WILLIAM L. LORAH, P.E.
SENIOR CONSULTANT

CURRENT

Mr. Lorah has worked for Wright Water Engineers since 1966, is a principal and senior consultant, and has worked in the Glenwood Springs branch office since 1974. He specializes in water resource planning and development for a wide variety of clients throughout Colorado and other western states. He has also consulted on water resource projects in several foreign countries.

EDUCATION

M.S. Civil Engineering (Hydrology) 1966
Colorado State University

B.S. Civil Engineering (Hydraulics) 1962
University of Colorado

REGISTRATION

Licensed Professional Engineer - Colorado, New Mexico, Utah

REPRESENTATIVE PROJECTS

Water Resource Planning – Water rights and water resources analysis and development for industry (Exxon, Coors, ARCO), land developments, ranches, municipalities, and counties.

Water Augmentation Plans – Project engineer for numerous water augmentation plans for towns, developments, industries, and individuals.

Iran – Project Engineer for developing water supply alternatives for secondary oil recovery project in Khuzestan Province of Iran. Services included basin wide hydrologic study, facilities layout, and economic analysis.

Hydrologic Models – Developed extensive basin wide hydrologic models for the Kennecott Copper Company in Utah. Developed several spreadsheet models of small river basins in the Rocky Mountain area.

Expert Witness – Testified as an expert witness in over 100 court cases involving a wide range of water issues.

Geothermal Development – Project engineer on geothermal developments and/or evaluations at Glenwood Springs, Pagosa Springs, Ouray, and several other geothermal areas in Colorado. In addition, prepared geothermal analysis for ACOMA Indian Reservation.

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Ski Area Water Resources Development – Project engineer on water supply, water rights, development for several ski areas, including Adam's Rib (proposed), East Fork San Juan (proposed), Silver Creek, Snowmass, and others.

Special District Representative – Have assisted in the formation of special service districts including Battlement Mesa Metropolitan District.

Flood Studies – Hydrologist and hydraulic engineer for several 100-year floodplain studies for both urban (city of Boulder) and rural (Roaring Fork River) area.

Hydrology – Transit loss studies on reservoir releases on Arkansas River for the state of Colorado, and Colorado River for Exxon.

Environmental Hydrology – Documentation of baseline hydrology for proposed ski area (Adams Rib and East Fork San Juan) industries. Project engineer for environmental hydrologic studies on Wood River basin near Kerwin, Wyoming for two copper mines.

Mediator – Mediator in dispute between wastewater entities in Eagle County, Colorado. Mediator in dispute over division of water on Alkali Creek.

Adolph Coors Company – Evaluated numerous agricultural and industrial water rights for potential purchase. Also engineered and assisted in obtaining new water rights to meet the expanding needs of the industry.

West Elk Coal Company – Developed water resources mitigation plan to compensate for land subsidence due to coal mining operations. Mr. Lorah has worked for several coal companies on water supply/water rights problems, including ARCO, Westmoreland, Anschutz, and Snowmass coal companies.

Municipal – Provided technical evaluation and court testimony to transfer several agricultural water rights to municipal water systems. Technical negotiations with protesters were an important part of the project. Mr. Lorah has been prime engineer on water rights matters for numerous towns and municipalities.

Ditch Companies – Consulting engineer for several ditch companies, including the Salvation Ditch and the Red Mountain Ditch

OTHER EXPERIENCE

Fiji & Western Samoa – Special consultant to the U.S. Peace Corps (1980) analyzing the potential for small hydropower projects in Fiji and Western Samoa.

Pakistan – Peace Corps Volunteer. Rural public works engineer in Pakistan, planning, designing and building schools; drainage systems; roads; and other public works projects.

U.S. Geological Survey – Party Chief for topographic mapping crew in Montana.

Peru Paleohydrology – Performed field investigations for Machu Picchu archeological study of water supply, drainage, and agriculture.

PROFESSIONAL & HONORARY SOCIETIES

- Member American Society of Civil Engineers
- International Water Resources Association
- Past Chairman of Local Irrigation and Drainage Section, ASCE
- Past Assistant to Secretary of Local Colorado Section, ASCE
- Past Member of National Committee, ASCE
- Past President of Western Colorado Society of Architects, Planners, Engineers and Surveyors
- Past Director, Consulting Engineering Council of Colorado
- Past President, Valley View Hospital Board of Directors, Glenwood Springs, Colorado
- Past Chairman of Glenwood Springs River Commission

PUBLICATIONS

Lorah, W.L. 1969. Author of "Rainfall" and "Runoff" sections of the *Urban Storm Drainage Criteria Manual*, sponsored by the Denver Regional Council of Governments, March.

Lorah, W.L. and K.R. Wright. 1970. "Urban Storm Hydrograph Analysis in Denver Region," *Proc ASCE National Water Resources Engineering Meeting.* January.

Lorah, W.L. 1974. "Constraints on Water Development by the Appropriation Doctrine. " Paper presented to Arizona Section, American Water Resources Association and the Hydrology Section, Arizona Academy of Science. April.

Lorah, W.L. and K.R. Wright. 1979. "Food & Energy Production: Conjunctive Water Planning," *Proc III World Congress on Water Resources*. Mexico City. April 23-27th.

Lorah, W.L. 1982. "Small Hydropower Development in Fiji - Economic and Social Aspects." *Proc International Water Resources Council, IV World Congress on Water Resources.*, Buenos Aires, Argentina. September 5-10.

Lorah, W.L., and P.A. Lorah. 1990. "Pre-Columbian Water Supply in Peru." Paper presented to the American Water Works Association. June.

Wright, K.R., A.V. Zegarra, and W.L. Lorah. 1999. “Ancient Machu Picchu Drainage Engineering.” *Journal of Irrigation and Drainage Engineering, Vol. 125, No. 6*. November/December.