ROBERT E. DUFRESNE, PE

PRESIDENT

Education:

Bachelor of Science Degree in Civil Engineering *summa cum laude*, Norwich University, Northfield, Vermont

Master of Science Degree in Civil and Environmental Engineering, University of Wisconsin.

Professional Registrations

Registered Professional Engineer in Vermont, Massachusetts, New Hampshire, Rhode Island, and Wisconsin.

Affiliations and Certifications

Engineering Liaison Committee with funding officials from Rural Development, Community Development Block Grant, and State of Vermont (Past Chairman)
American Consulting Engineers Council (ACEC) Past officer positions include: Secretary, Treasurer, Vice President and President
New England Water Works Association (NEWWA): Past positions include: State Director, Committee member for Executive, Planning, Filtration, and Scholarship
American Water Works Association (AWWA), Current Member

Publications and Awards:

The Occurrence of Salmonella in Soils after the Application of Wastewater Sludges, a master's thesis completed at the University of Wisconsin in 1976.

Piloting a Successful Test, a publication for Water Engineering in June 1991.

Supervisory Control and Data Acquisition (SCADA) Systems, Presentation speaker at the New England Water Works Association Computer Symposium Exhibition and Demonstration

Implementing a Successful System Development Charge System, a presentation in Nashua New Hampshire for the NH Planning Council.

Filtration, an operator's training session for the Vermont certification courses annually from 1996 to 1998.

Disinfection, an operator's training session for the Vermont certification courses annually from 1996 to 1998.

Publications and Awards (cont'd):

Jar testing, an operator's training session for the Vermont certification courses annually from 1996 to 1998.

Academic Medal, award to the freshman with the highest academic quality point average in 1972 at Norwich University.

- *Chi Epsilon,* member of the honorary civil engineering society.
- *Tau Beta Pi,* member of the honorary engineering society.
- *Student Engineer of the Year,* from Norwich University presented by Vermont Society of Engineers in 1975.

Employment History:

February 1, 1999 to present. Founded Dufresne & Associates, P.C. d/b/a Dufresne Group and in New Hampshire as D & A Engineers and currently serves as principal consultant and President.

Employed by Phelps Engineering, Inc. from March 1998 to February 1999, as Vice President.

Employed by Dufresne-Henry, Inc. from 1973 until March 1998, most recently as Senior Vice President.

Recent Professional Experience:

- Water Works Improvements, St. Johnsbury, VT - Served as Client and Project Manager for eight water works improvement projects including four 0.5 mg water storage tanks, a booster pump station, a booster chlorination station, four master metering vaults, about two miles of 14-inch cleaning and lining, about two miles of slip-lining, three pressure reducing stations, improvements to alum residual lagoons, and new treated water pumps.

- Water System Improvements, Claremont, NH – Served as the Client and Project Manager for water system improvements including new 4.0 mgd traveling bridge sand/anthracite filters, 4.0 mgd granular activated carbon contactors, a 0.5 mg clearwell, a new constant pressure booster pump station, a conventional booster pump station, and about 2,500 feet of cleaning and lining of a 20-inch source transmission main, about 1,600 feet of new 16-inch source transmission main.

- Champlain Water District, South Burlington, VT – Served as the principal in charge and design reviewer for master planning and concept design for the Champlain Water District (CWD). Work included concept design for refurbishing four 300 hp vertical can turbine pumps for high and low pressure service.

Recent Professional Experience (cont'd):

- Vermont Master Plan and Final Design of Water System, Town of Bennington, VT – Served as the principal in charge and design reviewer for master planning document and final design for a multi-phase project including improvements to a water treatment facility, pumping facilities, and water storage tanks.

- Basis of Design Report, Hartford, VT – Project Manager for the evaluation of source of water supply facilities and preparation of the 1990 Basis of Design Report. The project included groundwater investigations, evaluation of alternative surface water sources of supply and economic and non-economic comparison of alternatives for developing water supply facilities.

- Water Rate Analysis: New England Locations - Conducted reviews for various water system rate structures and capital expenditure funding alternatives for system upgrades. Also secured funding from State and Federal agencies for over 100 New England communities.

- City of Claremont, NH – Project Engineer for a Basis of Design Report for a water system improvement project including an additional clearwell, filtration improvements, source control vault, SCADA system, and VFD pumps.

- Saint Johnsbury Center Fire District No. 1 – Project Engineer for a Basis of Design Report for improvements to the existing water system. Work included an Environmental Report suitable for RD Grant/Loan Assistance and/or DWSRLF Funding.

- Surface Water Treatment Facility, Montpelier, VT – Principal-in-Charge for design and construction management of a 4.0 MGD rapid sand filtration facility for surface water. Project included design of filtration, corrosion control, recycling capabilities, and complete SCADA control of remote facilities. Design included specialty 75 hp vertical turbine constant pressure variable speed drive pumps.

- Final Design of Water Treatment Facility Improvements, Brattleboro, VT – Served as the principal in charge and design reviewer for final design for a 700 gpm expansion to an existing 3.0 mgd water treatment facility. Project included use of freeze drying facilities for residuals dewatering.

- Ozone Pilot Investigations, Newmarket, NH - Served as the principal in charge and design reviewer for an ozonation system for a 1.0 mgd surface water treatment facility.

- Surface Water Treatment Facility, Barre, VT - Principal-in-Charge for design and construction management of a 6.0 MGD rapid sand filtration facility for surface water. Project included design of filtration, corrosion control, on-site freeze drying process residual handling system and process water recycling capabilities, and complete SCADA control of the facility and remote stations.

Recent Professional Experience (cont'd):

- Miscellaneous Water Treatment Facilities – Process and civil/site designer or Senior Engineer in Charge for numerous water treatment facilities including: Barre, Vermont and Montpelier, Vermont as described above and Woodsville, New Hampshire; New Market, New Hampshire; Island Pond, Vermont (North and South Plants); Waterbury, Vermont; Bellow Falls, Vermont; Bennington, Vermont, Royalton, Vermont; Fair Haven, Vermont; Stone Bridge, Rhode Island; Gardner, Massachusetts; and Westfield, Massachusetts.

- Wastewater Treatment System, Fair Haven, VT – Process and civil/site designer for the upgrade of a 1.0 MGD wastewater treatment facility with new headworks facilities, waste activated sludge pumping, aerobic digestion, a new chlorine contact tank, and controls and instrumentation systems.

- Water Treatment Residual Handling System, Kennebec, ME - Principal-in-charge for the evaluation and alternative selection for renovations to the newly constructed residual storage lagoons at the 12 MGD surface water treatment facility.

- Water System Improvements, Fair Haven, VT - Project manager for design and construction of a 0.75 million gallon per day water treatment facility, two 0.5 million-gallon concrete storage tanks, 17,000 feet of replacement 12- and 8-inch water main, hydrants, and services. Project included a 200-foot river crossing, three brook crossings, and a jacked railroad crossing.

- Corrosion Control System Basis of Design Report, Claremont, NH – Project Design Engineer for a Basis of Design Report for a corrosion control system. Evaluation of alternatives included phosphate coatings, soda ash, caustic soda, hydrated lime and carbon dioxide. A silo based hydrated lime system with carbon dioxide feed was selected for client based on costs and other non-economic criteria.

- On-Site Filter Media Pilot Study, City of Claremont, NH – Project Review Engineer for on-site filter media pilot studies comparing several media systems.

- Filter Renovations, City of Claremont, NH – Project Review Engineer for final design of filter renovations to existing traveling bridge filters. Series filtration through dual media sand/anthracite followed by 48-inches of GAC was recommended for client.

- Powder Activated Carbon Feed System, Burlington, VT – Project review Engineer for a powdered activated carbon feed system for an existing water treatment facility.

- Disinfection System Conversion, Bellows Falls, VT – Project Review Engineer for conversion of a chlorine gas feed system to sodium hypochlorite disinfection system

Recent Professional Experience (cont'd):

- Water Distribution System Improvements, Manchester, VT - Project manager and engineer for the design and construction of two 0.7 million gallon concrete storage tanks, 33,000 feet of replacement of 12-inch and 8-inch water main, hydrants, and services. Project included 100-foot river crossing, 2 brook crossings, and two jacked railroad crossings.

- Water Distribution System Improvements, Montpelier, VT - Project manager and engineer for the design and construction of a 1.3 million gallon concrete storage tank, 11,000 feet of replacement of 16-inch and 12-inch water main, hydrants, and services. Project included a brook crossing and 8,700 linear feet of curb and roadway reconstruction. Project included an 800 gpm duplex vertical can turbine booster pumping system.

- Water Distribution System Improvements, City of Barre, VT - Senior designer for replacement of 3,300 linear feet of 12-inch diameter water mains.

- East Cobble Hill Road Transmission Main, City of Barre, VT – Project Review Engineer for about 3,000 feet of 24-inch diameter ductile iron transmission main along East Cobble Hill Road and US Route 302.

- Water Storage Tank, City of Barre, VT – Project Review Engineer during the construction stage for a 1.0 mgd cast in place concrete water storage tank. Project included design of a full radio based SCADA system and source control valve.

- Water Distribution System, Saint Johnsbury Center Fire District No. 1, St. Johnsbury Center, VT – Project Engineer for Final Design preparation of plans and specifications for a water distribution system replacement project. Project included a pressure reducing and wholesale metering station, direction drilling for distribution main, used of electro fusion polyethylene fittings, and meters for all residential customers.

- Prepared water system models for the following communities: Durham/UNH System, Berlin, NH; Woodsville, NH; Montpelier, VT; Barre, VT; Springfield, VT; Brattleboro, VT; St Johnsbury, VT; Ludlow, VT; Manchester, VT; East Hampton, MA; Templeton, MA; Orange, MA; and Bellows Falls, VT

- Attended late night C-value and Fire Flow testing for Model Calibration in the following Communities: Durham/UNH System, Berlin, NH; Woodsville, NH; Montpelier, VT; Barre, VT; Springfield, VT; Brattleboro, VT; St Johnsbury, VT; Ludlow, VT; Manchester, VT; East Hampton, MA; Templeton, MA; Orange, MA; and Bellows Falls, VT