



**Anderson & Associates, Inc.**

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*Hydraulics & Hydrology*

## Anderson & Associates, Inc.

Anderson & Associates, Inc., a professional design services firm, has been engineering the 'high-tech high-touch' way since 1968. A&A is headquartered in Blacksburg, VA with 5 other offices in VA, NC, and TN. The firm practices open book management, and is employee-owned through an Employee Stock Ownership Plan (ESOP). A&A specializes in planning, design, and construction administration for public and private works. Years of offering traditional engineering and surveying services brought forth the need to provide our clients with innovative services to meet their needs and make their projects successful; thus, our continuing investment in state-of-the-art technology.



### Wetland Design Henry County, Virginia

Design and construction of new wetlands on a gently sloping site above Reed Creek. The wetlands was formed by a series of pools which are separated by broad crested earthen weirs. Water levels step down the slope and maximizes the planting zone for new vegetation. A&A provided water balance, grading, hydraulics, planting and maintenance plans.



### Fenwick Mines Wetland Mitigation Jefferson National Forest Craig County, Virginia

The small, rural community of New Castle desperately needed a sewage system to alleviate water quality and health problems associated with the disposal of their domestic wastes. The only practical site for the wastewater treatment plant displaced approx. 2 acres of natural wetlands. By working with the US Forest Service, we located a site that was graded and planted to promote the growth of wetland vegetation. Water level control was incorporated into the design to promote Wood Duck nesting. This wetlands improves the quality of water from old iron mines before it feeds a pond used for fishing. The constructed wetlands and adjoining fish pond have become the focal point for the popular Fenwick Mines Recreation Area.

## What can we do for your environment today?

Anderson & Associates has assembled a team of professionals that understands the sensitivity of the environment and values the quality of life that remains for generations to come by simply taking care of the resources we have. A&A's Hydrology & Hydraulic team has a well-rounded base of experience and broad experience to draw upon in order to provide our clients with the right answer for each unique situation. The H&H team offers a full spectrum of Hydrology and Hydraulic services from water quality modeling, wetland mitigation, stream restoration and relocation, channel stabilization, GIS integration, environmental engineering, watershed analysis, and stormwater analysis, planning, and design.



Regional stormwater detention facility located on the campus of Virginia Tech.

### Stream Restoration

The H&H team evaluates three primary issues when preparing a stream restoration project. First, what caused the problem? We conduct a thorough investigation of the watershed to determine the causes of the problem, as well as predict what changes may occur in the future that will impact the stream. Second, we compare a stable upstream Reach and an undisturbed reach in a nearby sub-watershed. Last, we select an economical approach that will meet or exceed expectations. These are just a few of many issues we consider in an evaluation.



The environment is constantly changing due to urbanization, mining, deforestation and other watershed activities. The H&H team at

Anderson & Associates understands the challenges of these unique characteristics and develops realistic goals for improvements. Our experience, combined with our knowledge of effective water quality and resource management techniques, allows this team to provide not only quality services, but also responsive and innovative methods for improving and maintaining the quality of our chief environmental resource – water.

## Meet our key team members:

### Gary Crouch, PE

- Specialty: Wetlands & Environmental Engineering
- 34 years of hands-on experience
  - Wetland mitigation in Jefferson National Forest, Craig Co., VA
  - Eight-acre constructed wetlands in Henry Co., VA
  - Water quality study of the Upper New River Basin
  - Best management practices (BMP) for Bluefield, VA
  - Stream rehabilitation in Madison Heights & Williamsburg, VA
  - Ten-acre wetland delineation in Floyd Co., VA
  - Conducted environmental research with the US Antarctic Research Program for two field sessions

### Duane Mann, PE

- Specialty: Stream Restoration, Watershed Analysis
- BS from West Virginia Institute of Technology
  - 9 years with NCDOT Hydraulics Department
  - Rocky Powell Applied River Morphology training
  - David Rosgen Level I Applied Fluvial Geomorphology training
  - Scour analysis and remedial design for 2 years
  - Stream restoration using natural channel design for Little Laurel Creek in NC
  - Bank and channel stabilization of North Little Hunting Creek (Wilkesboro, NC) using native streambank vegetation, rock vanes, rootwads, and buffer zones
  - 2 sq mi watershed analysis for a Roanoke River tributary

### Dr. Shane Parson, PE

- Specialty: Water Quality, Floodplain Mitigation
- BS from Virginia Tech
  - MS and PhD from Penn State University
  - Developed InterWET ([www.interwet.psu.edu](http://www.interwet.psu.edu))
  - Water quality modeling for US EPA
  - GIS-based water quality modeling for Greensboro, NC
  - Floodplain analysis & mitigation for FEMA
  - Stormwater planning for Bluefield, VA

### Joe Parrish

- Specialty: Wetland Delineation/Restoration/Mitigation
- BS from Virginia Tech
  - Delineation of wetland boundaries in NC and VA
  - Preparation of permit applications and approval
  - Preparation of NEPA Environmental Assessments
  - Stream/wetland mitigation in Amherst, VA
  - Wetland restoration on New River in Pembroke, VA

What will your legacy be?