



Northern Virginia Stream Restoration Bank Annual Status Report

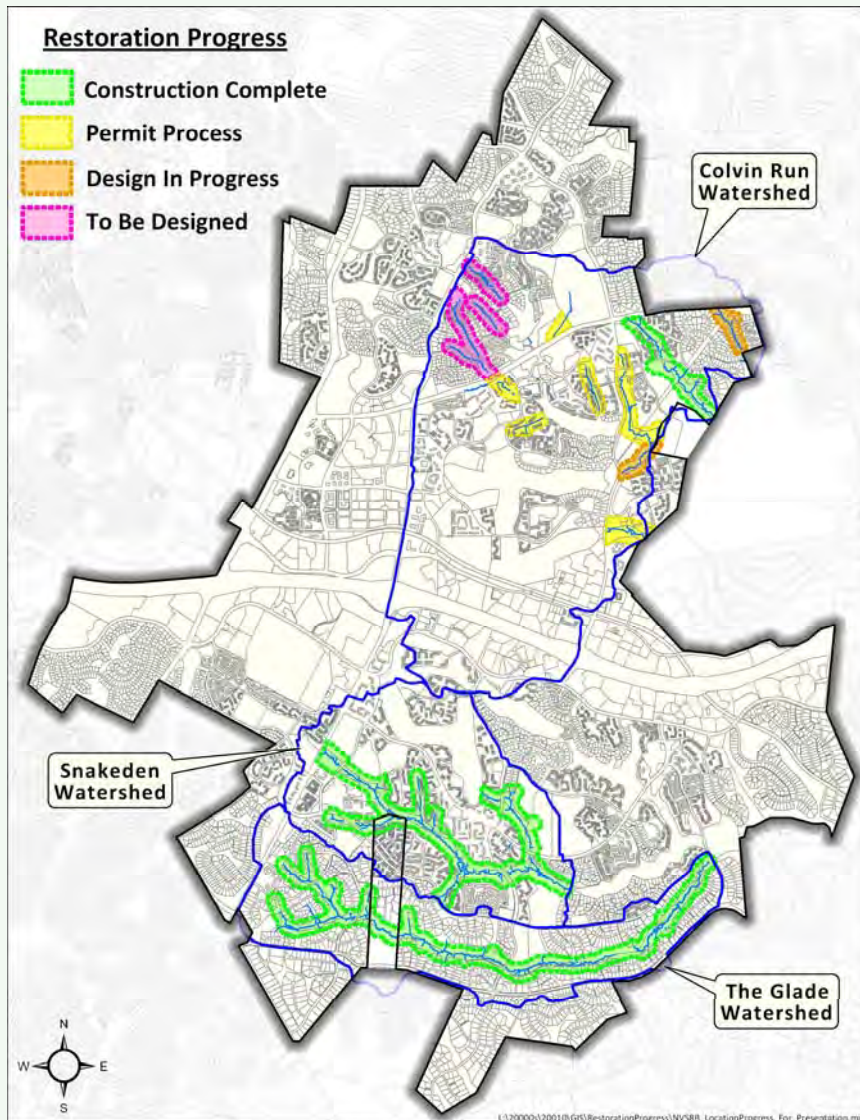
December 15, 2011

**Presented by Michael Rolband
P.E., P.W.S., P.W.D., LEED® AP**

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2011 Overall - NVSRB Progress



Snakeden Branch

- ❖ 3.8 miles restored
- ❖ Lower reaches finishing 3rd growing season

The Glade

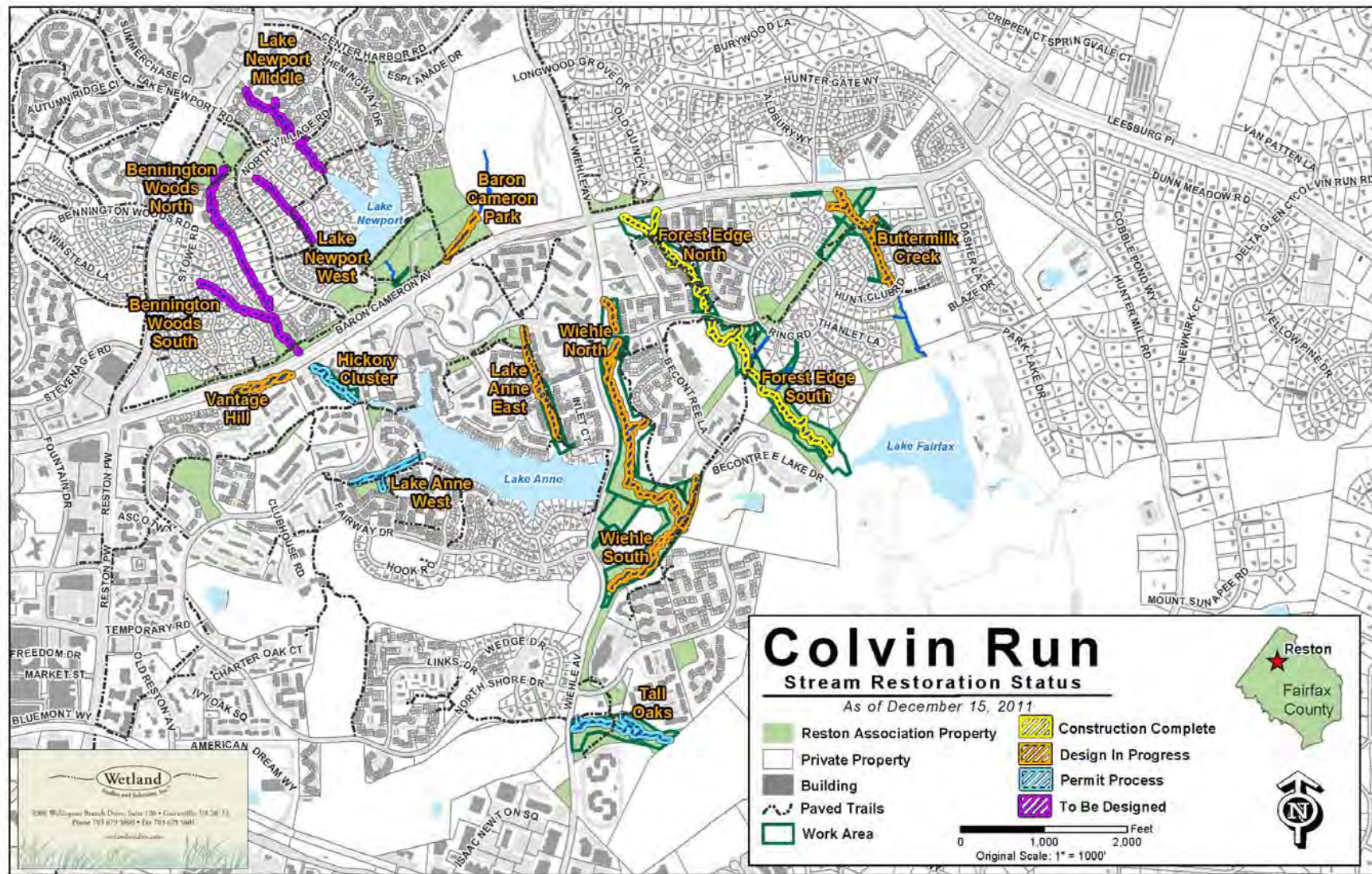
- ❖ 3.8 miles restored
- ❖ Lower reaches finishing 2nd growing season

Colvin Run

- ❖ 0.92 miles restored (4.1 miles to go!)
 - Forest Edge North – July 2011
 - Forest Edge South – April 2011
- ❖ Approval process in other reaches continue

Plus, endured catastrophic rain event!

NVSRB Colvin Run - Plan Approval Status



Catastrophic Storm Event: September 5-8, 2011

- 9.65 inches in 3 days with 5.4 inches falling in 3 hours
- Qualifies as 200-500 yr storm (per NOAA Atlas 14) for 3- & 6-hr storms

Snakeden Branch Reach 4 Time Lapse



5 MINUTES REACH4AM SEP.08,11 01:32 PM



5 MINUTES REACH4AM SEP.08,11 02:57 PM



5 MINUTES REACH4AM SEP.08,11 05:33 PM



5 MINUTES REACH4AM SEP.09,11 08:00 AM



September 8, 2011
Snakeden Branch – Reach 17
Stream is usually 30 ft from sign
Photo by Others



September 8, 2011
Snakeden Branch – Reach 11
Looking upstream from Soapstone Drive
Photo by Others



September 8, 2011
The Glade – Reach 4B
Looking at stream just upstream of Bridge #59
Photo by Others

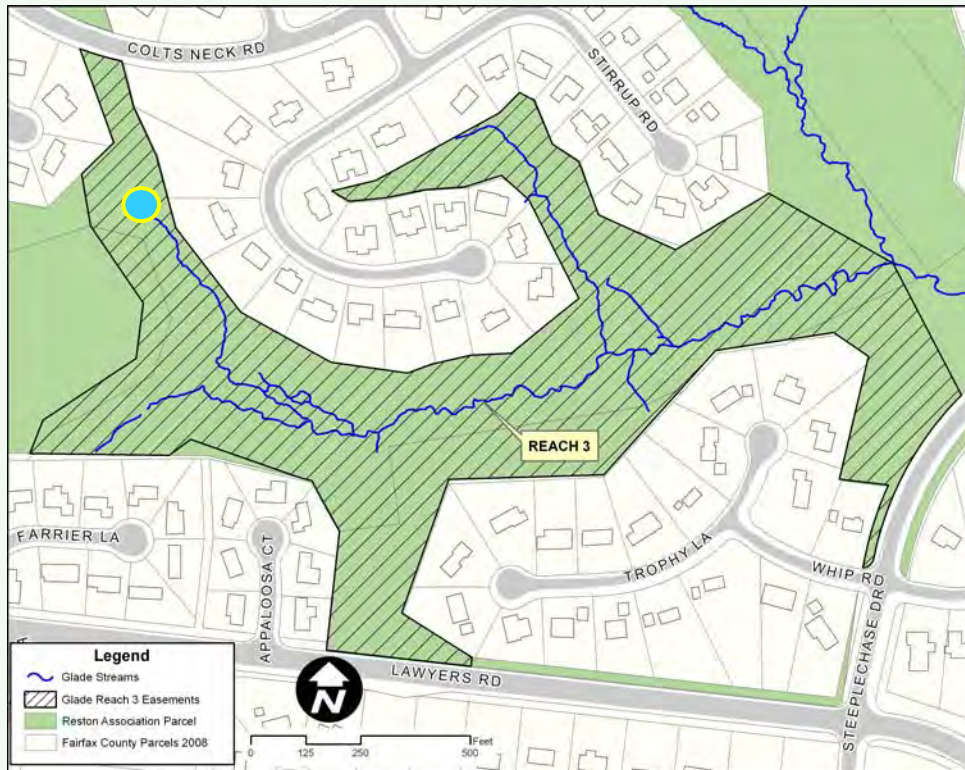
September 12, 2011
Snakeden Branch – Reach 3



September 12, 2011
Snakeden Branch – Reach 7



The Glade – Reach 3 Channel Re-grade

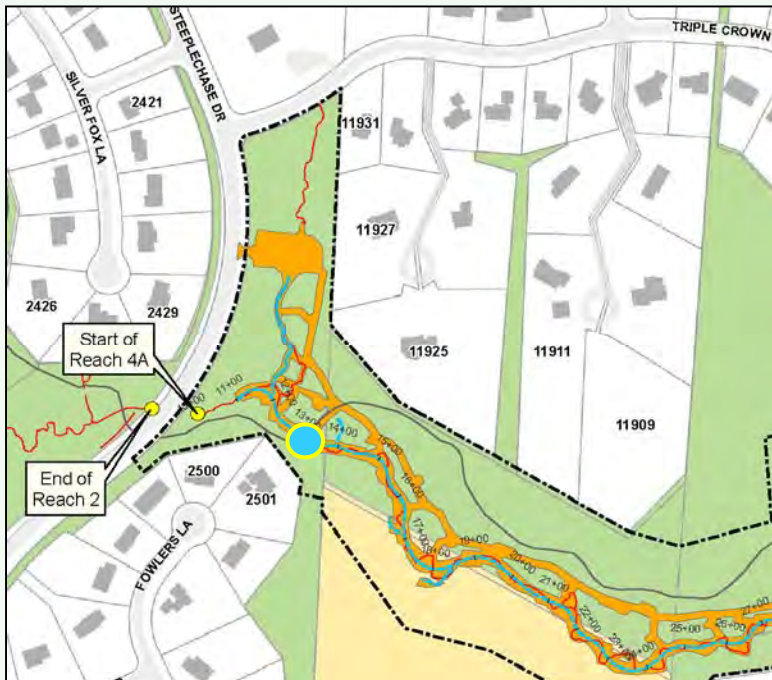


- Deposition of material that washed out from upstream culvert system.



The Glade – Reach 4A

2-Step Cross Vane



- One rock slipped (only structure that had a problem).
- Placed rock behind vane arm.
- Re-graded and replanted area.

The Glade – Reach 6 Meander



- Design Plan Complete
- DRB Approved: 10/2011
- *Under Review with County and Agencies*

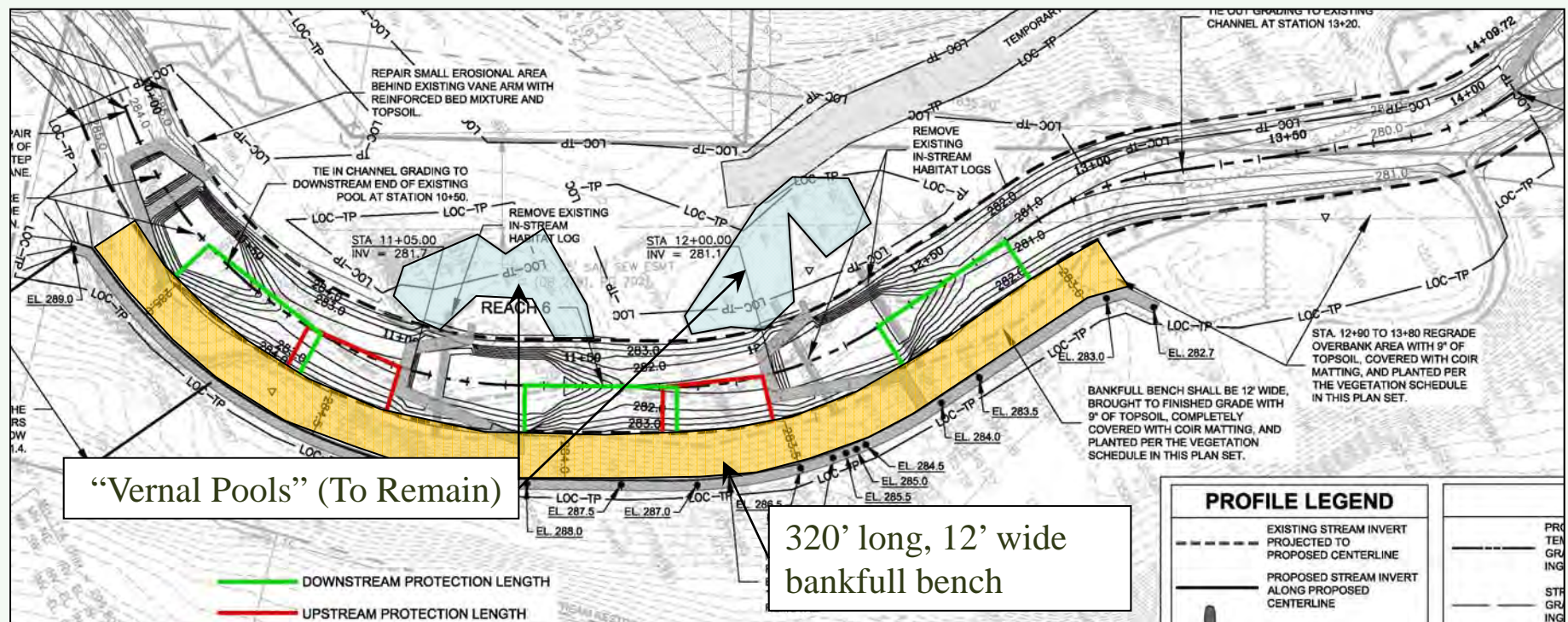
The Glade – Reach 6 (cont'd)

- Damage sustained in The Glade Reach 6
 - Approx. 200' of outside meander bend eroded (right bank)
 - Loss of vegetation on eroded bank
 - Reinforced bed deposited along right bank downstream of erosion
- Why the damage here?
 - Per citizen request, meander was not shifted toward the left bank, and the right bank was previously not protected by in-stream structures in an effort to protect:
 - Two (2) existing vernal pool wetland features (left bank), and
 - Mixed stand of primarily Eastern White Pine, Virginia Pine, and Red Maple trees (right bank)
 - No damage upstream or downstream of meander



The Glade – Reach 6 (cont'd)

- Proposed repairs (*return to original design*)
 - Install 2 new modified cross vanes
 - Install a 320' long, 12' wide bankfull bench with an imbricated rock wall on the right bank (*allows vanes to work - increases flow conveyance capacity and reduces shear stress and velocity*)
 - Repair small erosional area behind existing vane arm (at beginning of meander)
 - Tie-out grading to existing cross vane downstream of meander.
 - Plant heavily with native seed mix and tublings.



September 12, 2011
The Glade – Reach 4B



September 12, 2011
The Glade – Reach 5





Colvin Run

(Forest Edge North & South):

- Crews finished minor grading and redistribution.
- Final plantings scheduled for early next year.



Colvin Run (Forest Edge South):

- Filled abutments with concrete, re-graded and replanted.



Next Trout Day
March 31, 2012