

**Neil M. Jordan, P.E., D.WRE**  
**Senior Engineer**

**Professional Profile**

Mr. Neil Jordan is a Senior Engineer in Exponent's Civil Engineering practice. Mr. Jordan is a registered civil engineer with 22 years of public agency and private practice flood control experience specializing in 1-D and 2-D hydrological and hydraulic analysis and modeling. Mr. Jordan's civil engineering experience includes hydraulic and structural design of urban flood control structures, Federal Emergency Management Agency (FEMA) floodplain studies, and National Pollution Discharge Elimination Program (stormwater quality and best management practices). Mr. Jordan's professional engineering career is preceded by 10 years of varied ionizing radiation protection and teaching experience as a civilian health physicist for the Department of the Navy (shore activities), and 2 years as a civilian health physicist and instructor at a Navy shipyard. His regulatory agency experience includes interactions with FEMA, the Environmental Protection Agency, the Army Corps of Engineers, the Nuclear Regulatory Commission, the Department of Energy, the Department of Defense, and various state and local agencies. Prior to joining Exponent, Mr. Jordan held several senior-level engineering positions for the Orange County Flood Control District.

**Academic Credentials and Professional Honors**

M.S., Radiation Biology and Biological Oceanography, Oregon State University, 1970  
B.S., Civil Engineering, California State University, Long Beach, 1985  
B.S., Zoology, Oregon State University, 1968

Diplomate, Water Resources Engineer, American Academy of Water Resources Engineers, 2007

Orange County Hydrology & Hydraulics Technical Group, ASCE  
Chi Epsilon, Vice President and President  
Tau Beta Pi

Navy Special Achievement Award, 1978  
Navy Special Service and Sustained Superior Performance Award, 1981  
Navy Unit Citation, for extremely meritorious service between 1976 and 1980; and Navy Meritorious Unit Citation, 1982

**Licenses and Certificates**

Registered Professional Civil Engineer, California, #44012  
Registered Professional Civil Engineer, Oregon, #14567  
Registered Disaster Service Worker, California, SA1570

## **Publications**

Shrestha PL, Hamilton DL, Cydzik K, Wardak S, Jordan N, Shaller PJ, Doroudian M. Flood hazard analysis and mitigation. Proceedings, International Conference on Water, Environment, Energy and Society (WEES-2009), pp. 699–706, New Delhi, India, January 12–16, 2009.

Shrestha PL, Hamilton D, Jordan N, Lyle JE, Doroudian M, Shaller PJ, Wardak S, Cydzik K, Medellin J. Inland flood hazard analysis and mitigation. Poster, ASCE-EWRI World Environmental and Water Resources Conference, Honolulu, HI, May 12–16, 2008.

Hromadka TV II, Whitley RJ, Jordan N. Multi-directional analogues of 2-D flow. JAIH 2007; 2(1–4), January 1.

Jordan N. USGS Diffusion Hydrodynamic model: Alluvial fan flood hazard mapping and dam failure emergency action plan preparation using 2-dimensional unsteady unconfined flow modeling. Floodplain Management Association Conference, September 11, 2003.

Jordan N. Diffusion Hydrodynamic model: Using DHM rainfall-runoff output to estimate urban watershed existing condition hydrology. J Floodplain Management 2000; 1(2).

Hromadka TV II, Yen CC, Nestlinger AJ, Jordan N. East Garden Grove-Wintersburg (C05) and Ocean View (C06) channel inundation study using the diffusion hydrodynamic model. Engineering Workshop on Stormwater Management, California State University-Long Beach, 1993.

Jordan N, Quast R. Report of radiological survey of the Heavy Cruiser Prinz Eugen (IX300), Kwajalein, Pacific trust territory, during the period 05-19 April 1974. Naval Nuclear Power Unit Report No. 144, June 21, 1974. In: Summary Report on Salvage Survey of Prinz Eugen, SUPSALV Report No. 6-74, by Battelle Columbus Laboratories, OH, June 1974.

Jordan N, Kimeldorf D. The visual response of the purple shore crab to ionizing and non-ionizing radiations. *Experientia* 1971; 27:653.

## **Technical Reports**

Jordan N, Gass J. Slater Avenue Pump Station. December 9, 2008.

Jordan N. Analysis of Bixby/Dixon Ponding Images. November 14, 2007.

Hamilton D, Jordan N. Analysis of damages to the Middle Fork and Farmers Irrigation Districts [OR] as a result of the November 2006 flood. January 24, 2007.

Jordan N. Review of U.S. Fish and Wildlife Service letter of October 24, 2006 re Bolsa Chica Restoration Pocket [quantification of flooding after levee abutment breach]. October 31, 2006.

Jordan N. Bolsa Chica 'Pocket': Flood and tidal protection for existing homes and Parkside Estates [prediction of flood inundation from levee breach]. September 21, 2006.

Jordan N. Summary response to coastal commission questions on flood control hydrology & hydraulics [prediction of flood inundation from levee breach]. March 24, 2006.

Jordan N. Frequency analysis of precipitation and ponding at Parkside Estates. February 22, 2006.

Jordan N. Correlational and frequency analysis of groundwater at Parkside Estates. February 22, 2006.

Hamilton D, Shaller P, Jordan N. Alluvial fan flooding study, Thousand Palms approved tract[s]... and adjacent watershed areas. February 6, 2006.

Jordan N. Shea Homes topographic and displacement analysis with FEMA UNET Model. May 18, 2005.

Jordan N. Seawall flood and tidal protection for existing residential areas and Parkside Estates [prediction of flood inundation from levee breach]. Technical Memorandum to California Coastal Commission, June 28, 2004.

Jordan N. Consolidated Report [to City of Huntington Beach, CA], FEMA submittals, detailed flood insurance study for Shea Homes Parkside Estates. August 10, 2002.

Hromadka II TV, Hamilton D, Jordan N. Shea Homes Parkside estates focused detailed flood insurance study in support of request for conditional letter of map revision. January 30, 2001.

Jordan N. For Orange County Flood Control District, numerous regional hydrology and hydraulics project reports, and flood control design plans and specifications for construction. 1985–2000.

### **Presentations and Published Abstracts**

Jordan N. Applying FEMA's alluvial fan theory to estimate flows between two points on a fan contour line. ASCE HHTG, February 1, 2007.

Jordan N. Interevent analysis. ASCE HHTG, April 24, 2003.

Jordan N. Testimony to Ventura County Board of Supervisors re environmental sample radioactivity near Santa Susana Field Laboratory, for City of Calabasas, CA, December 11, 2002.

Jordan N. Hydrologic statistics. ASCE HHTG, June 6, 2002.

Jordan N. Prinz Eugen salvage survey. Kendal Lyceum, Ithaca NY, July 2004.

Jordan N. NPDES Drainage Area Management Plan (DAMP) workshops. Santa Ana, CA, 1993.

Jordan N. National Pollutant Discharge Elimination System (NPDES) regulations and Orange County's Drainage Area Management Plan (DAMP). ASCE, Santa Ana, CA, 1993.

Jordan N. Hydraulics review courses. Orange County Flood Control District, Santa Ana, CA 1986.

Jordan N. Navy radiological safety courses. HI, VA, CA, 1971–1982.

### **Project Experience**

Mr. Jordan has experience dealing with many aspects of hydrologic analysis, including analysis, permitting, planning, design, and field instrumentation. Following are selected project summaries.

#### *Floodplain Management*

Conducted UNET, HEC-RAS, and 2-D unsteady flow modeling of levee breaches and flooding for detailed Flood Insurance Study.

For a county flood control district, performed flood control channel hydraulic and structural design, supercritical flood control channel transitions, spatially varied flow over side weir.

#### *FEMA Mapping*

Conducted regional levee breach and floodplain analysis and FEMA Conditional Letter of Map Revision for a California city.

Completed FEMA Conditional and Letters of Map Revisions (CLOMRs, LOMRs) in California.

#### *Hazard Analysis and Mitigation*

Hydrologic analysis of levee breach and watershed inundation using unsteady 1-D and 2-D modeling.

Hydrologic analysis of increased clear flow and bulked flow following wildfire in watershed.

Hydraulic analysis of dam breach using 2-D unsteady unconfined flow modeling.

#### *Water Quality*

Studied impact of municipal sanitary sewage spills into storm drain system reaching coastal recreational waters.

## *Restoration of Natural Systems*

Served as county flood control district liaison for wetland restoration project.

Guided harbor maintenance dredging, including coordination with resource and permitting agencies to mitigate impact of dredging of eelgrass-covered shoal; eelgrass mitigation was successful.

Conducted Navy shore activities, reactor decommissioning, building decontamination, radioactive waste storage site release, radioactive waste disposal, and environmental radiation surveys.

## **Specialized Training**

“Toe Scour Evaluation,” ASCE, December 10, 2004.

“HEC-HMS Hydrology,” Floodplain Management Assn., August 8, 2003.

“Water Quality Modeling,” ASCE, July 25, 2003.

“Hydrologic Modeling Using GIS,” ASCE, October 8, 2002.

“Two Dimensional Hydraulic Modeling,” ASCE, October 4, 2002.

“Recurring Cases and Issues in Forensic Engineering Practice” ASCE, May 10, 2002.

“Floodplain Mapping Workshop,” Haestad & FEMA, February 2002.

“Drainage Law Seminar,” CELSOC, May 2001.

“Orange County Hydrology Rational Method Seminar,” ASCE, December 2000.

“Orange County Flood Control Storm Drain Design Seminar,” ASCE, 1999.

“Introducing HEC-RAS Ver. 2.2,” UC Institute of Transportation Studies, 1999.

“EPA Storm Water Management Model (SWMM) Ver. 4.3 Workshop,” OSU, 1995.

“OES Registration & Training for Post-Earthquake Damage Assessment,” CA OES, 1995.

“Retrofitting Stormwater Detention Facilities (to address storm water quality),” ASCE, 1993.

“Erosion & Sediment Control,” ASCE, 1992.

“Design of Concrete Buildings for Earthquake & Wind Forces,” ICBO, 1992.

“Applications of HEC-2 Computer Program in FEMA Flood Plain Studies,” IU/AES, 1989.

“Street and Highway Drainage,” UC ITS, 1986.

“Conducting Public Meetings,” PSI, 1986.

“Field Supervision of Public Works Projects,” UC University Extension, 1985.

“Microcomputer Usage in Civil Engineering,” ASCE Workshop, 1985.

“Packaging and Transportation of Radioactive Materials, No. 245B,” Nuclear Energy Waste Management Consultants, 1982.

“Radiography, film sensitometry and interpretation, and radiographic safety (ASNT Level II),” Rockwell International, 1981.

“Health Physics in Radiation Accidents,” Oak Ridge Associated Universities, 1976.

“Instructor Training Certificate,” Pearl Harbor Naval Shipyard, 1971.