



Cobbs Creek Regional Reservoir

Presentation to RRRC

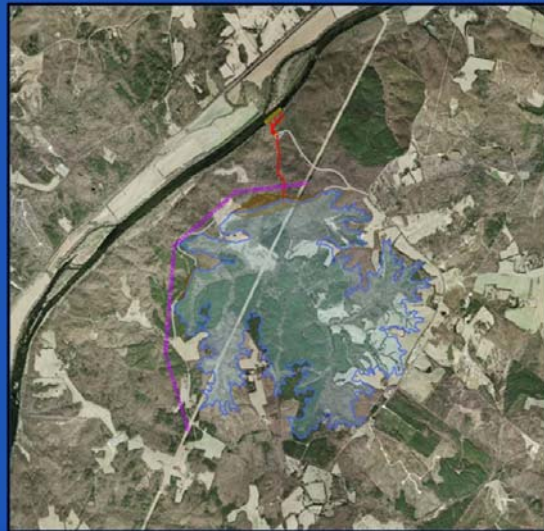
November 18, 2014

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Presentation Outline

- Reservoir Origin
- Negotiation and Permitting Timeline Highlights
- Reservoir Information
- Current and Future Activities
- Thoughts
- Reservoir Project Management and Schematics



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"At some point in time" – prior to September 2002

- Energy company and its legal representative met with Cumberland BOS to determine feasibility of natural gas plant in Cumberland.
- Project did not go forward as water supply (7 mgd needed) was not available
- Cumberland BOS member inquired on how to permit a water withdrawal
- Legal representative went to DEQ and meet with some interest groups concerned with low river flows, aquatic life, etc., and came up with idea of a side stream reservoir using the James River as a conduit to downstream users
- Through Cumberland County, Richmond and then Henrico approached to determine interest

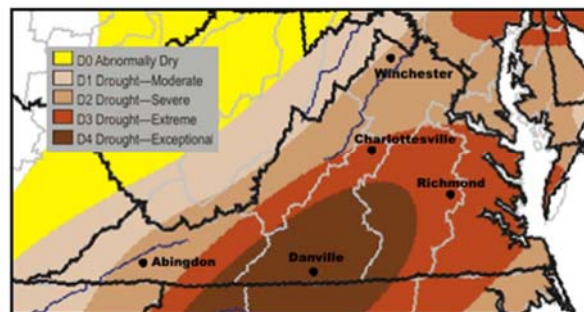
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Major Drought Stimulates Planning

U.S. Drought Monitor - Virginia October 8, 2002



Note: The U.S. Drought Monitor focuses on broad-scale conditions. Local conditions may vary. Click on map to view complete U.S. Drought Monitor graphic.

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Project Timeline Highlights

- 09/19/2002 – Cumberland, Henrico, DEQ, Malcolm Pirnie, Troutman Sanders met to discuss concept
- 08/27/2003 – Henrico commits \$100,000 (previously Cumberland acquired \$650,000 through Tobacco Commission and VDH)
- 12/20/2003 – Reservoir team meets with USACE
- 09/2004 – Powhatan as a potential team member
- 06/2004 to 01/2005 – Cumberland hosts 3 public meetings
- 04/2005 – Henrico and Powhatan BOS pass resolutions supporting the Cumberland County Reservoir Joint Permit Application

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Project Timeline Highlights

- 06/2005 – Draft Articles of Incorporation and Bylaws distributed for a three county authority
- 10/2006 – initial concept of Henrico as sole owner of project
- 10/2007 – USACE issues permit
- 12/2007 – Cumberland explores sole ownership of project
- 08/28/2008 – Cumberland introduces cost sharing MOU to be signed prior to reservoir project MOU
- 05/2009 – Henrico and Powhatan withdraw from project
- 07/24/2009 – DEQ letter to all 3 counties – Governor aware of impasse and offers his counselor as mediator

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Project Timeline Highlights

- 08-11/2009 – mediation
- 04/14/2010 – DEQ letter to Cumberland BOS stating DEQ's intent to terminate VWP Permit
- 07/2010 – Negotiations between Cumberland and Henrico result in a draft MOU with Henrico as sole owner, reimbursement to Cumberland for
 - 1) \$2,104,646 in expended project costs
 - 2) \$550,383 for wetlands mitigation bank costs
 - 3) Henrico's annual payment to Cumberland of \$1,131,900 for 50 years (converts to PILT in 51st year)
- 08/2010 – Cumberland and Henrico BOS approve MOU

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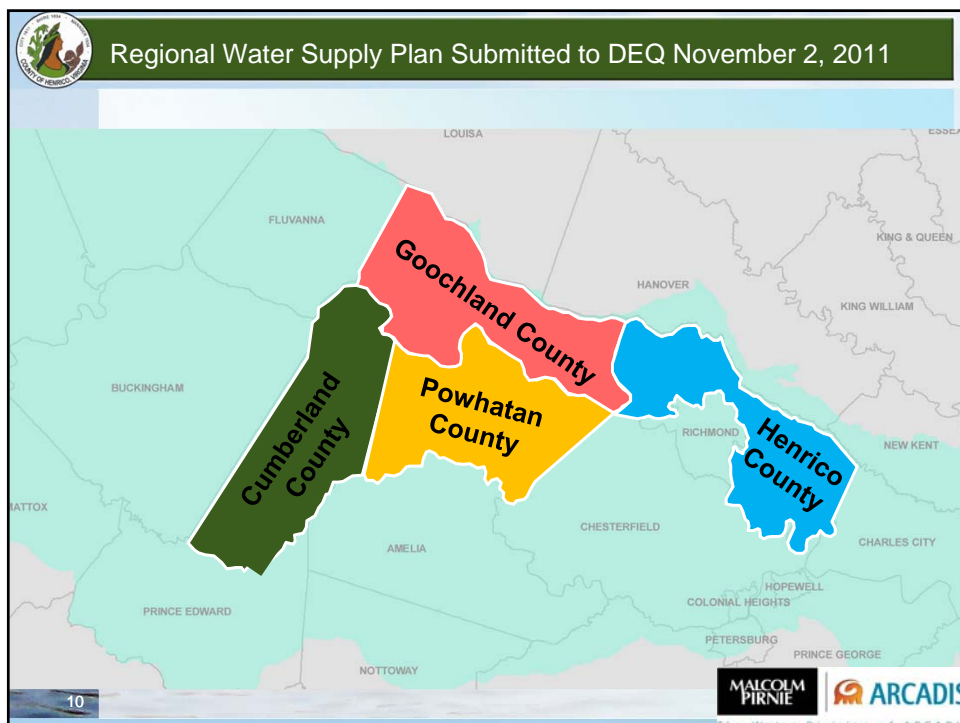
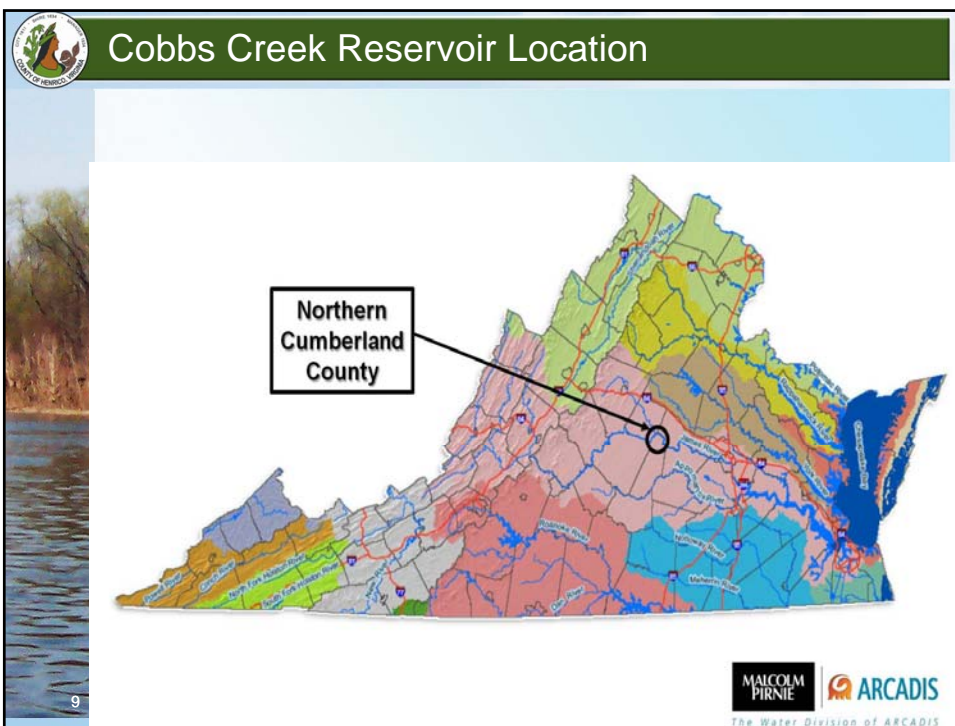


Project Timeline Highlights

- 01/2011 – all permits transferred to Henrico
- 03/2011 – Arcadis begins engineering services for Henrico reservoir project
- 05/2011 – Henrico letters requesting property access sent to all Cumberland property owners for land surveying, archeological investigations and stream and wetland delineation.
- 06/2013 – SWCB approves Mitigation Plan
- 11/15/2013 – USACE approves Mitigation Plan
- 11/2014 – Henrico completes all land acquisition and easements (1830 acres, 22 property owners)

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Importance of Cobbs Creek Reservoir

- Necessary for the future business and residential water supply needs for Henrico, Goochland, Powhatan and Cumberland counties
- Fulfills the requirements of the State Water Supply Plan
- Reduce environmental stress on James River during low flows through releases from reservoir

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2055 Water Supply Deficit

Henrico Demand*	-	110 MGD
Henrico Supply	-	<u>80 MGD</u>
Deficit	-	30 MGD

Powhatan Water Supply Need - 10 MGD

Cumberland Water Supply Need - 7 MGD

Total Water Supply Need 47 MGD

*includes Goochland

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Project Features



- Multi-benefit project for partners:
 - Water supply
 - River flow augmentation
 - Cumberland Recreation
- 14.8 billion gallon reservoir
- 1,117-acre pool
- 150 mgd James River withdrawal capacity (withdrawals when River flows are adequate)
- Releases back to James River during designated low flow periods (June-November)

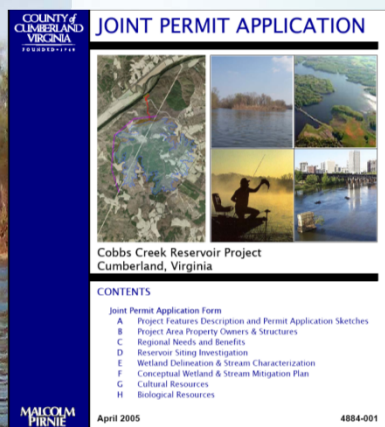


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Permitting Phase Timeline



April 2005 – JPA filed

March 2006 – VMRC permit issued

October 2007 - VDEQ and USACE permits issued

July 2008 – Cumberland County stopped work efforts pending partner negotiations

August 2010 – Henrico and Cumberland counties approved MOU

2011 – all permits transferred to Henrico County

November 2012 – VDEQ permits modified to increase Henrico WTP intake by 30 MGD

November 2013 – USACE approves Mitigation Plan



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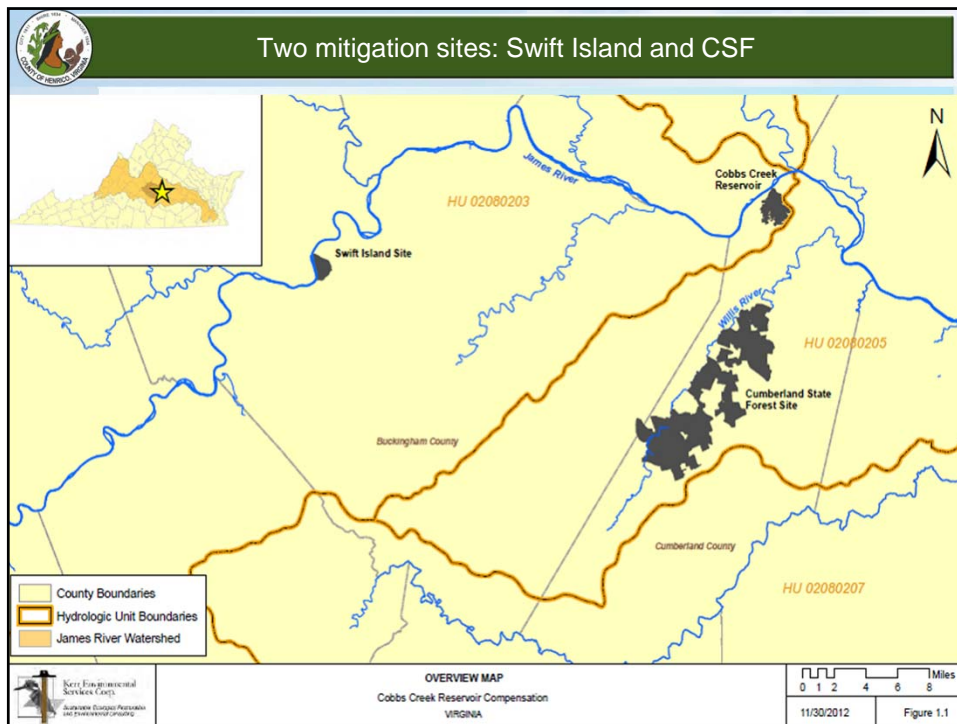
45 Miles of James River Flow Augmentation Benefits




Implementation Schedule


Major Work Elements	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Permit Compliance Plans		■	■								
Mitigation Program		■	■	■	■						
Colonial Pipeline/DVP Utility Relocations						■					
Property Acquisition			■	■	■						
Preliminary Engineering		■	■	■							
Detailed Design			■	■	■						
Construction							■	■	■	■	■
Reservoir Filling											■

Schedule uses fiscal years defined as July 1 to June 30, so FY 2012 = July 1, 2011 to June 30, 2012.



 Project Status

- Reservoir construction inspection (Henrico) staffing plan approved - temporary and permanent positions
- Reservoir operations (Henrico) staffing plan under formulation
- Designs to relocate Colonial Pipeline petroleum pipes and DVP overhead power lines are 98% complete
- Design of reservoir intake structure, pump station and two dams is 90% complete



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Future Milestones

- Property acquisitions completed pending Henrico BOS approval for final two properties
- Clear the utility corridor, construct some facility roads and install some piping commencing summer, 2015
- Relocate petroleum and electric utilities in 2016
- Construction of reservoir facilities 2017 – 2021
- Reservoir full and ready for use by 2022


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Thoughts

- While the negotiations were arduous at times, the reservoir concept was sound and through the perseverance of local, state and regulatory parties, the outcome was successful
- Establishing Henrico DPU and Real Property staff as direct contacts with the impacted Cumberland property owners (one-on-one and in public meetings) was key to the property acquisition without condemnation
- The reservoir “team” (and later Henrico) had excellent legal and engineering firms that knew how to navigate the state and federal regulatory permitting process
- DEQ’s permit modification of an additional 30 mgd for Henrico WTF river withdrawal was the commitment needed for Henrico to expend further funds

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Project Staff


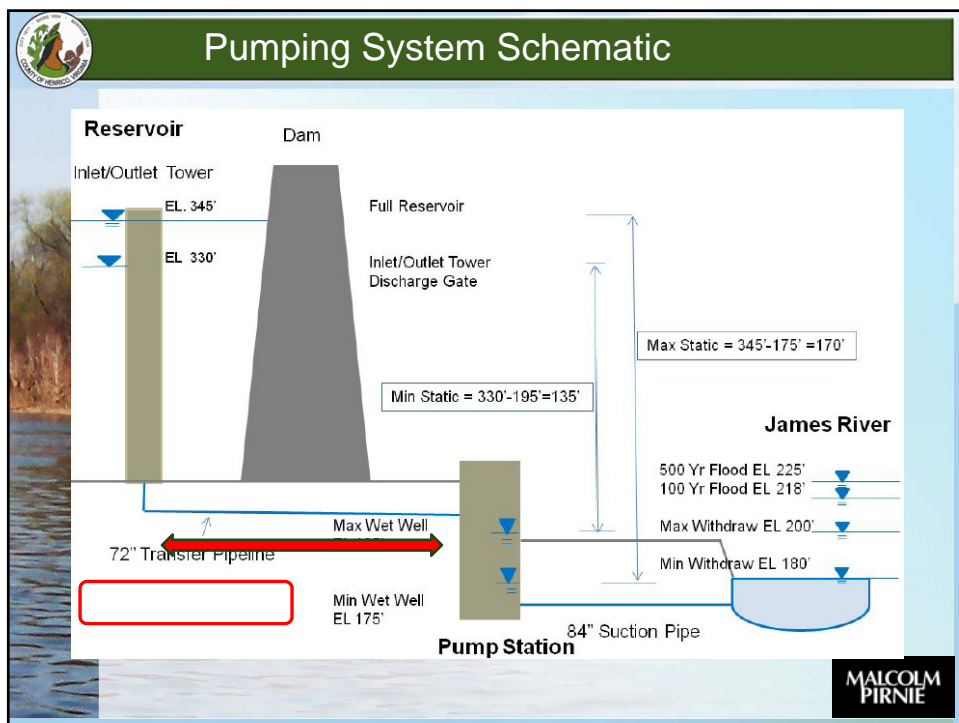
Bill Mawyer, Henrico DPU, Asst. Dir. Public Utilities

Ed Overmann, Henrico DPU, PM

Paul Peterson, ARCADIS Engineering Team PM

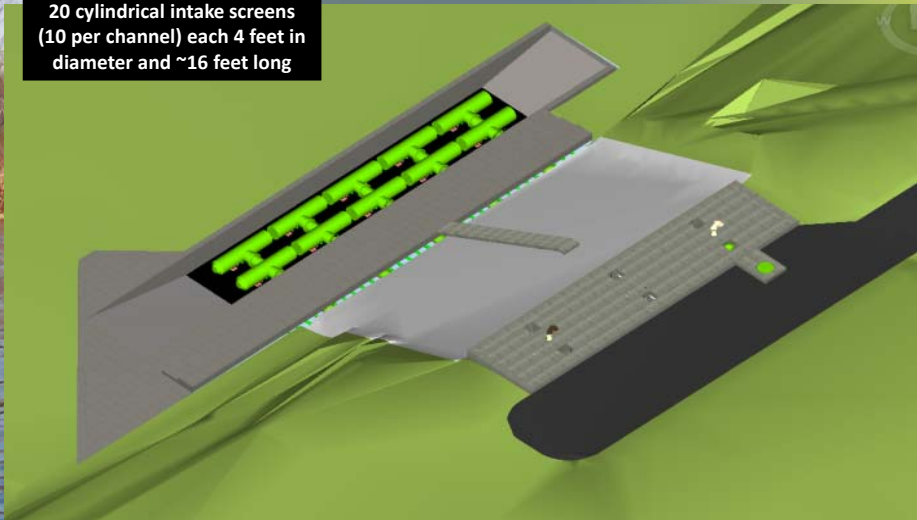
Mark Landis, Schnabel PM

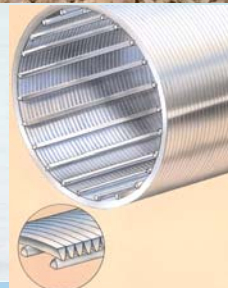



Screens and Screen Channel

20 cylindrical intake screens
(10 per channel) each 4 feet in
diameter and ~16 feet long

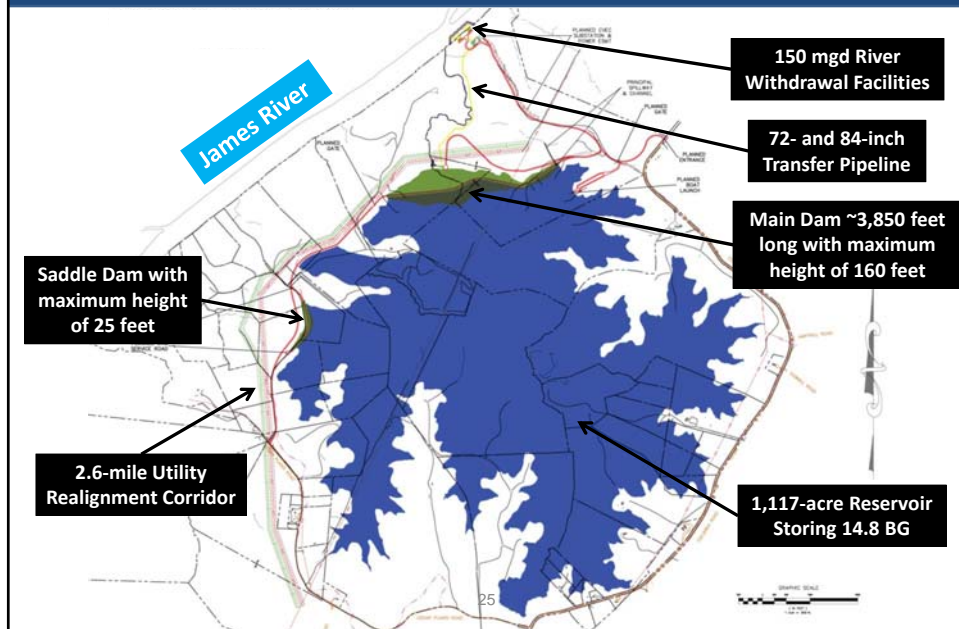


Similar Intakes Under Construction

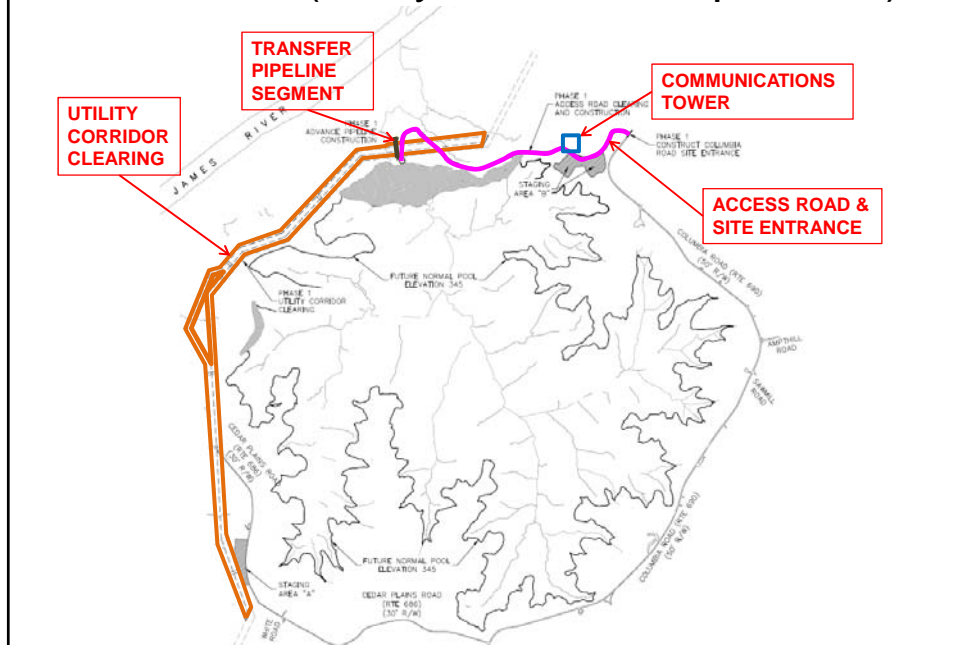


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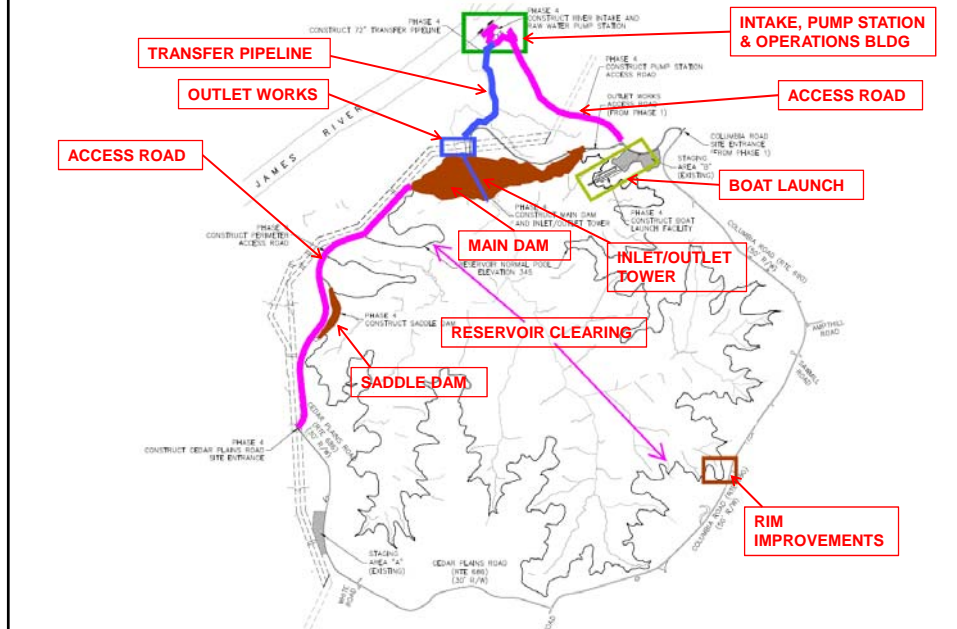
Project Features



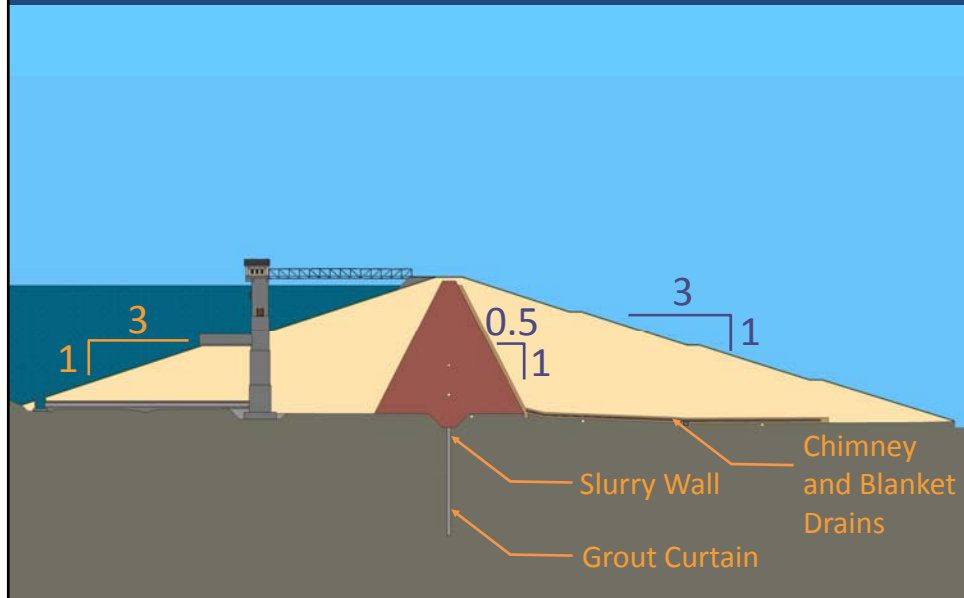
Contract #1 (Utility Corridor Preparation)



Contract #2 (Dam & Facilities)



Main Dam – Geometry & Seepage Control



Inlet/Outlet Tower Bridge



Main Dam and Public Boat Launch

