



Pohick Creek Watershed Huntsman Lake

Dam Rehabilitation Program and Watershed Planning Considerations

Wade Biddix,
Assistant State Conservationist for Programs

An Invitation to Attend the

THIRD NATIONAL WATERSHED CONFERENCE

**May 16-19, 1993
Holiday Inn-Downtown
Jackson, Mississippi**

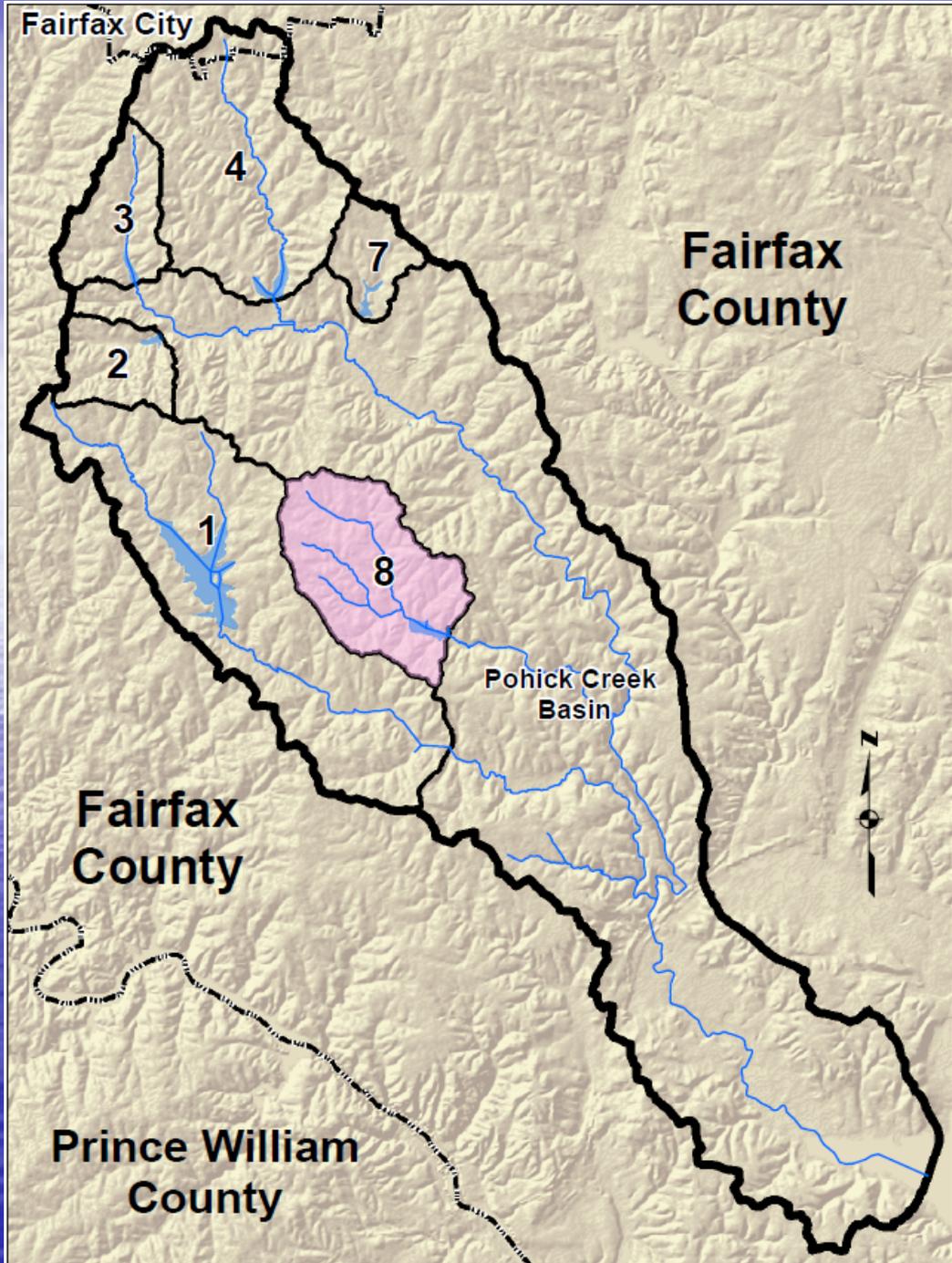
"PL-566 - THE HOLISTIC APPROACH TO WATERSHED MANAGEMENT"

A review of the Small Watershed Protection and Flood Prevention Program (PL 83-566) with a view toward demonstrating the versatility of the program in meeting today's water resource management needs.



Lake Royal, Pohick Creek Watershed, Virginia

Sponsored by the:
NATIONAL WATERSHED COALITION



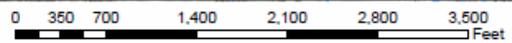
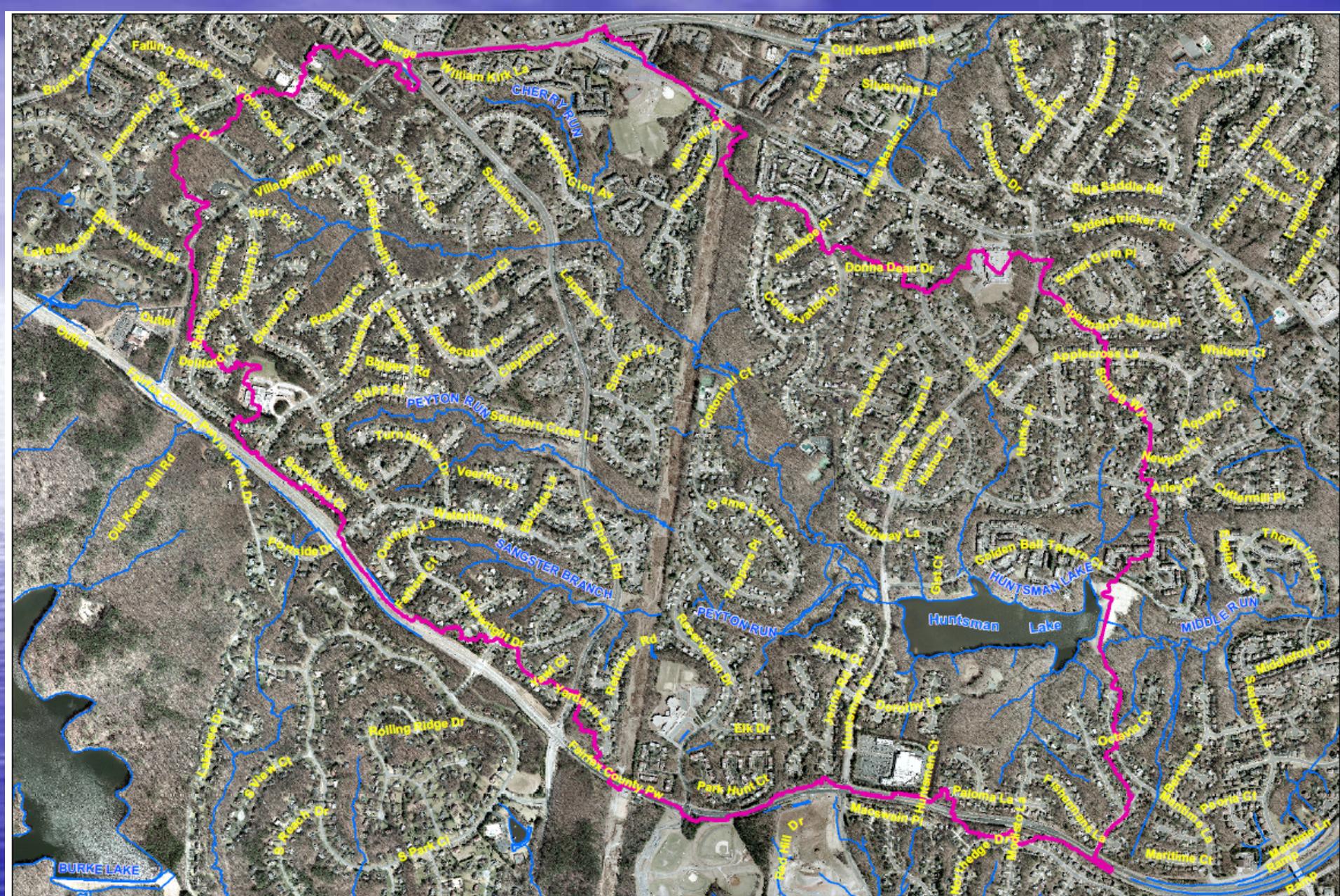
Huntsman Lake - Pohick Creek No. 8 in the Pohick Creek 12 Digit Hydrologic Unit

Legend

-  Pohick Creek 8 Sub-Watershed
-  Pohick Creek 12 Digit HUC
-  Pohick Creek Sub-Watersheds
-  Main Streams
-  Main Water Bodies
-  County / City Boundaries

Sub-Watershed Key

<u>Dam Site Name</u>	<u>Sub-Watershed Name</u>
Pohick Creek No. 1	LAKE MERCER
Pohick Creek No. 2	LAKE BARTON
Pohick Creek No. 3	WOODGLEN LAKE
Pohick Creek No. 4	ROYAL LAKE
Pohick Creek No. 7	LAKE BRADDOCK
Pohick Creek No. 8	HUNTSMAN LAKE



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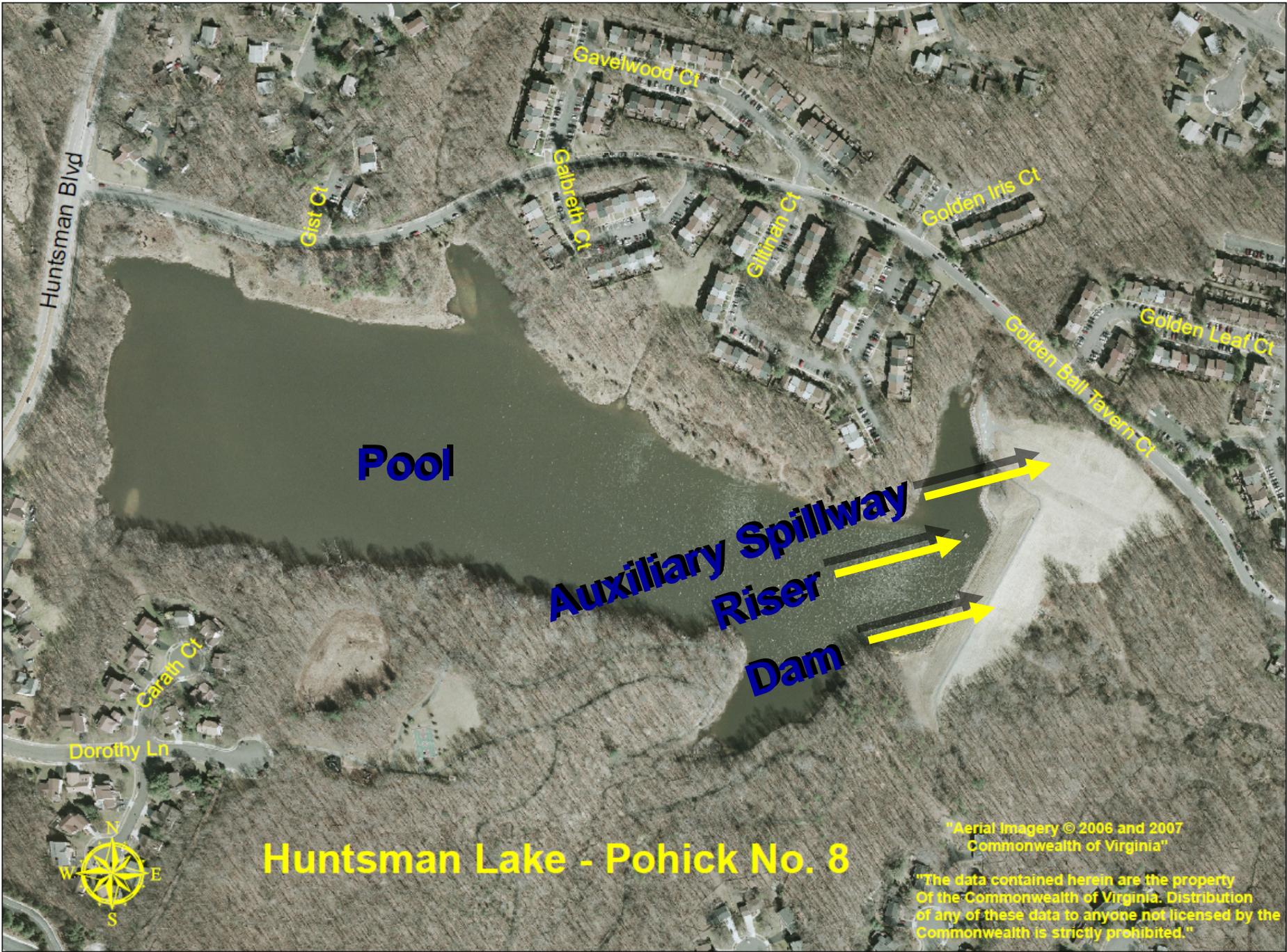
-  Pohick 8 - Huntsman Lake Watershed Boundary
-  County Streams

**Pohick 8 - Huntsman Lake Watershed
VGIN - 2007 Aerial Photography**









Huntsman Blvd

Gist Ct

Gavelwood Ct

Gabreith Ct

Gillman Ct

Golden Iris Ct

Golden Ball Tavern Ct

Golden Leaf Ct

Pool

Auxiliary Spillway

Riser

Dam

Carath Ct

Dorothy Ln

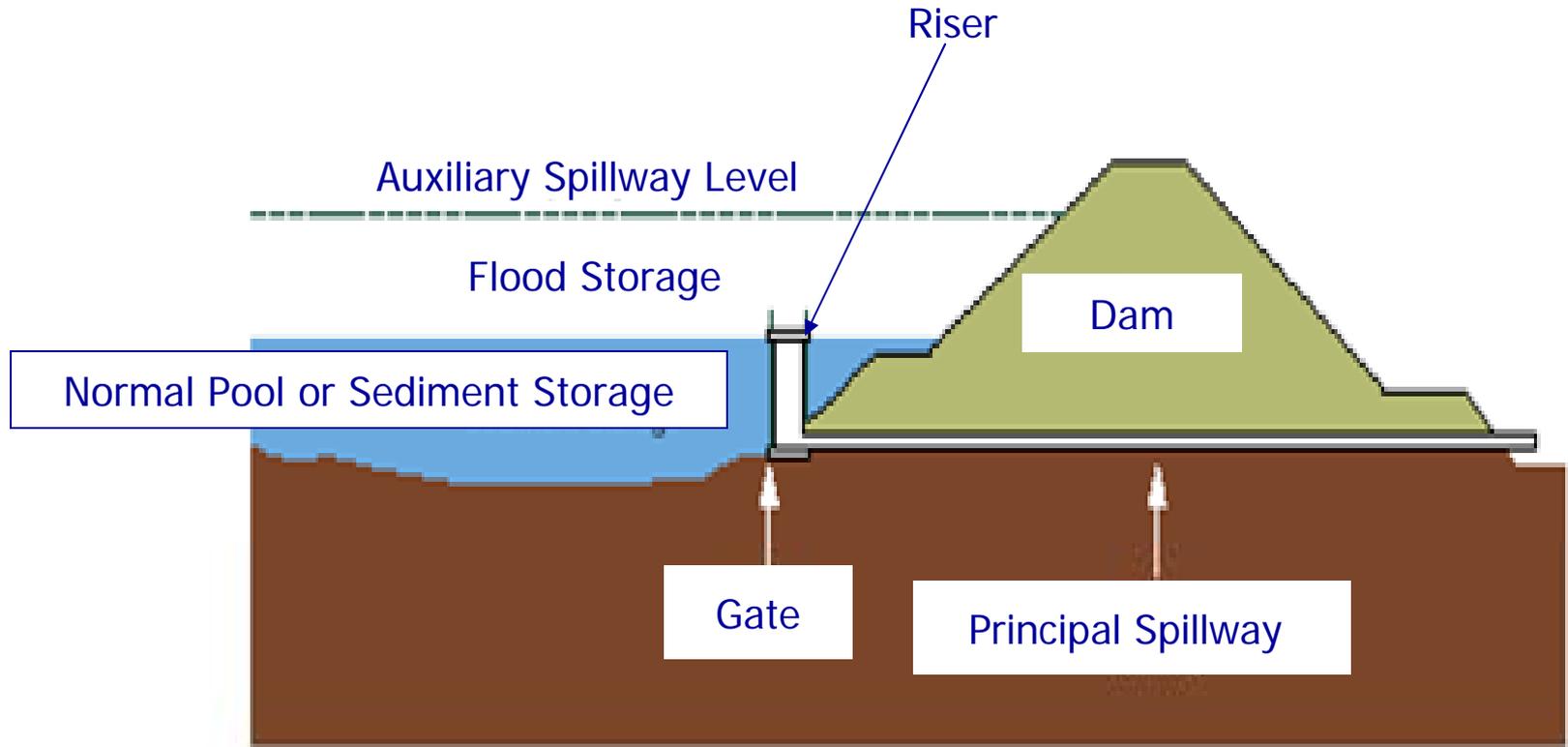


Huntsman Lake - Pohick No. 8

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Typical Dam

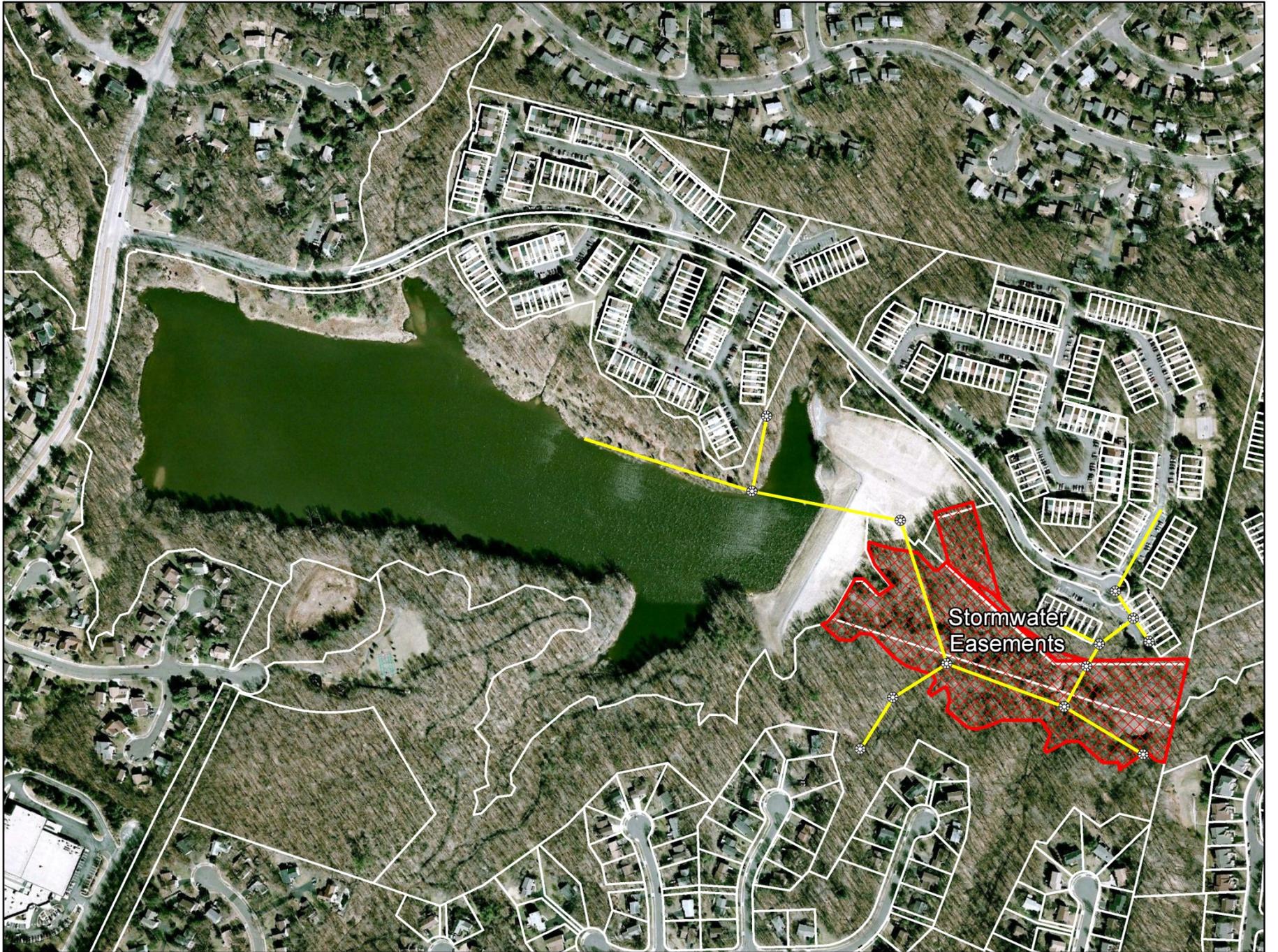


Huntsman Lake Statistics

- Built in 1973
- Drainage area = 1,485 acres
- Pool surface area = 26 acres
- Floodwater surface area = 60 acres
- Length = 683 feet
- Height = 44 feet
- Designed to store runoff of 100 yr. storm

Huntsman Lake – Pohick 8 3D Rendition





Stormwater
Easements





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Crossing at Thornecliff Lane



Crossing at Hooes Road





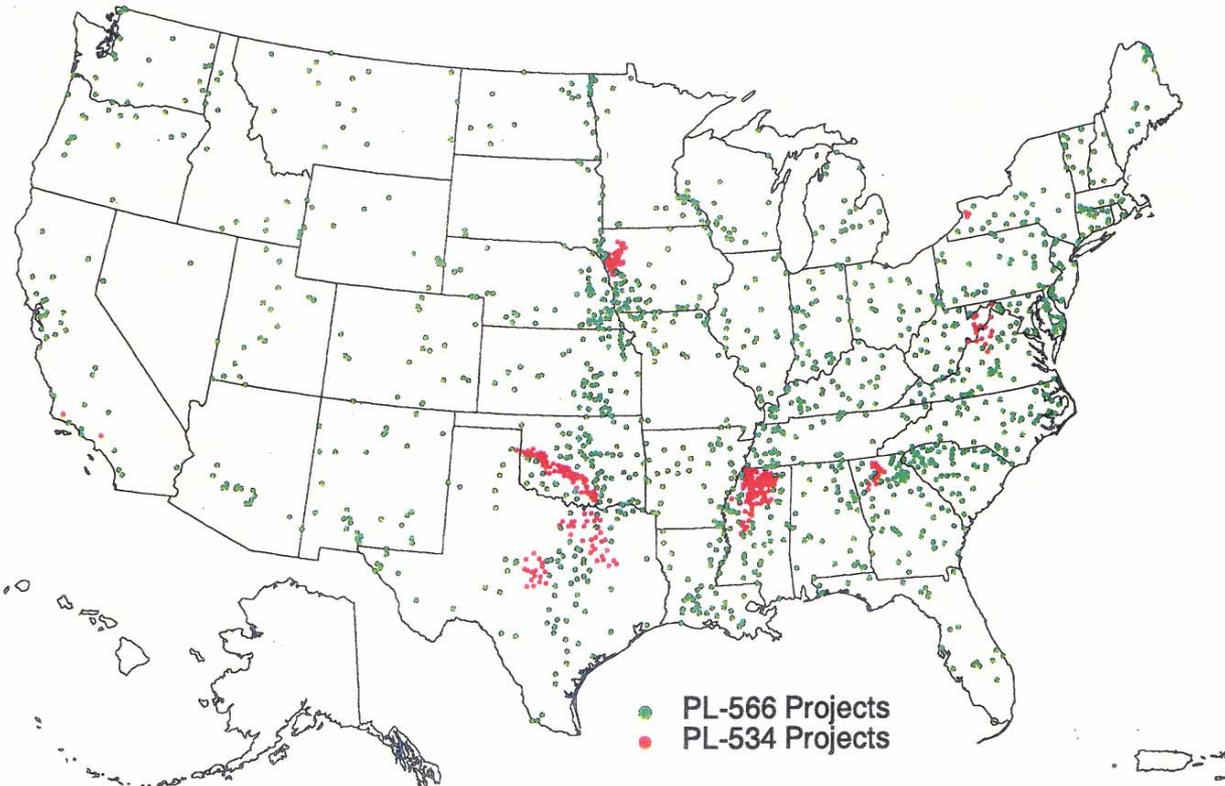
Crossing at Fairfax County Parkway

Crossing at Gambrill Road



Small Watershed Program

Watershed Project Locations



NRCS has assisted communities build more than 11,000 dams since 1948

Dam Rehabilitation Legislation

“The Small Watershed
Rehabilitation Amendments”

(Public Law 106 - 472; Sec. 313)

Enacted November 9, 2000

“Rehabilitation”

- Extend service life of dams and meet applicable safety & performance standards
 - Prolong beyond original life
 - Replace deteriorating components
 - Repair after catastrophic events
 - Upgrade to meet dam safety laws
 - Decommission (removal)

The only dams eligible for
rehabilitation are those built with
NRCS assistance

- There were four Pohick Creek dams in need of rehabilitation to protect lives and property.
 - Lake Royal (construction complete)
 - Woodglen Lake (under construction)
 - Lake Barton (in bidding process)
 - Huntsman Lake

Reasons for Rehabilitation of Huntsman Dam

- County has received a *Conditional Operation and Maintenance* Certificate from State Dam Safety Agency
- Sponsors are responsible for correcting the identified hazard by repairing or removing the dam.

White Oak Dam in Madison County, VA







What NRCS Provides

- 65% Federal Cost-Share
- 100% cost of NRCS technical assistance for Planning, Design, Contracting and Construction
- Upgrade entire structure for 50-100 years

Rehabilitation Implementation Process For Each Dam

1. Sponsor application
2. Site assessment and risk analysis
3. Ranking of applications
4. **Project Planning**
5. Design
6. Construction

Planning Process

- **Phase I** – Data Collection and Analysis
- **Phase II** – Formulate and Evaluate Alternatives; Sponsor's Make Final Decision
- **Phase III** – Design and Construction of Selected Alternative

Sediment Survey Completed

- There is Adequate Sediment Storage
 - 152 acre-feet of capacity remaining
 - 70 years remaining life



Cultural Resources Survey

- A Phase I survey was completed but nothing of significance was found.

Engineering Assistance is Being Provided by Fairfax County Through Schnabel Engineering

- Emergency Spillway Investigation
- Emergency Spillway Risk Analysis
 - Included HEC RAS and SITES Model Runs
- Consideration of Structural Alternatives

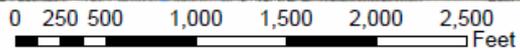


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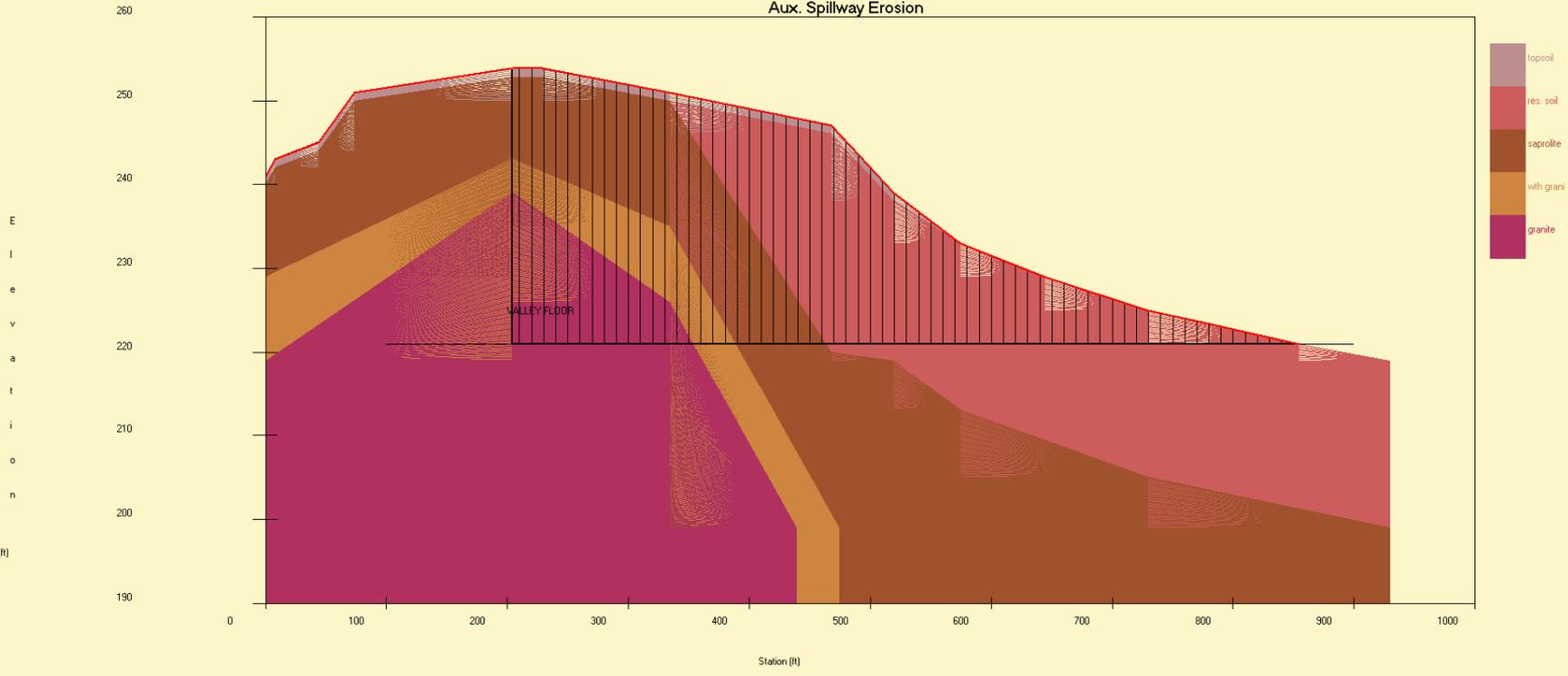
-  Pohick 8 - Huntsman Lake Preliminary Inundation Zone
-  County Streams



**Pohick 8 - Huntsman Lake Preliminary
Inundation Zone on VGIN - 2007
Aerial Photography**



Aux. Spillway Erosion



AUX. SPILLWAY:, Crest = 253.90, BW = 75.

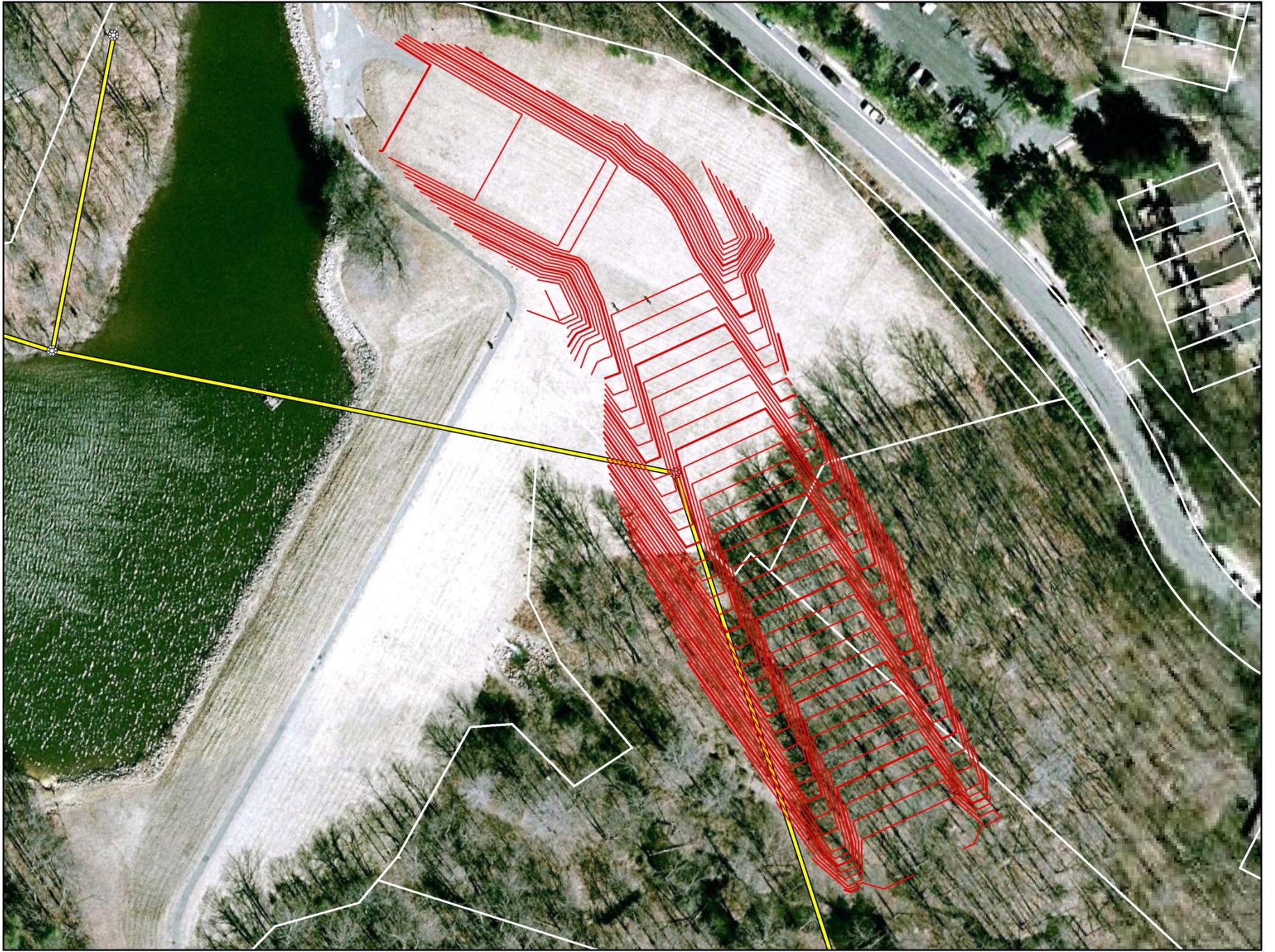
WS = HUNTSMAN, STR = 1, FILE = EXISTING-24hr

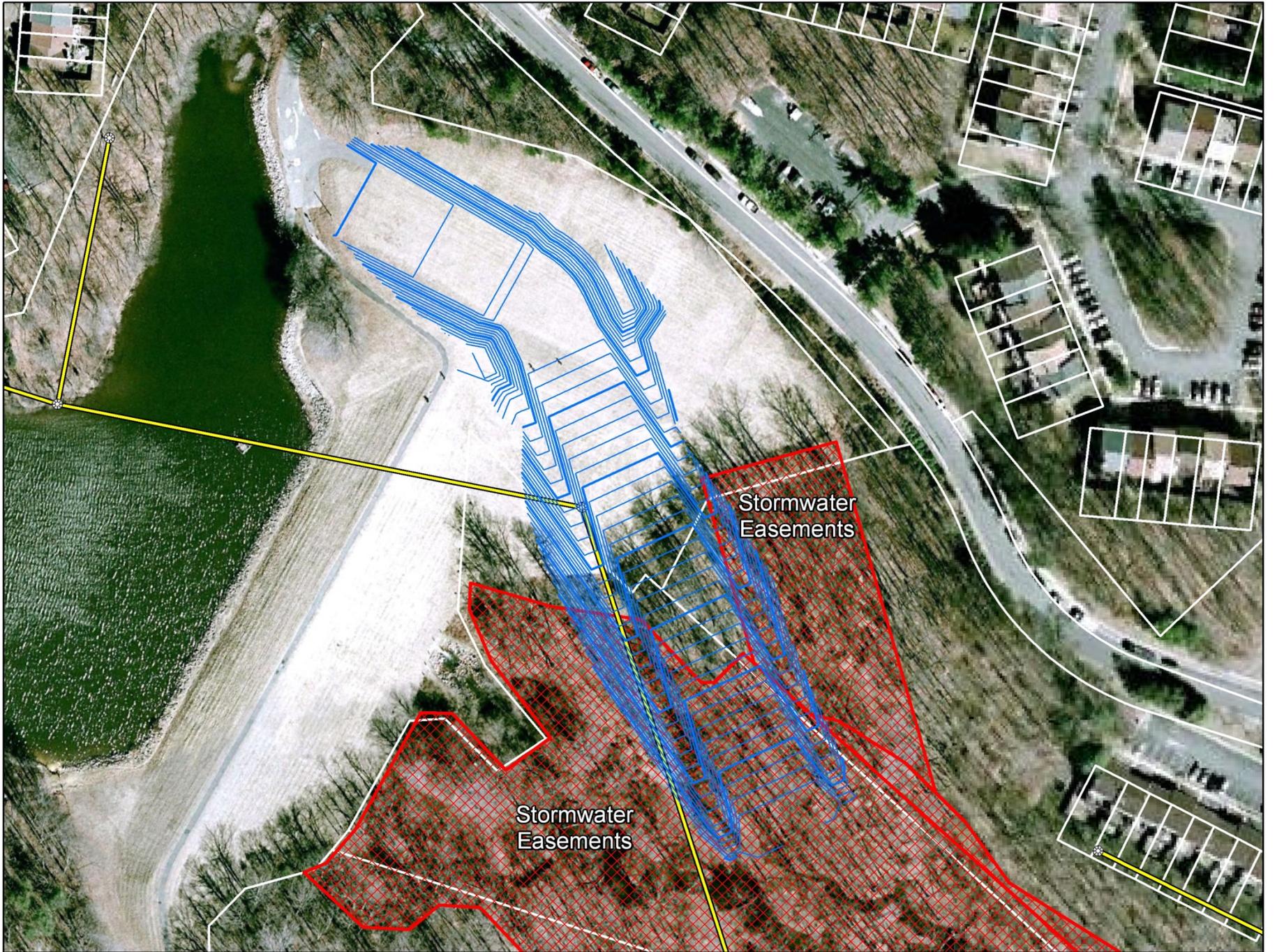
Two Primary Problems

- Auxiliary Spillway
 - Would breach during Probable Maximum Flood
- Riser
 - Open top riser
 - Covered top is safer
 - New seismic stability criteria is not met
 - Low water release gate will not last 50 years

Solutions Proposed

- Armor Auxiliary Spillway to Prevent Breach
- Replace Riser and Top





Stormwater
Easements

Stormwater
Easements

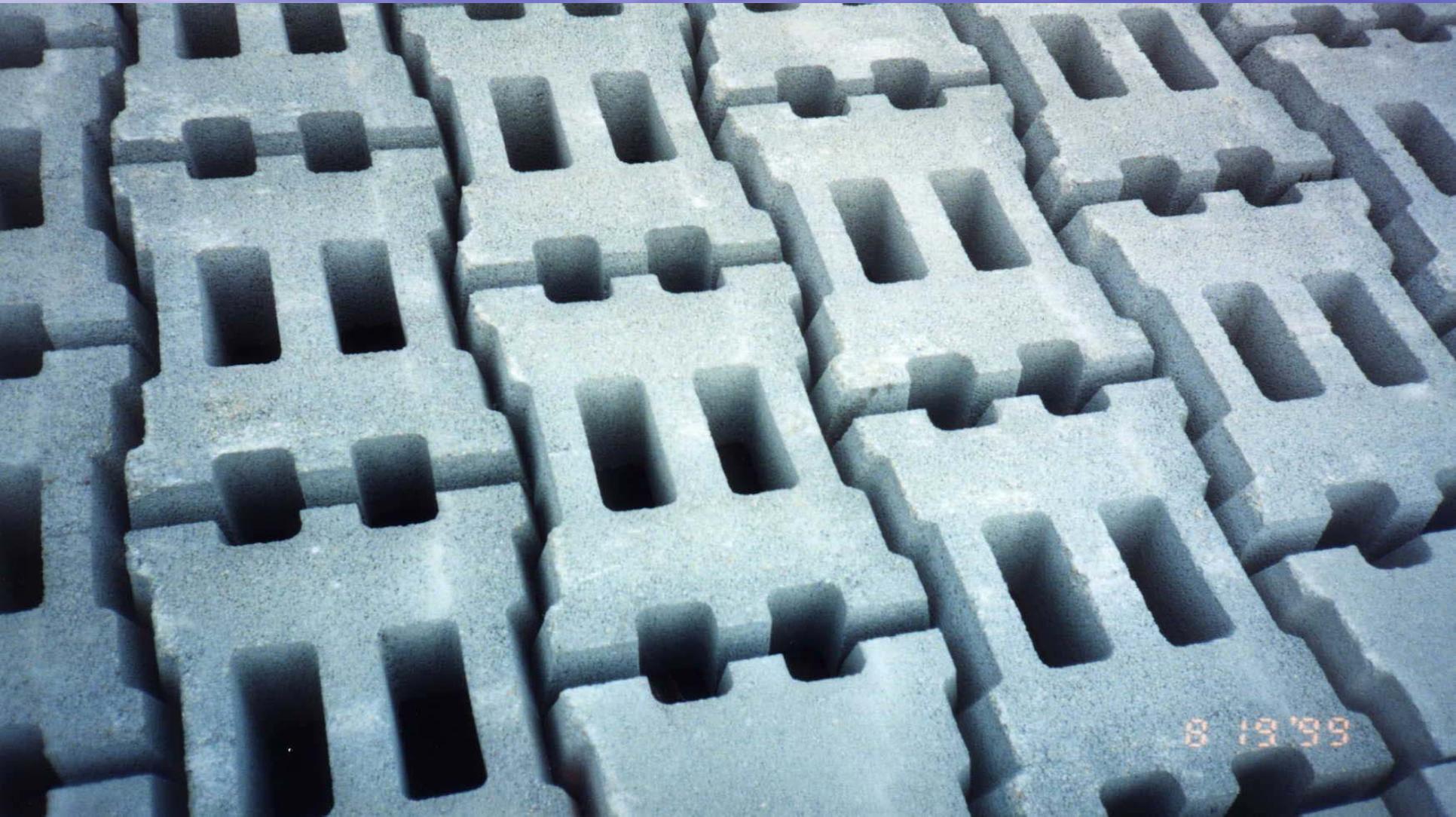


Parcel Ownership

1 & 2: Fairfax County Park Authority

3: Lakewood Hills No. 1 Community Association

Open Cell Articulated Concrete Blocks (ACBs)













11/30/2009





Repairs Completed to White Oak Dam

Rehabilitation Impacts

- Construction Traffic and Staging Area
- Remove Some Trees Below Dam
- Will Have to Drain Lake to Replace Riser



Golden Ball Tavern Ct

Golden Leaf Ct

Access Road

Staging Area



12/01/2009

Open Top Riser



Replace Riser Tower and Install Covered Riser





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Additional Information Needed

- Environmental
 - Wetlands
 - Threatened and Endangered Species
 - Etc.
- Socio-Economic
 - Costs
 - Benefits

Overall Rehabilitation Schedule

- Schedule for planning, design and construction of Huntsman Lake is :
 - Draft plan completed May 2011
 - Final plan completed August 2011
 - Design package completed January 2012
 - Construction begins Spring 2012
- Note: All is dependent on having adequate resources (funding and staffing) to follow through.

A watershed committee with representatives from the sponsors and the community will provide input and make decisions.

Bottom Line

- NRCS is committed to assisting sponsors to rehabilitate this structure
- This dam provides tremendous value
 - Flood Protection
 - Open Space
 - Recreation
 - Fish and Wildlife Habitat
 - Property Value

Commitment to Public Safety

- NRCS
- Sponsors
 - Fairfax County Board of Supervisors
 - Northern Virginia Soil and Water Cons. District
- Public Involvement
 - Everyone has a stake in the project.
 - Everyone must be willing to “give and take” in order to come up with best solution.

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Questions and Answers

