

Mr. Corey Cavalier, PE, CFM

7033 Sandringham Court
Raleigh, NC 27613
(919) 280-3934

<http://www.corey.cavalier.pro/>
corey@cavalier.pro

Professional Summary

Mr. Cavalier is a Professional Engineer licensed in 4 states as well as a Certified Floodplain Manager with 8 years of experience in floodplain studies and mapping, hydraulic and hydrologic studies, the design of bridge openings and culverts, and stormwater structural best management practice (BMP) design. His experience includes technical analysis/ design, quality control of engineering analysis and product format, field investigation, and personnel and inter-organizational coordination.

Professional Qualifications

Professional Engineer (PE) in Georgia, North Carolina, South Carolina, and Virginia
Certified Floodplain Manager (CFM), North Carolina Association of Floodplain Managers
Certified Stormwater BMP Inspector, North Carolina Cooperative Extension
Low Impact Development (LID) Certified Professional, North Carolina Cooperative Extension
Level IIIA Erosion & Sediment Control / Stormwater Certification, North Carolina Dept. of Transportation

Education

University

Masters of Civil Engineering
Environmental Engineering
North Carolina State University
December 2000
GPA: 3.2

Bachelors of Science
Civil Engineering
The University of Texas at Austin
(Junior year - University of Wales Swansea)
May 1999
GPA: 3.45

Continuing Education

2009: Introduction to Fluvial Geomorphology, NCSU Biological & Agricultural Engineering Department
Design of Sediment and Erosion Control Plans, North Carolina Cooperative Extension
Beginner's SWAT, North Carolina Cooperative Extension
Fundamentals of Construction Contracts & Negotiation, NCSU Civil Engineering Extension
Self-Paced PCSWMM / SWMM5, Computational Hydraulics International
2006: HEC-RAS Computer Workshop for Unsteady Flow Applications, American Society of Civil Engineers
2005: Designing Stormwater Practices, NCSU Stormwater Engineering Group

Employment History

Sept. 2009 – Present Engineer, NCDENR Public Water Supply Section
Manages 20+ projects receiving \$21+ million in funding from the American Recovery and Reinvestment Act or the Drinking Water State Revolving Fund. Guides funding recipients through contracting, financial reporting, and other requirements. Reviews and inspects progress of construction. Prepares and assists in the preparation of program progress reports. Aids in group task management and coordination.

May 2006 – March 2009 Project Engineer, The John R. McAdams Company, Inc.
Designed structural stormwater BMP facilities, including dry detention, wet pond, and wetland facilities. Designed culverts and bridges for road crossings. Performed and revised floodplain studies and proposed mitigation and floodproofing plans. Produced maps and design drawings. Performed in-field site assessment. Coordinated work with personnel in different departments, offices, and organizations with varying backgrounds. Wrote or edited technical reports, documentation, and presentations as needed. Gave presentations to clients and government officials as needed.

Jan. 2004 - March 2006 Water Resources Engineer, AMEC Earth & Environmental, Inc.
Designed structural stormwater BMP facilities, including bioretention and wet pond facilities. Evaluated peak flow mitigation using HEC-HMS, Dr. Rooney Malcom's Chainsaw Routing Method, etc. Evaluated GIS-based hydraulics and hydrology software applications. Performed, revised, and reviewed floodplain studies. Produced maps and design drawings. Performed in-field site assessment. Delegated and coordinated tasks, including field survey. Wrote or edited technical reports, documentation, and presentations as needed. Gave presentations to client as needed.

Feb. 2001 - Dec. 2003 Project Engineer, Greenhorne & O'Mara, Inc.
Designed culverts and bridges for road crossings. Performed, revised, and reviewed FEMA flood studies. Produced maps. Performed in-field site assessment. Delegated and coordinated tasks, including field survey, among personnel in different departments, offices, and companies with varying technical backgrounds. Wrote or edited documentation and presentations as needed. Gave presentations to client as needed.

Jan. - Dec. 2000 Research Assistant, North Carolina State University
Analyzed disinfection processes using mathematical species-specific inactivation reaction rate models. Compared predictions of reactor products from differing flow models. Flow models included segregated flow of residence time distribution, CSTR in series, plug flow - dispersion, and Navier-Stokes - based computational fluid dynamics (CFD). Knowledge of underlying fluid mechanics and disinfection processes as well as technical writing skills was required.

Jan. - Dec. 2000 Teaching Assistant, North Carolina State University
Assisted with instruction of undergraduate civil engineering lectures by providing and reviewing materials as well as assessing student progress. Lectures covered topics of fluid mechanics and systems engineering. Prior fundamental knowledge of the subject as well as limited personal instruction was required.

Aug. - Dec. 1999
Instructed and demonstrated hydraulic phenomena in the laboratory. Use of public speaking and technical writing skills as well as a fundamental understanding of fluid mechanics was required.

Presentations

"A Comparison of Methods for Determining Peak Discharge in Small Watersheds at Selected USGS-gaged Locations," 2010 WRRI Annual Conference. Raleigh, NC. March 2010.

"Limitations of LIDAR and Other Remote Sensing Data from the User's Perspective," Association of State Floodplain Managers National Conference. St. Louis, MO. May 2003.

Professional Organization Memberships

2003 – Present: Assn. of State / North Carolina Assn. of Floodplain Managers
2003 – Present: American / North Carolina Water Resources Association
2006 – Present: American Society of Civil Engineers

Software

Hydraulics

HEC-RAS, HEC-2, HY-8, HEC-GeoRAS, RiverCAD, Phoenix CFD, Groundwater Modeling System (GMS)

Hydrology

HEC-HMS, PondPack, ArcHydro, Watershed Modeling System (WMS), Soil & Water Assessment Tool (SWAT)

Other Engineering

PCSWMM / EPA-SWMM5, Watershed Information SystEm (WISE)

Geographic Information Systems (GIS)

ArcGIS & ArcView w/ Spatial Analyst, 3D Analyst

Computer Aided Design Drafting (CADD)

AutoCAD, MicroStation (beginner)

Global Positioning System (GPS)

TerraSync (beginner), Pathfinder Office (beginner)

Programming - Debugging

Visual Basic, Avenue, Fortran, C(++)

Office

Excel, Word, Outlook, PowerPoint, Access, Open Office