

Water Resources and Surface Water Engineering

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Water Resources Group

Management and Technical Team

- **Kamal Saffarinia, Ph.D.**
 - Technical Director and Manager of Water Resources
- **Carl R. Corse, P.E.**
 - Operations Manager – Annapolis, Maryland
- **George Lu, Ph.D., P.E.**
 - Team Leader/Project engineer
- **Zhen Feng, Ph.D., P.E.**
 - Project Engineer
- **Yi Zhong, P.E., DPE**
 - Project Engineer

Kamal Saffarinia, Ph.D.

Technical Director and Manager of Water Resources

- Dr. Saffarinia joined the firm in 2001 and has over eighteen years of experience in water resources and environmental science.
- Received his Ph.D. and Master degrees from The Catholic University of America in Washington, D.C.
- Served as technical consultant to FHWA, FEMA and other local governments on the application of one and two-dimensional models for complex hydrodynamic situations in estuaries and tidally effected rivers.
- Dr. Saffarinia's area of expertise includes: water supply distribution, water quality and environmental study, flood and risk assessment analysis and computational modeling.
- Published several papers and reports on the application of numerical modeling for rivers and water bodies.
- Taught courses in fluid and soil mechanics and H&H Computer models.

Carl R. Corse, P.E.

Operations Manager – Annapolis, Maryland

- Mr. Corse joined the firm in 2008 and has over twelve years of experience in surface water engineering and general civil engineering design.
- Received his Bachelor of Science degree with honors from Temple University in Philadelphia and has studied and trained with David Rosgen and Dr. Richard Hey in theory and application of natural stream channel designs.
- Prepared large-scale watershed hydrology studies, designed and managed the construction of numerous river valley and stream restorations and relocations, and designed high-profile regional stormwater management solutions in numerous states along the eastern seaboard.
- Mr. Corse's areas of expertise include: hydrologic modeling, flood analysis and hydraulic structure performance, stream and river restoration/ stabilization, reclamation designs for industrial lands, high-hazard dam design and permitting, and stormwater management designs using multiple methodologies.
- He has published a case study on Erosion and Sediment Control for Mine Reclamation and supervised and trained dozens of young Engineers in the application of Hydrologic and Hydraulic principles.

Zhen Feng, Ph.D., P.E.

- Received his Ph.D. from North Carolina State University in Raleigh, North Carolina.
- Holds a master degree in hydraulic and hydrology engineering from Tsinghua University, Beijing China.
- His expertise in the field of water resources includes: Hydraulic/Hydrologic Study, Watershed/Drainage Analysis, Application of GIS in Hydrology, Stormwater Management and Best Management Practice (BMP), Low Impact Development (LID), Dam Breach Analysis, Flood Plain Studies and Computational Modeling.

Yi Zhong, P.E., DPE

- Received her Masters degree from the University of Virginia.
- Performs hydrology and hydraulic modeling, water supply distribution, SWM/BMP design and floodplain studies.

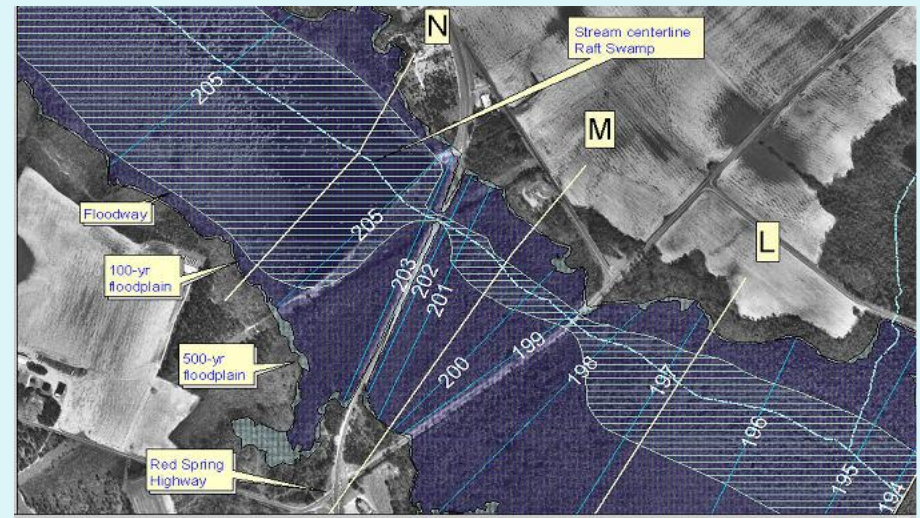
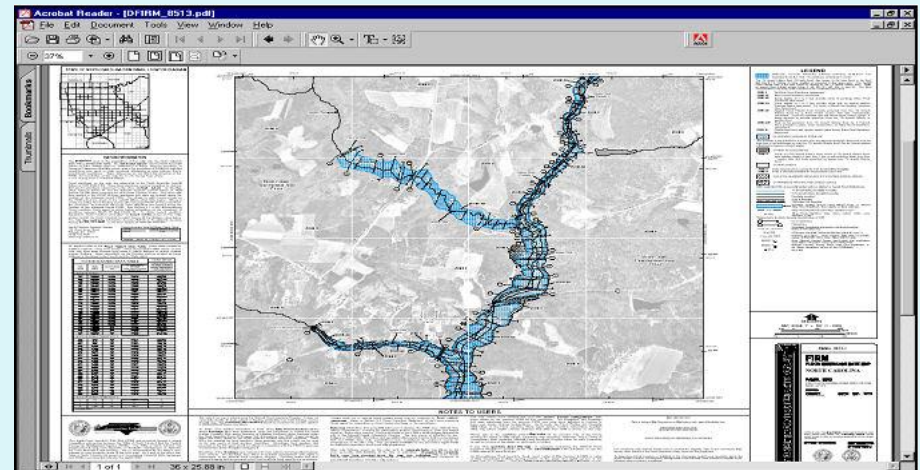
Select Projects & Professional Experience

- Floodplain Mapping - Statewide, North Carolina/FEMA
- Devils Lake Flood Impact Study; North Dakota/FEMA
- Navy-Marine Corps Stadium Renovation and Enhancement Project, City of Annapolis and NAAA, Annapolis, Maryland
- Bath Branch Stream Valley Restoration, Winston-Salem, North Carolina
- White Marsh Run Stream Valley Restoration, Baltimore County and Redland Genstar, Inc., White Marsh, Maryland
- Porter Drive Stream Valley Restoration, City of Annapolis, Maryland
- Texas Quarry Stream Relocation and Restoration, Lafarge Corporation, Cockeysville, Maryland
- Cherry Grove Stream Enhancement and Bridge Design, City of Annapolis, Maryland
- Bulle Rock Resort and Conference Center Stream Relocation, Blenheim LLC, Havre de Grace Maryland
- Elkton Raceway Improvements, Town of Elkton Department of Public Works, Elkton, Maryland

Select Project Details

Floodplain Mapping - Statewide, North Carolina/FEMA

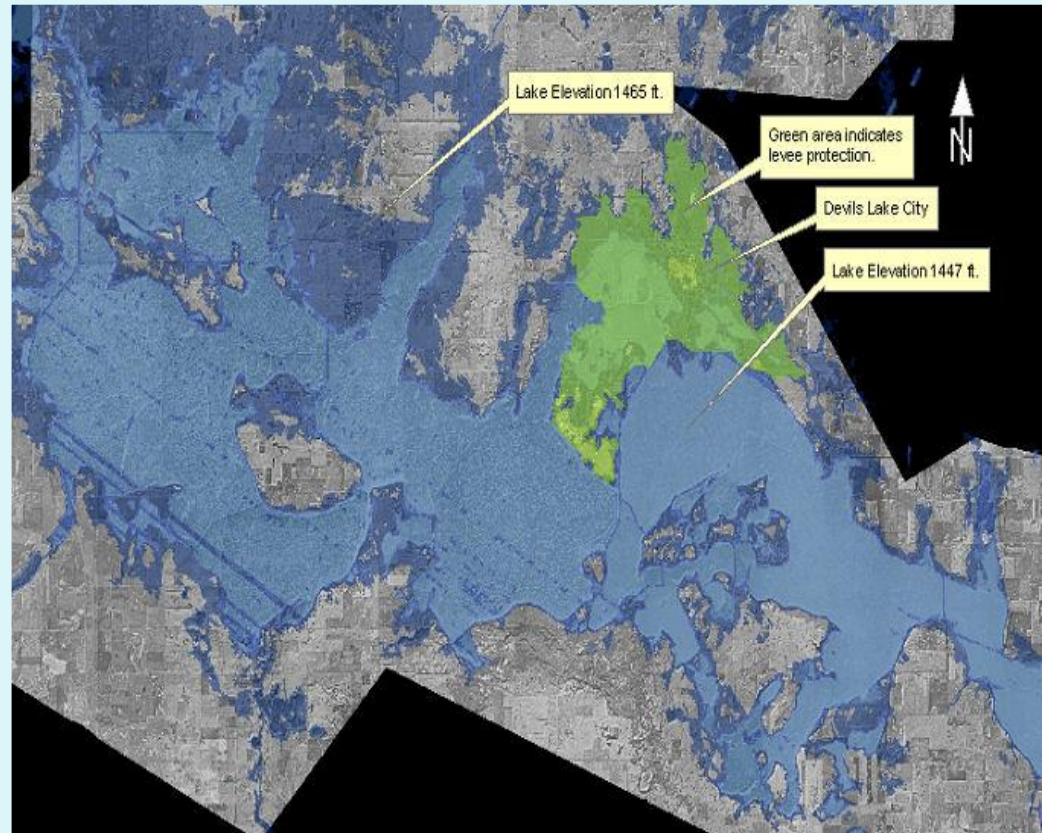
- ATCS supported a statewide elevation data and floodplain mapping program in accordance with the Federal Emergency Management Agency (FEMA) digital flood insurance rate maps (DFIRM) specifications.
- Tasks include working on data analysis, hydrographic surveys, water resources engineering, GIS and mapping, task cost estimate/cost control, extensive QA/QC and information technology services to the State for a five-year period.
- Providing LIDAR data collection for more than 13,000-square-miles of the Lumber and Cape Fear watersheds



Select Project Details

Devils Lake Flood Impact Study, North Dakota/FEMA

- Provided analyses of the 100,000-acre closed basin that drains an area of 3,810-square-miles.
- ATCS provided the FEMA regional office with engineering, a complete database management, project management, and mapping works, implementing LIDAR digital mapping of elevation data, aerial photographs, and GIS technologies in defining different lake elevations that impact the residential, commercial, and public structures in the vicinity of the closed basin.



Select Team Member Experience

Navy-Marine Corps Stadium Renovation & Enhancements City of Annapolis & NAAA, Annapolis, Maryland

- Partnership enhancement project for the Stadium grounds along Taylor Avenue in Annapolis.
- Project included stormwater management retrofits for parking and stadium areas, entrance improvements, and a 1.25-mile perimeter recreational trail system and landscaped buffer.
- Stormwater and Critical Area Designs and Permitting
- Storm Drain Design for lowered field under drain system.



Select Team Member Experience

Bath Branch Stream Valley Restoration Winston-Salem, North Carolina

- 600-acre downtown redevelopment project including three regional stormwater facilities, a 35-foot concrete dam design, stream valley restoration using natural channel designs, and extensive storm drain and sewer infrastructure for the Wake Forest University Bio-Medical Research Park.



Select Team Member Experience

Porter Drive Stream Valley Restoration City of Annapolis, Maryland

- Restoration of approximately six (6) acres of degraded stream valley along Weems Creek in the Admiral Heights Community. Design included incised channel restoration, rubble dump removal, stream valley grading and re-vegetation, and permitting and community interface.



Select Team Member Experience

Mountain Branch Golf Course Stream Creation Joppa, Maryland

- Provided design and construction oversight for the creation of a 2,200-foot pumped stream bisecting the fairway of the 18th hole. Project included step-pool and grade control design and installation, clean water scour calculations, and interface with irrigation systems and water storage facilities.

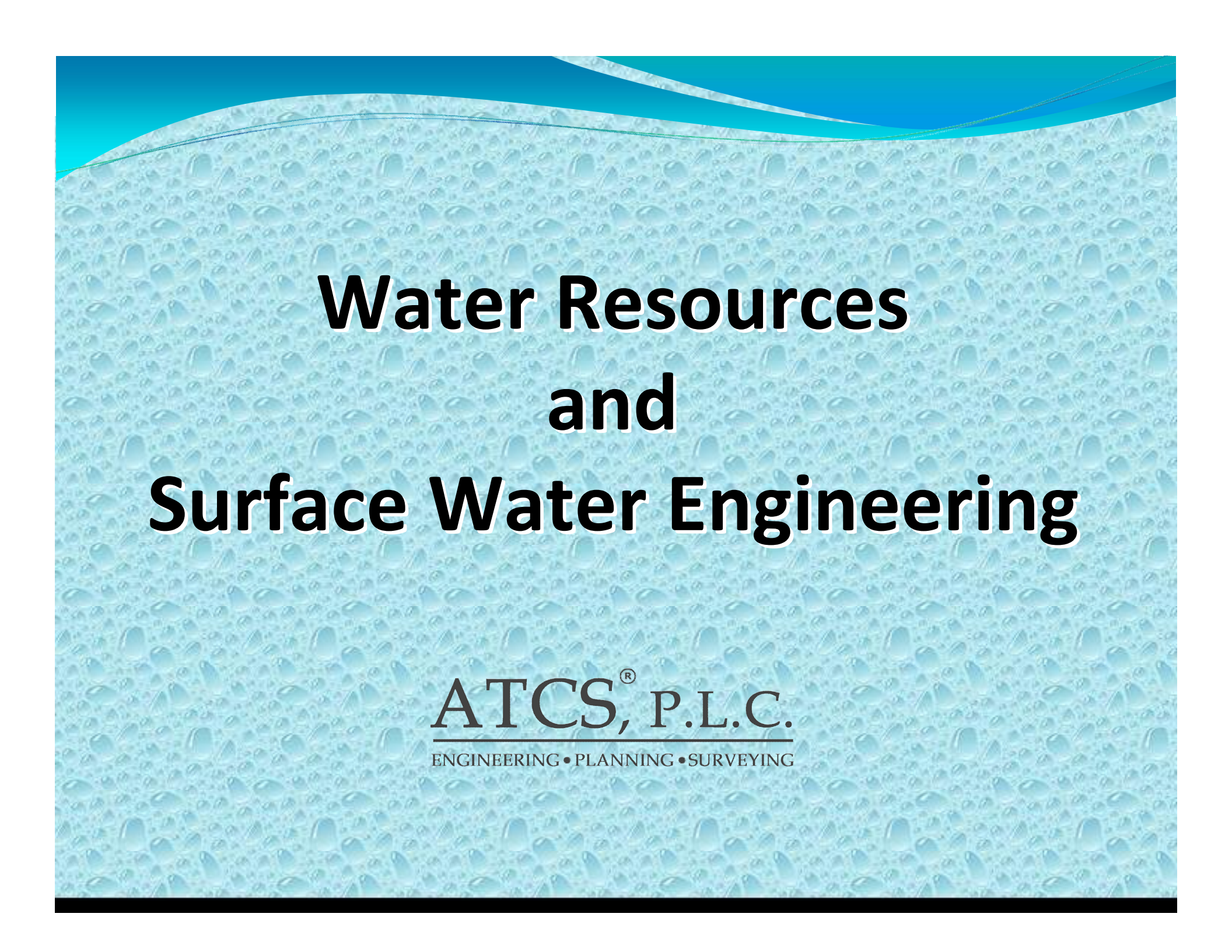


Select Team Member Experience

Cherry Grove Stream Enhancement & Bridge Design City of Annapolis, Maryland

- Stream enhancement design for a portion of Upper Spa Creek at Cherry Grove Road. Designs included channel dimension modifications, grade control, bio-engineered stream bank stabilization, landscape architecture, bridge specifications and design, and a storm drain headwall and outfall stilling basin.



The background of the slide features a pattern of light blue water droplets on a slightly darker blue surface. At the top, there are stylized, wavy lines in shades of cyan and blue, suggesting water or a sky horizon.

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