- Level B investigation complete
- Submitted our 30%
- Will submit our 60% design in Dec. 2013
- Construction will start?
- Estimated construction duration is 32 to 36 months
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Questions & Discussion