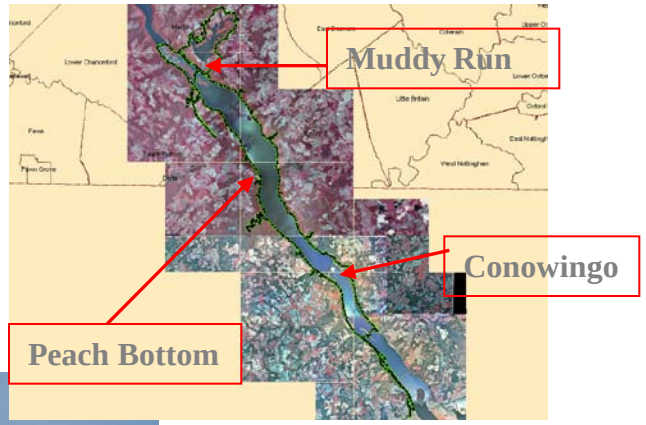
Exelon Power Hydroelectric Generation

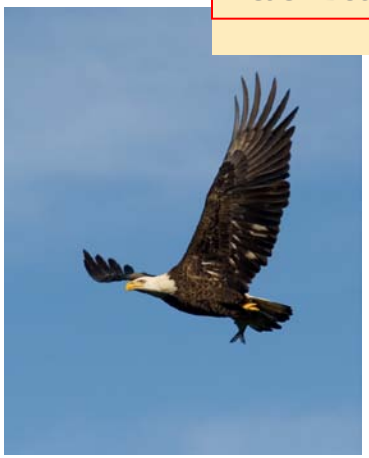
Conowingo Hydroelectric Project

Muddy Run Pumped Storage

Susquehanna River Basin

- ✓ The Susquehanna River is approximately 450 miles long and passes through 3 states
- ✓ Drainage Basin covers 27,500 square miles
- ✓ River flows vary from 1,700 cubic feet per second (cfs) to greater than 1,000,000 cfs
- ✓ Higher volume river flows traditionally occur during winter and spring
- ✓ Basin has Hydroelectric plants and flood control dams
- ✓ Conowingo is the last dam on river thus must pass whatever comes down river (run of river)
- ✓ Numerous recreational activities including bird watching, fishing, boating, hiking, and swimming





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Conowingo Dam and Muddy Run Pumped Storage

Conowingo Dam

- ✓ Constructed 1926 to 1928 at a cost of $73M (1928 $s)
- ✓ 4,468 feet long and 104 feet tall
- ✓ 11 generators with a base-load capacity of 572 MWs
- ✓ Contributes approximately 1.8 billion kilowatt-hours annually to the grid
- ✓ Generating hydraulic capacity is 85,000 cfs; flows greater than 85,000 cfs are managed by opening crest gates

Muddy Run Pumped Storage Station

- ✓ Built in 1967
- ✓ 8 units with a capacity of 1,070 MW
- ✓ When electric demand is low (e.g., overnight), pumps water up from the Susquehanna River
- ✓ When electric demand is high, generates by releasing water from the upper reservoir (1000 acres) to the Susquehanna River

Conowingo Crest Gates

- ✓ 50 crest gates used to control pond elevation, after full operation of the 11 generating units
- ✓ Run of the River – must pass river flows
  - PJM schedules generation to maintain pond elevation
  - Elevation restrictions are related to Peach Bottom Atomic Power Station and seasonal recreation requirements
- ✓ Each crest gate passes 16,000 cfs
- ✓ 3 cranes used to lift crest gates
- ✓ If more than 14 crest gates are opened, downstream notifications are made as downstream roads and the town of Port Deposit are affected

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Fishing at Conowingo

- ✓ Conowingo Dam is unique in that it operates two “Fish Lifts”, specialized elevators that Exelon uses to transport American Shad and other fish species
- ✓ West Fish Lift Constructed in 1972
  - Primary use is for US Fish and Wildlife Service hatchery stocking
- ✓ East Fish Lift Constructed in 1991
  - Primary use is for downstream to upstream movement of fish for spawning
- ✓ All upriver dams have some form of fish passage
- ✓ Conowingo Fish Passage

	American Shad	Total All Fish
2009	29,272	915,417
2010	37,757	857,272

- ✓ Fisherman’s catwalk was closed in 2001 after 9/11/2001 due to vulnerability and security risk assessments of the Dam
- ✓ Exelon completed the Octoraro Creek Trail in 2008 and the Fisherman’s Wharf in 2009

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