

Delaware Aqueduct Repair Update

August 16, 2023



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Agenda

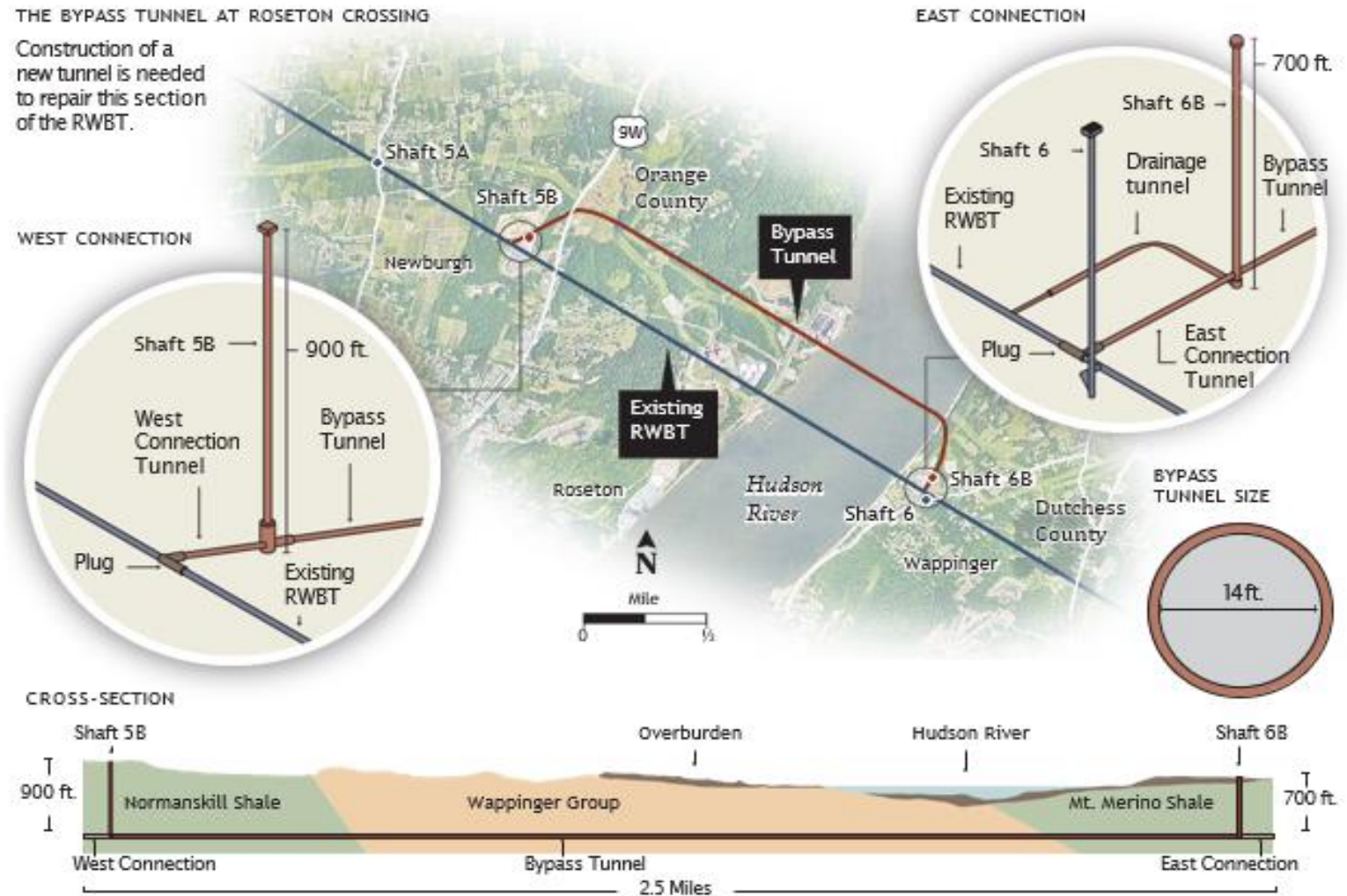
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BUREAU OF WATER SUPPLY



- Project Overview
- Dewatering Exercise
- Infiltration
- Fall 2023 shutdown
- Questions and Discussion

Delaware Aqueduct Repair

- The Bypass Tunnel is complete and ready for connection
- To connect the bypass tunnel, a shutdown of the Rondout West Branch Tunnel (RWBT)
- Work includes:
 - Shutdown and dewatering of the RWBT
 - Connection of the drainage tunnel to RWBT and assessment of infiltration
 - Connection of the bypass tunnel to the RWBT
 - Plugging and abandonment of the leaking section of the RWBT
 - Grouting of the Wawarsing leaks



Dewatering Exercise

- On March 6, 2023, DEP shut down the Delaware Aqueduct and began the process of dewatering the tunnel to an elevation of -90 feet below sea level, the first such draining in nearly 70 years
- The two-week shutdown enabled DEP to perform critical infrastructure and hydrological tests before beginning the final connection phase
- An engineering analysis of the new data obtained from the March shutdown concluded that the level of groundwater infiltration potentially exceeded the capacity of tunnel dewatering systems
- Safety of the workers 700 feet below ground is paramount





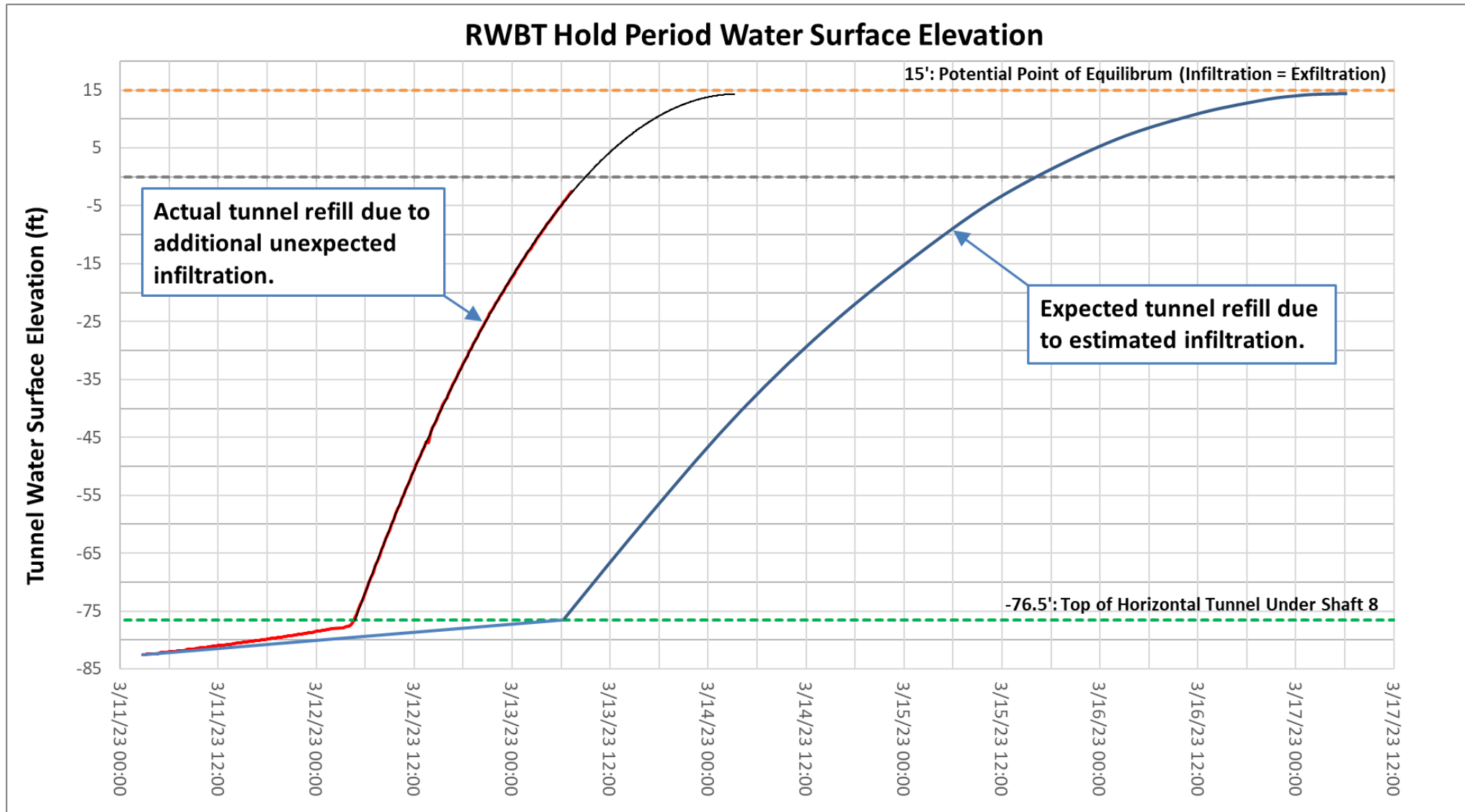
Problem

Rate of Infiltration

*This is not a photo of the Delaware Aqueduct.
It's from a Google Image search.*

Higher than Anticipated Tunnel Infiltration Rates

Current dewatering pump design capacity is insufficient, which would cause infiltration water to flood the connection worksite



Increasing Pump Station Capacity

- New pump procurement lead time is 18 weeks
- New pumps will require additional power capacity at Shaft 6 including
- Substantial increase in backup generator capacity must be procured to run new pumps
- Existing drop pipes need to be increased in size to allow for additional water transport



Baffle Drop Pipe

Conduct an additional dewatering exercise in Fall 2023 to gather additional data on infiltration, with full shutdown in October 2024

- Continue with Shaft 6B pump augmentation work
- Fall 2023 exercise will provide additional data points, to further reduce uncertainty of actual infiltration when fully dewatered
 - Exercise will dewater the RWBT to an elevation >-90 ft (exact elevation TBD)
 - Estimate 2-3-week exercise duration
- Perform Autonomous Underwater Vehicle inspection of the RWBT (Winter/Spring 2023/2024)
 - Gather additional info on leaks and changes since last inspection (2014)



Autonomous Underwater Vehicle (AUV)



Croton Filtration Plant



Cross River Pump Station



Croton Falls Pump Station

Questions



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