William Edward McMillin, Jr., P.E.

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Education

M.E.E., Environmental Engineering, Manhattan College, 1988
B.C.E., Civil Engineering, Manhattan College, 1986

Professional Registrations

Professional Engineer: New Jersey (#24GE04250700)

Distinguishing Qualifications

- CH2M HILL's northeast region technology leader for Water Portfolio Management.
- National expert on water quality assessments, standards and criteria, Total Maximum Daily Loads, Use Attainability Analyses, regulatory liaison and NPDES permitting.
- Extensive experience in wet weather flow management including Long-Term CSO Control Planning, facility planning, pilot testing, permitting, and floatables controls.
- Developer and senior reviewer of mathematical modeling (hydrologic, hydraulic, mixing zones, receiving waters and sediments) for water supply, conveyance and collection systems, and receiving water responses for planning, environmental assessments, and restoration.
- Plans and manages collection system and wastewater treatment design.
- Manages public participation programs and stakeholder coordination while personally conducting public outreach, education, and professional speaking.
- Plans and manages field investigations and data management fully compliant with state and federal quality assurance project plan (QA/QC) requirements.
- Experienced project and program manager with multi-million dollar budgets.
- Provides expert witness testimony.

Relevant Experience

Technical Consultant on Lambert St. Louis International Airport On-call Services, St. Louis, MO; July 2009 to present. Providing senior consultation on work plan development to assess water quality impacts of aircraft deicer use at Lambert St. Louis International Airport on local receiving waters. The assessment will be used to review and potentially revise water quality based effluent limits in the NPDES permit. Work plan elements include stormwater discharge and receiving water modeling, airfield deicer and stormwater modeling, and receiving water modeling of Coldwater Creek, a tributary of the Missouri River.

Technical Consultant to the U.S. Navy CLEAN Program at AFETA Camp Peary,

Williamsburg, VA; February 2009 to present. Provided senior consultation and directed mathematical modeling for the U.S. Navy's CLEAN Program CERCLA Process Environmental Restoration Support for the Armed Forces Experiment Training Activity (AFETA) Camp Peary in Williamsburg, Virginia. Consulted on preparing a Quality Assurance Project Plan and a Remedial Investigation (RI) Project Plan for investigating potential PCB transport from Camp Peary to the Waller Mill Reservoir, which is the primary water supply for the City of Williamsburg. Directed HSPF watershed modeling and sediment transport modeling of the Waller Mill Reservoir was then conducted to estimate the possible transport and fate of PCBs. Recommended RI sampling locations in the reservoir based on modeling results.

Technical Consultant to Wet Weather Management Capital Designs, North Hudson Sewerage Authority, Hudson County, NJ; February 2009 to present. Technical consulting on wet weather management, permitting, design, hydraulic analyses, and state revolving funding for ongoing capital design projects. These projects include the River Road Diversion Project (diverting 1 mgd between WWTP service areas) and the H1 Screening and Wet Weather Pump Station (CSO solids/floatables controls and flooding relief).

Technical Consultant to the ALCOSAN CSO Plan, Pittsburgh, PA; October 2008 to present. Prepared sections of an existing conditions report for the Allegheny County Sanitary Authority's Thompson Run/Turtle Creek Planning Basin. Responsibilities included report preparation, editing, and quality control for documenting existing permitting, consent order, watershed development planning, and combined sewer overflow control planning to be used as an engineering resource for the preparation of a Wet Weather Plan.

Quality Manager on the Holly Pond Sedimentation Study and Improvement Design, Stamford, CT; August 2008 to present. As the quality manager, responsibilities include planning and reviewing all components of data compilation, field investigations, mathematical modeling, characterization, and alternative analyses for an engineering study of the Noroton River and Holly Pond for the Stamford Water Pollution Control Authority. Project goals are to develop watershed strategies for the Noroton River to control sediment entering Holly Pond while identifying and recommending sustainable sediment alternatives for removing sediment mounds in Holly Pond with beneficial uses.

Technical Consultant to the Trinity River Corridor Project, Dallas, TX; April 2008 to present. Provided senior guidance and review on mathematical modeling of existing conditions and the creation of recreational lakes in Dallas, Texas. Guided and reviewed the construction and calibration of a 3-dimensional model (WASP) for simulating municipal wastewater impacts on local lagoons. The effluent is planned to be used as source water for recreational lakes to be constructed in the Trinity River Corridor. The model was then used to simulate several planned lakes to determine if water quality conditions will support recreational and aesthetic uses. Also consulted on lake management plans and reviewed receiving water modeling for the Trinity River itself to assess impacts of the plans.

Project Manager of 2008 NPDES Renewals, North Hudson Sewerage Authority, Hudson County, NJ; December 2007 – January 2008, November 2008 - present. Directed the Authority's 2008 NPDES permit renewals for the Authority's 20-mgd Adams Street and 10-mgd River Road Wastewater Treatment Plants. The permit renewals were prepared in a short timeframe to minimize costs and submitted early to the New Jersey Department of Environmental Protection. Additional work is now being conducted to respond to permit writer inquiries for follow-up data requests, and then reviewing and commenting on draft

permits as they are issued.

Technical Consultant on Site Characterization, Confidential Client, New Jersey; November 2007 to present. Consulting on water quality issues to a project team investigating environmental conditions for a site remediation that is adjacent to wetlands and navigable waters. Responsibilities include reviewing and commenting on technical documents describing monitoring and sediment transport modeling.

Technical Consultant to WTM I Company (f/k/a Wisconsin Tissue Mills, Inc.); March 2007 to present. This client is a potentially responsible party on the Lower Fox River and Green Bay CERCLA/NRDA sediment PCB site in Wisconsin. Reviewed and prepared comments on federal, state, and other agency's technical documents and has supported WTM I during negotiations with regulators. Also reviewed and prepared comments on other potentially responsible parties' technical documents related to allocation of costs between the parties. Providing guidance on modeling strategies to identify reasonable allocations of liability.

Project and Design Manager on the Redesign of W1234 CSO Solids/Floatables Facility, North Hudson Sewerage Authority (NHSA), Hudson County, NJ; January 2006 to present. Managed the redesign of a screening facility for combined sewer overflows. The redesign was necessary to relocate the facility for revised developer site plans and to update the solids/floatables screening technology to optimize performance. Coordinated relocation of the facility with the site developer and its architects and engineers while maximizing use of existing conveyance. Added design features to optimize hydraulics under high flows and pressurized conditions. Directed submission of permits such as Treatment Works Approval and Waterfront Development. Recently performed comprehensive hydraulic analysis for resubmitting permits.

Technical Consultant and Task Manager on the Massport Deicer/Water Quality Impacts Study at Logan International Airport, Boston, MA; March 2008 to March 2009. Directed and performed engineering/modeling to assess water quality impacts of aircraft deicer use at Logan International Airport. Directed the compilation of relative water quality data and model selection. Directed and conducted mixing/dilution modeling to identify mixing zones and assess dissolved oxygen impacts of deicer fluids discharged to Boston Harbor during deicing events.

Project Manager of the North Hudson 2008 SRF Submittals, North Hudson Sewerage Authority, Hudson County, NJ; January 2008 to May 2009. Directed the Authority's submissions to secure low-interest loans from the New Jersey State Revolving Loan Fund to implement several capital projects. Three separate submissions were made in phases starting with loan applications and daft design document, followed later by final designs and specifications, and requesting authorization to bid the capital projects. The projects included wood sewer rehabilitation (previously designed by the project team) and construction of wet weather pump stations to alleviate street flooding. All submissions are on time and accomplished under budget.

Technical Consultant on Water Quality and Total Maximum Daily Loads, Seminole County Yankee Lake Consumptive Use Permit Application, Sanford, FL; March to December 2008. Consulting on hydrologic, hydraulic and water quality issues for an application to withdraw water from the middle basin of the St. Johns River in Florida. Responsibilities include reviewing and commenting on technical documents, directing hydrodynamic and water quality data analysis and modeling, evaluating effects on downstream TMDLs, evaluating withdrawal

water quality, and providing expert witness in an administrative hearing.

Task Manager, Technical Consultant, and Deputy Program Manager for General Conveyance Services; North Hudson Sewerage Authority; Hudson County, NJ; April 2005 to January 2009. Technical consulting and task management on wet weather, water quality, regulatory, design, state revolving funding, and regional planning issues to the Authority. Represented the Authority to the New Jersey Harbor Dischargers Group and liaisons to other regional planning efforts including Harbor Estuary Program TMDL efforts for nutrients and pathogens. Consulted to the Authority concerning permitting issues such as for toxics, nutrients, and long-term planning of combined sewer overflow controls. Also consulted to the Authority on other issues such as capacity assurance, collection system hydraulics, wet weather management, and optimizing solids/floatables controls.

Technical Consultant on Value Engineering Review of Flushing Bay LTCP, New York City Department of Management and Budget, New York, NY; November-December 2007. Compiled information on the design, construction and performance of inflatable dams used for controlling combined sewer overflows in several cities throughout the United States. Compiled information from the few manufacturers of dams used in this application as well as in other water resource applications. Identified that manufacturing and support for this technology will shortly cease and may not be viable for CSO applications. Prepared findings for submittal to the NYCOMB on their value engineering review of the New York City Department of Environmental Protection's Flushing Bay Long-term Control Plan.

Project and Design Manager for Collection System and Wastewater Treatment Plant Capital Designs, North Hudson Sewerage Authority (NHSA), Hudson County, NJ; December 2005 to present. Managing capital improvements design projects for the NHSA's collection system, two wastewater treatment plants, and inline solids/floatables controls for combined sewer overflows. With a design budget of over $900,000, managing both project delivery and design of capital improvements with an initial estimated capital cost exceeding $30 million. Collection system designs include cleaning, inspection and rehabilitation, pump station improvements, and inline solids/floatables controls. Wastewater treatment designs include improvements to liquid treatment processes, general facilities, odor control, residuals handling, and a replacement of chlorine disinfection with ultraviolet radiation without interrupting treatment operations. Also coordinated designs with state revolving fund submittal requirements to assure low-interest financing of the projects.

Technical Advisor for Wastewater Permitting, Northwest Bergen County Utilities Authority, Waldwick, NJ; June 2005 to July 2008. Responsibilities include general consulting on water quality and regulatory issues. Consulted on establishing an appropriate copper limit for the Authority's NJPDES permit by providing guidance on negotiating with regulators and developing a work plan for conducting a streamlined WER study for copper. Commented on New Jersey's changes to its water quality standards on behalf of the Authority in 2005.

Technical Consultant on Machado Lake TMDL, City of Los Angeles Watershed Protection Division, Los Angeles, CA; September 2007 to May 2008. Consulting on sampling, sediment flux calculations, modeling, and other water quality issues related to developing a TMDL for an urban freshwater lake in the City of Los Angeles.

Technical Consultant to CSO Control Program Phase II – Facilities Plan Update, Narragansett Bay Commission, Providence, RI; March 2007 to July 2007. Technical consultant and senior reviewer to the project team for a variety of modeling and planning tasks including hydraulic

model update, alternatives identification, additional model development, and alternative evaluations.

Technical Consultant and Task Manager for CSO Planning, Greater New Haven Water Pollution Control Authority, New Haven, CT; January 2007 to May 2008. Technical consultant for the preliminary design of the Authority's short- and long-term CSO control plan. Directed and reviewed modeling and planning efforts to select alternatives that will maximize wet weather flow to the Authority's wastewater treatment facility. Directed a short-term flow monitoring program and model-verification effort to update the Authority's collection system model to simulate implemented elements of its CSO control plans. Consulted on additional modeling effort to measure progress and optimize the LTCP.

Modeling Task Manager; Proposed Interbasin Transfer from the Catawba River to the Rocky River Subbasin; Mooresville, NC, August 2006 to February 2008. Directing mathematical modeling of receiving waters to identify and evaluate water quality impacts of wastewater discharges associated with an interbasin transfer. Directed the reconstruction and calibration of a two-dimensional model of an oligotrophic reservoir (Lake Norman in the Catawba River Basin) to identify and assess the impacts of several discharge alternatives on ambient water quality and compliance with water quality standards. Technical documentation received no comments from state regulators and desired speculative effluent limits were approved.

Technical Consultant on Near- and Far-Field Impact Analyses, Southern Seas Desalination Plant, Perth, Australia; December 2007. Reviewed and commented on technical documents describing monitoring and mathematical modeling of potential brine discharge impacts on coastal waters. Coastal monitoring data were reviewed and recommendations were made to collect sufficient data to support modeling and analysis efforts. Mathematical modeling of near-field impacts using Visual PLUMES and far-field impacts using three-dimensional hydrodynamic models was critiqued with recommendations for future efforts.

Technical Consultant on Sediment Transport Modeling, Confidential Client, Wisconsin; December 2007. Reviewed and prepared comments on technical documents describing sediment transport modeling for a site remediation in Wisconsin.

Technical Consultant on Site Characterization, Confidential Client, Virginia; October 2007. Consulted on water quality issues to a project team that investigated environmental conditions for a site remediation in Virginia that is adjacent to a navigable waterbody. He directed evaluations of receiving water impacts of contaminants that may be leaching from groundwater into adjacent tidal receiving waters. This included calculating subsurface contaminant migration on spatial and temporal water quality and aquatic life in the adjacent waterbody.

Technical Consultant to North Brunswick Water Treatment Plant Upgrade, Township of North Brunswick, NJ; August to September 2007. State revolving funding to provide low-interest financing of the $18 Million project was in jeopardy. Developed strategies to overcome roadblocks and through established contacts with state personnel that secured the funding.

NPDES Permit Renewal for Confidential Client in New Jersey; December 2006 to March 2007. Directed the application process for submitting NPDES permit renewals for a confidential industrial client in New Jersey. On behalf of the client, was the principal liaison with the NJDEP while directing sample collection and analysis, interpretation, and application preparation/submittal for a consolidated cooling-water/stormwater permit. In a very tight schedule, worked with regulators to develop and execute a work plan and submit the

application on time within 45 days, assuring compliance and continued operation of the industrial site.

Technical Consultant to the Revision of Draft Environmental Impact Statement, Cities of Concord and Kannapolis, Proposed Interbasin Transfer from the Catawba River to the Rocky River Subbasin; Mooresville, NC, November 2006 to July 2007. Reviewed and commented on modeling documentation evaluating potential impacts on the Catawba River Basin of the proposed interbasin transfer (IBT) of water by the Cities of Concord and Kannapolis from the Catawba River and Yadkin River Basins to the Rocky River Basin. Reviewed and commented on CHEOPS modeling and other findings for projected power station affects on water quality in Catawba Basin reservoirs.

Technical Consultant and Task Manager; Drinking Water Dependability Study for a Municipal Client in the Northeast; June 2006 to June 2007. Served as a senior consultant and task manager to a study evaluating alternative drinking water sources and treatment for a major metropolitan area serving millions of consumers. Managed several tasks for sampling and characterizing source waters, recommending finished water quality goals, and evaluating the feasibility and costs of water treatment technologies including reverse osmosis.

Principal Modeler; Outfall Design for Confidential Client in New York; June-July, 2006. Conducted effluent dilution modeling to evaluate a recommended outfall design for a cooling water and stormwater discharge to a river. Conducted mixing zone modeling that simulated a submerged, multi-port diffuser design using the CORMIX modeling system. Low, average, and high discharge flow conditions were simulated at estimated low- and average-flow conditions in the receiving water. Calculated effluent plume characteristics of dilution, both spatial and temporal, were used to recommend a final diffuser design that maximizes conveyance at minimum cost while achieving compliance with water quality standards.

Contributing Author; Guide to Managing Wet Weather Flows in Municipal Wastewater Systems; Water Environment Federation (WEF); Alexandria, VA; May 2005 to June 2006. WEF, under a Water Quality Cooperative Agreement with the U.S. Environmental Protection Agency, published a guide focused on effective practices for managing peak wet weather flows at municipal wastewater treatment facilities. The guide documents the state-of-knowledge with respect to wastewater conveyance and treatment system planning, design, construction, and operation for peak wet weather flows. Responsibilities included synthesizing best-practices survey results, writing, coordinating authors, draft document management, and final edits.

Technical Contributor; Pond Creek Capacity Alternatives Analysis; Louisville and Jefferson County Metropolitan Sewer District (MSD); Louisville, KY; May to August 2005. Provided technical guidance, review, and analyses of alternatives to eliminate sanitary sewer overflows (SSOs) in the MSD's West County Wastewater Treatment Plant service area. Reviewed and evaluated the costs and benefits of inline and offline storage and sidestream treatment alternatives during wet weather. Drafted a report describing wet weather flow characterizations, conceptual layouts, benefits and costs of alternatives, and a recommended combination of cost-effective alternatives that eliminates SSOs and assures compliance with NPDES permits.

Technical Advisor; Portsmouth Firm Yield and Water Supply Master Plan Study; City of Portsmouth; Portsmouth, VA; April to May 2005. The City of Portsmouth conducted a Water Supply Master Plan Study that includes evaluations of the safe yield of the City's reservoirs, water quality and treatment issues, and system-operating rules, and developing a water supply

plan. Mr. McMillin was involved in the development of a spreadsheet model that used hydrology calculations from a river safe yield model to simulate the mixing and transport of conservative substances relative to drinking water through the reservoir system. Reviewed and advised the development of the spreadsheet water quality model that included analyses of water quality substances by source (surface runoff, in-lake, well, etc), calibration to existing data, and calculating lake concentrations for system-wide planning purposes.

Contributing Author; Use Attainability Analyses Guidance; National Association of Clean Water Agencies (NACWA) and the Water Environment Research Foundation (WERF); Washington, DC; March 2005 to September 2005. Contributing author of a guidance document being published by the NACWA (formerly the Association of Metropolitan Sewerage Agencies - AMSA) and WERF. The guidance is intended to be a practical Use Attainability Analysis (UAA) roadmap for stakeholders who are trying to determine whether a UAA is the right tool to ensure that beneficial uses to be protected are appropriate. Contributed experiences on applying the watershed approach, addressing wet weather issues in modified urban environments, mathematical modeling, and stakeholder involvement.

Planning Director, Long-Term Control Plan Project, New York City Department of Environmental Protection. Directed long-term control planning for waterbodies in New York Harbor that have combined sewer overflows. Guided multiple waterbody-watershed assessments that involved physical, chemical, and biological field investigations, mathematical modeling, engineering analyses, planning, and water quality standards reviews. This was a multi-million dollar project for the City of New York developing long-term CSO control plans and identifying the highest reasonably attainable uses and appropriate water quality standards once plans are implemented.

Project Manager, Water Quality Task Order Contract, New York City Department of Environmental Protection. This $1.65 million task order project provided technical, engineering, and planning assistance to the City of New York on an as-needed basis. Responsibilities included overall project management, principal client point of contact and coordination, and task order development. Also managed and/or conducted tasks that address water quality, regulatory, regional planning, permitting, and other issues. Personally conducted and directed numerous tasks including: New York City CSO Consent Order negotiations, global warming/sea level rise infrastructure threat analysis, emergency forecast of water quality impacts of 2003 Blackout, review and comment on NY/NJ HEP and LISS Comprehensive Conservation Management Plan tracking reports, comment on New York State WI/PWL & TMDL lists, review and comment on Review of New York City 2002 Federal Legislative Agenda, preparing presentations for Commissioner presentations and legislative testimony, and water quality assessment for NYC Triathlon.

Project Manager, City-Wide Total Residual Chlorine Management Program, New York City Department of Environmental Protection. This $200,000 subcontract supported the preparation a Total Residual Chlorine (TRC) Management Program to facilitate disinfection at the City's 14 water pollution control plants (WPCPs) and targeted CSOs while meeting water quality criteria for chlorine toxicity and coliform. Initiated project control and directed efforts including making recommendations for stormwater sampling program supporting NY/NJ HEP TMDL work, and a review of previous mixing zone analyses performed to develop total residual chlorine limits for each of the City's WPCPs.

Project Manager, Use and Standards Attainment Project, New York City Department of

Environmental Protection. This $15 million project provided the technical, scientific and economic bases to support regulatory processes needed to tailor water quality standards to the highest reasonably-attainable use and to allow water quality standards to be attained upon implementation of recommended projects for New York Harbor waters. Responsibilities included directing waterbody-watershed assessments, facility planning, use attainability analyses, physical, chemical and biological field investigations, data management, project and budget management, coordinating $5 million of subcontractor activities, coordinating peer reviews, directing public opinion surveys, and managing overall public outreach including managing a project internet web site and interacting with stakeholders, regulators, and citizen representatives. Personally directed long-term control planning for three CSO waterbodies and drafted a use attainability analysis for one of them.

Project Manager, Combined Sewer Overflow Study, Passaic Valley Sewerage Commissioners, NJ. Managed this $430,000 subcontract to construct and calibrate a mathematical model of an interceptor sewer system serving separated and combined sewer drainage areas of a major municipal sewerage authority in New Jersey - the Passaic Valley Sewerage Commissioners. The project fulfilled the authority's permit requirement to characterize its combined sewer system for long-term control planning. Liaison with state regulators for conducting aspects of the project. Directed construction of the model using third-party software called Visual Hydro (XP-SWMM), which is similar to the EPA Storm Water Management Model (SWMM). It was calibrated and validated to data collected throughout the interceptor system. The model was then used to perform projections of sewer capacity under high flow conditions and for evaluating alternatives such as maximizing flow to the treatment facility. Once developed, the model was transferred to the sewerage authority for planning and design purposes.

Project Manager, Jamaica Bay Residual Chlorine Study, New York City Department of Environmental Protection: Managed a subcontract to an evaluation of the impacts of chlorine disinfection of combined sewer overflows (CSO). Provided guidance on field investigations, reviewed data, and determined second-order decay rates of total residual chlorine (TRC) in saline receiving waters. The decay rates were then applied to time-variable water quality models to determine concentrations of TRC in receiving waters discharged by disinfected CSOs under his guidance. Conducted assessments of TRC concentrations in receiving waters with regard to state and federal criteria vs. attaining recreation uses consistent with the Clean Water Act. Made recommendations for levels of disinfection, mixing zones, and regulatory approaches.

Project Manager, Comprehensive City-Wide Floatables Control Abatement Plan, New York City Department of Environmental Protection. Managed a multi-million dollar project to evaluate combined sewer overflow floatables and settleable solids abatement technologies and develop comprehensive plans to meet regulatory requirements. Responsibilities included project and budget management, evaluating abatement technologies, coordinating subcontractor activities, and interacting with regulatory and citizen representatives.

Project Manager, Paerdegat Basin CSO Facility Planning Project - Alternative Evaluation, New York City Department of Environmental Protection: Managed a re-evaluation of abatement alternatives of a previously conducted CSO Facility Planning Project. Utilizing previously constructed pollutant load, hydrodynamic and CSO water quality models that were used for conducting water quality assessments of Paerdegat Basin, evaluated additional

alternatives including in-line and off-line storage, high rate physical/chemical treatment, instream and sidestream aeration. The evaluation involved updating original models with state-of-the-art modeling capabilities including model calculations of oxygen transfer efficiency for simulating instream aeration diffusers.

Project Manager, 26th Ward Tributaries CSO Facility Planning Project - Value Engineering, New York City Department of Environmental Protection. Project Manager of continuing evaluations of abatement alternatives for combined sewer overflows to Fresh and Hendrix Creeks. Utilized state-of-the-art hydrodynamic and CSO water quality impact models for conducting receiving water projections to assess the impacts and potential benefits of constructing a CSO storage facility to meet dissolved oxygen and coliform bacteria water quality standards. Conducted a Monte-Carlo analysis to provide confidence levels of projection parameters and he also assessed temperature effects for long-term evaluations.

Project Manager, Cleveland Floatables Control Study, Northeast Ohio Regional Sewer District. Project Manager on a study evaluating and designing CSO floatables abatement technologies and developing comprehensive plans to meet regulatory requirements for the City of Cleveland, OH. Compiled information and evaluated a full range of abatement technologies including skimmer vessels, netting, booming, etc. to minimize the impacts of floatables on the Cuyahoga River and Lake Erie. Site-specific applications were then recommended for implementation.

Hudson River Mixing Zone Analysis, U.S. Generating Co.: Managed a study performing a mixing zone analysis for a proposed generating facility discharge to the Hudson River and determining compliance with water quality standards. The study involved compiling water quality and proposed discharge design information, constructing a mixing zone model, determining a mixing zone for a variety of average and critical conditions, interacting with regulators, and calculating dilution factors for regulatory agency permit submissions.

Paulins Kill Phase I Preliminary Sampling Program, Sussex County Municipal Utilities Authority. Managed a preliminary sampling program for assessing water quality conditions of the Paulins Kill in northwest New Jersey for an application to construct a wastewater treatment facility. Developed and executed a sampling work plan including QA/QC guidelines while interacting with state regulatory officials.

Coney Island WPCP Re-Rating, New York City Department of Environmental Protection. Using an existing steady-state model of New York Harbor, conducted a unit response analysis of existing and future discharges to the harbor for the Coney Island Water Pollution Control Plant for a re-rating of design flow. Subsequently developed spreadsheets for evaluating water quality impacts of various loading scenarios on specific waterbodies in the harbor.

1996 Summer Olympic Games, Norwegian Meteorological Institute. Participated in project that provided daily hydrodynamic information for the 1996 Summer Olympic Games in Atlanta, Georgia. HydroQual worked together with the Norwegian Meteorological Institute located in Oslo, Norway by providing surface wind, surface current, and water level forecasting services for the Savannah, GA sailing event area. Constructed and continually updated an Internet project site for providing daily information to all participants in yachting events at the Olympic Games.

Project Engineer, Jamaica Tributary CSO Facilities Planning Project, New York City Department of Environmental Protection. Project Engineer of a study of Bergen and Thurston

Basins that evaluated the water quality impacts of combined sewer overflows. Responsibilities included the construction and calibration of a state-of-the-art mathematical water quality model for dissolved oxygen and coliform bacteria. Conducted water quality projections that evaluated various CSO abatement alternatives including storage and in-stream aeration. Directed laboratory evaluations of chemical oxidation as a method to eliminate high sediment oxygen demand.

Project Manager, City-Wide Floatables Study, Contract II, New York City Department of Environmental Protection. Managed a multi-million dollar project evaluating the effectiveness of best management practices including street and catch basin cleaning, and pilot testing an interim end-of-pipe floatables control program based on booming outfalls and collecting floatables with a skimmer vessel. Responsibilities included overall project and budget management, coordinating field investigations, and pilot testing technologies. Initially identified locations for piloting floatables containment boom systems, prepared CAD design drawings, and assisted in developing and submitting permit applications. Oversaw final design, and conducted construction management of four end-of-pipe floatables containment systems and one vessel off-loading system. Contributed to the selection and procurement of two skimmer vessels. Subsequently managed the daily operation of a pilot floatables booming and skimming program for one-and-a-half years that required coordinating boom maintenance, skimmer vessel operation and maintenance, and solid waste disposal. Tracked and evaluated costs and program performance.

Project Engineer, Jamaica Bay CSO Facility Planning Project, Contract II, New York City Department of Environmental Protection: State-of-the-art eutrophication study of Jamaica Bay. Developed portions of a field sampling work plan including site selection, QA/QC, methods and protocols. Directed portions of the implementation of field monitoring activities and data collection programs for the calibration of an advanced eutrophication water quality model. Initiated project control, budget tracking and reporting.

Participant, CSO Minimum Control Technologies, U.S. Environmental Protection Agency. Participated in a project that developed the EPA's Guidance on Nine Minimum Controls for combined sewer overflows. Responsible for contacting state agencies nationwide and compiling CSO strategies, as well as writing portions of and editing the guidance. Presented a CSO abatement case study at two EPA CSO Control Policy seminars for municipal managers nationwide.

Project Engineer, City-Wide Floatables Study, New York City Department of Environmental Protection: Project Engineer in a multi-million dollar City-Wide Floatables Study completed for the City of New York. The project was a comprehensive study to develop an understanding of the sources, transport and impacts of floatable materials in the New York Harbor complex. Responsibilities included supervising all field activities and data collection programs, directing data reduction and analysis, monitoring and maintaining project control, and report writing.

Impacts of Deicing Fluids on Flushing Bay and Jamaica Bay Water Quality, Port Authority of New York and New Jersey. In a project determining water quality impacts of aircraft deicer use at New York City airports, compiled deicer-use information from airport operations and developed pollutant loadings to receiving waters. Applied these loads to a time-variable model developed for Flushing Bay and a previously developed time-variable model of Jamaica Bay to determine dissolved oxygen impacts of deicer discharged to the bays during wet weather events by La Guardia Airport and John F. Kennedy International Airport, respectively.

Musconetcong River Dissolved Oxygen Impact Analysis, Hackettstown Municipal Utilities Authority. Managed and executed an evaluation of potential impacts of an upgrade of the Hackettstown Wastewater Treatment Plant. Developed a NJDEP-approved sampling plan of the Musconetcong River in western New Jersey. Coordinated and conducted diurnal dissolved oxygen, water quality and sediment sampling, river profiling and a dye study. Using the data collected, developed a diurnal dissolved oxygen model of the Musconetcong River. The model was calibrated to field sampling results and used to project proposed discharge conditions and water quality responses.

Solid Waste Management Plan Generic EIS, New York City Department of Sanitation. Developed atmospheric deposition loading rates of proposed incinerator scenarios for the New York City Department of Sanitation. Using an existing steady-state model of New York Harbor, simulated the impacts of increased metals deposition on the harbor complex for an Environmental Impact Statement.

Participant, Long Island Sound Study, U.S. Environmental Protection Agency. Participated in a project studying the hydrodynamics and water quality of Long Island Sound. Provided guidance for creating spreadsheets based on model results for evaluating the effects of various remediation scenarios to be used for regional Total Maximum Daily Load planning purposes.

Evaluation of Existing Department Facilities, New York City Department of Sanitation. Conducted inspections of solid waste marine transfer stations operated by the New York City Department of Sanitation. Inspections included reviewing as-built drawings and identifying and inspecting station and street stormwater drains, lines, manholes, and outfalls for permit applications.

Project Engineer, Coney Island Creek CSO Facility Planning Project, New York City Department of Environmental Protection. Project Engineer in a study of Coney Island Creek for evaluating the water quality impacts of combined sewer overflows. Responsibilities included coordinating field investigations, evaluating data, and constructing and calibrating a time-variable water quality model. To address site-specific conditions, developed of local relationship between meteorological conditions and phytoplankton populations to model eutrophic conditions observed in Coney Island Creek. The model was used to identify sources of use impairments and evaluate engineering alternatives to abate CSOs.

Paerdegat Basin Model Technology Transfer, New York City Department of Environmental Protection. Conducted a technology transfer of previously constructed hydrodynamic and water quality impact models of Paerdegat Basin. The models were originally constructed and compiled on mainframe UNIX computer platforms. Modified and compiled the models to run on personal computers. Developed graphical display software for viewing model results. Developed model and display package documentation and conducted a technology transfer seminar.

Wards Island WPCP Environmental Impact Statement, New York City Department of Environmental Protection. Using an existing steady-state model of New York Harbor, conducted a unit response analysis of water pollution control plant discharges to the Harbor. Subsequently developed spreadsheets for evaluating water quality impacts of various loading scenarios on specific waterbodies in the harbor.

Inner Harbor CSO Facility Plan, New York City Department of Environmental Protection. Utilizing the EPA SWMM model, constructed a model simulating portions of the sewer systems

of the boroughs of Brooklyn, Queens and Manhattan. The models were used to generate loadings for a receiving water model of the Inner Harbor of New York City that was used to evaluate CSO impacts and conduct facility planning.

Chemung River Wasteload Allocation, Chemung County Sewer District. Conducted a 7Q10 flow analysis of the Chemung River in New York for a wasteload allocation analysis.

Chesapeake Bay Eutrophication Study, U.S. Environmental Protection Agency. Participated in a project studying the hydrodynamics and water quality of Chesapeake Bay. Responsibilities included compiling current meter, temperature and salinity data from throughout the bay area, preparing model inputs, operating a state-of-the-art three-dimensional circulation and water quality model of Chesapeake Bay, and assessing model results.

Publications and Presentations

"Are You Getting What You Wanted? Updating and Optimizing Your LTCP," W. McMillin, A. Parolari. Presented at Collection Systems 2008, a Water Environment Federation Specialty Conference, Pittsburgh, PA, May 2008.

"Managing Peak Wet Weather Flows in Municipal Wastewater Collection and Treatment Systems," W. McMillin, R. Rowe, N. Wheatley, N. Schultz, G. Gardner and T. Sigmund. Presented at the New York Water Environment Association Annual Meeting, New York, NY, February 2008.

Speaker at the Water Environment Federation's "Nutrient TMDL Development Workshop" on TMDL implementation monitoring plans, sponsored by the WEF Nutrient TMDL Development Task Force under a Cooperative Agreement with the U.S. Environmental Protection Agency, Alexandria, VA, September 2007.

"On the Waterfront: Innovative Technologies Support a Revitalizing Urban Environment," Published in Urban Water Management, a special supplement to WaterWorld magazine, July 2007.

"Collaborative Water Quality Solutions: Exploring Use Attainability Analyses," W. McMillin, T. Dupuis, M. Stewart, and A. Dunn. Presented at TMDL 2007, a Water Environment Federation Specialty Conference, Bellevue, WA, June 2007.

"WEF Guide to Managing Peak Wet Weather Flows in Municipal Wastewater Collection and Treatment Systems," N. Schultz, R. Rowe, T. Sigmund, G. Garner, W. McMillin, R. Fordiani, R. Nelson and N. Wheatley. Presented at the annual Central States Water Environment Association meeting, May 2007.

"WEF Guide to Managing Peak Wet Weather Flows in Municipal Wastewater Collection and Treatment Systems," T. Sigmund, G. Garner, N. Schultz, R. Rowe, W. McMillin and N. Wheatley. Presented at the annual Missouri Water Environment Association meeting, March 2007.

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"Implementing Waterbody/Watershed Plans and Facilitating Water Quality Standards Reviews for Urbanized Waterbodies," W. McMillin, J. St. John, Warren Kurtz, and J. Mueller. Presented at TMDL 2005, a Water Environment Federation Specialty Conference, June 2005.

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"Developing a Use Attainability Analysis for an Urbanized Waterbody," W. McMillin, J. St. John, W. Kurtz, and J. Mueller. Presented at the New York Water Environment Association Annual Meeting, February 2004.

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"Case Study - Paerdegat Basin," W. McMillin, Presented to a New Jersey CSO Long-Term Control Plan Workgroup Meeting hosted by the New Jersey Department of Environmental Protection, October 2001.

"Integrated Methods to Assess Compliance with Designated Uses and Water Quality Standards," W. McMillin, J. St. John, G. Piehler, and W. Kurtz. Presented at World Water & Environmental Resource Congress sponsored by the Environmental and Water Resources Institute of the American Society of Civil Engineers, May 2001.

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"New York City's Urban Watershed Use and Standards Attainment Project," W. McMillin, J. St. John, R. Gaffoglio, and W. Kurtz. Presented at the Water Environment Federation Specialty Conference: Watershed 2000, July 2000. Peer-reviewed paper published in Conference Proceedings.

"A Simplified Approach for Simulating Rainfall-Runoff, Projecting Pollutant Loads and Analyzing Treatment Performance," W. McMillin and T. Omer. Presented at the International Conference on Stormwater and Urban Water Systems Modeling, February 2000.

"Comprehensive Planning for Control of CSO Floatables and Settleable Solids in New York City," W. McMillin, W. Leo, L. Kloman, W. Kurtz, and R. Gaffoglio. Presented at the New York Water Environment Association Annual Meeting, February 1999.

"CSO Controls and Supplemental Aeration for Paerdegat Basin," T. Peterson, R. Smith, R. Gaffoglio, L. Kloman, W. Leo, and W. McMillin. Presented at the Water Environment Federation Specialty Conference: Advances in Urban Wet Weather Pollution Reduction, Summer 1998.

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"Sources and Impacts of Floatable Materials in New York-New Jersey Harbor," J. St. John, W. Leo, W. McMillin, and R. Gaffoglio. Presented at the Annual Water Environment Federation Conference, 1991.

"Status of CSO Facilities Planning Projects and City-Wide Floatables Study," R. Gaffoglio, J. St. John, W. Leo, and W. McMillin. Presented at the New York Water Pollution Control Association Winter Meeting, February 1991.

"Mass Balance Techniques for Improving Efficiencies of High Purity Water Ion Exchange Units," S. McGroddy, W. McMillin, J. Mueller, and A. Winka. Presented at the New York Water Pollution Control Association Winter Meeting, February 1987.

Professional History

2005 to present: CH2M HILL, Senior Technologist
1988 to 2005: HydroQual, Inc., last position Associate
1986 to 1988: Manhattan College, Research Assistant at IBM Thomas J. Watson Research Center

Professional Memberships

American Society of Civil Engineers, Climate Change Task Committee member
Water Environment Federation, Watershed Management Committee member
New Jersey Water Environment Association
New York Water Environment Association, Government Affairs Committee member
New Jersey Section of the American Water Resources Association
Chi Epsilon
Sigma Xi

Appointments & Honors

Appointed Member of the U.S. Environmental Protection Agency's Environment Technology Valuation (ETV) Technology Panel for Wet Weather Modeling

"Kenneth Allen Memorial Award" for presentation of "Mass balance Techniques for Improving Efficiencies of High Purity Water Ion Exchange Units," given at the New York Water Pollution Control Association's 1987 Winter Meeting, February 1987.