

## EDUCATION

- ◆ University of California, Davis  
Completed course work for MS in Civil Engineering, 1984  
with emphasis in Water Resources
- ◆ University of Santa Clara  
BS in Civil Engineering, 1980



## PROFESSIONAL LICENSES and SOCIETIES

- ◆ Registered Civil Engineer in California
- ◆ Member, American Society of Civil Engineers
- ◆ Member, Tau Beta Pi, Engineering Honor Society
- ◆ Member, US Committee on Irrigation and Drainage

## EXPERIENCE

- 1984 - Present      **MBK Engineers, Sacramento, CA**  
**Principal**  
Civil engineer in fields of flood control, hydrology, hydraulics, water resources planning, drainage, water supply, surveying and levee maintenance.
- 1980 - 1983      **Bechtel Corporation, San Francisco, CA**  
**Civil/Structural Engineer**  
Design and construction of concrete and steel involving structural analysis, seismic design, interdisciplinary coordination, field construction correspondence and temporary field assignments.

## EXPERIENCE HIGHLIGHTS

### **Reclamation District Levee Engineering**

Acts as public representative and provides consulting engineering service to 27 Sacramento/San Joaquin Delta and Suisun Marsh Reclamation Districts in regard to levee maintenance and rehabilitation. This includes levee rehabilitation design and construction, levee surveys, bank protection design and construction, resolution of seepage and subsidence problems, development of encroachment control criteria, maintenance inspections, maintenance recommendations, assistance with regulatory filing, environmental assessment assistance, assistance and participation in funding programs through the State and Federal governments, flood fight coordination and hazard mitigation planning (1984-present). Levee work totaled over \$70 million between 1988 and 2008. Recent significant projects include

importation of 625,000 cy of material from Decker Island to stabilize 10 miles of levee on 4 reclamation districts (2000-04), design and construction of a habitat-friendly levee on Reclamation District No. 2110 (2001), development of procedures to perform non-destructive subsurface surveys of the levees using electromagnetic technology (2005), design and construction of breach closures on Prospect Island (1996), McCormack-Williamson Tract (1997) and Little Mandeville Island (2001). Provided services to Corps of Engineers in regard to \$196 million CALFED Levee Stability Program (2008-09).

#### **Habitat Improvement in Conjunction with Levee Rehabilitation**

In role of engineering consultant to reclamation districts, has been extremely active in development of projects that benefit levees and provide habitat enhancement. Responsibilities include development of design plans, environmental documentation, regulatory assistance, construction, and monitoring. Recent projects include the Beaver Slough Habitat Improvement Project which stabilized eroded sections of levee while providing marsh and shaded riverine aquatic habitat; the Decker Island Habitat Project that stabilized 10 miles of levee on 4 levee districts while creating 30 acres of tidal marsh habitat (2000-04); the Lower Sacramento River Revegetation Demonstration Project which consisted of construction and maintenance of vegetation through existing rip rap on Grand Island (2000); the Delta Channel Islands Demonstration Project which evaluated the viability of using biotechnical bank protection in the Delta (1999-2005); design and construction of a habitat-friendly levee on McCormack-Williamson Tract (2001 & 2005); and bank protection demonstration projects on Holland Tract and McCormack-Williamson Tract utilizing various methods to demonstrate the ability to incorporate vegetation in bank protection.

#### **Regulatory Permitting**

Experience in the Delta in regard to regulatory permitting includes all environmental documentation and permitting for levee projects and other entities. Responsibilities include project design, sediment testing, environmental documentation, acquisition of regulatory permits, and construction. Recent projects include dredging at Lauritzen Yacht Harbor (2001), Driftwood Marina (2003), the Williams Ranch irrigation intake channel (2004) and Cruiser Haven Yacht Club (2002).

#### **CALFED Levee Program Support**

Supervised projects in support of CALFED levee project planning. In 1999, developed quantity and cost estimates to rehabilitate all Delta levees to the PL 84-99 minimum standard. This involved compilation of all available levee survey data, compilation of fill quantity estimates, development of levee rehabilitation costs, and development of procedures to estimate incidental costs. In 2000, 25 miles of exterior levees in the Suisun Marsh were surveyed and quantity and cost estimates developed for rehabilitation of Suisun Marsh levees.

#### **Fish Screen Design and Construction**

Since 1994, has supervised design and construction numerous fish screens on existing irrigation facilities. These include all the small diversions screened under federal grants to the Family Water Alliance (2000-present). Major projects include the Pelger Mutual Water Company (1994), Boeger Family Farms (1999), Hastings Island Land Company (2000), Reclamation District No. 999 (2005), Williams Ranch (2004), and the Browns Valley Irrigation District (1998).

### **Drainage Facilities Engineering**

As consulting engineer to reclamation districts, responsibilities also include evaluation of drainage facilities. In 1992, performed research and reporting to the Regional Water Quality Control Board of all irrigation and drainage channels for all reclamation districts as required under the Inland Surface Waters Plan. Have performed numerous evaluations of drainage facilities including pump testing and evaluation, hydraulic and hydrologic evaluation of canals, and pump plant design and construction. Major projects include construction of new pumping plants on Reclamation District No.'s 551, 999, 2029, 2033, and 2065.

## **CONTINUING EDUCATION, SEMINARS, and WORKSHOPS**

- ◆ Flood Fight Methods, California Department of Water Resources, 1984.
- ◆ Water Surface Profile Computation using HEC-2 on the IBM-PC, U.C. Davis Extension/Hydrologic Engineering Center US Corps of Engineers, 1985.
- ◆ Water Systems Management Workshop, U. S. Bureau of Reclamation, 1987.
- ◆ Soil Compaction Techniques, Budinger & Associates, 1989.
- ◆ Flood Plain Hydrology and Computer Programming HEC-1 on IBM Compatible Personal Computers, UC Davis Extension/Hydrologic Engineering Center, US Army Corps of Engineers, 1992.
- ◆ Delta Levees Workshop, California Department of Water Resources, 1985.
- ◆ Fish Passageway Workshop, Natural Resource Conservation Service, 1998.
- ◆ Stream Investigation, Stabilization and Restoration, ASCE, 2004

## **BOARDS and COMMITTEES**

- ◆ Habitat Advisory Committee to the State of California Delta Levee Subventions Program
- ◆ Delta Channel Islands Work Group
- ◆ CALFED Levees & Channels Technical Team
- ◆ CALFED Levees & Channels Seismic Sub-Team
- ◆ CALFED Suisun Marsh Levees Sub-Team
- ◆ CALFED Delta Risk Management Strategy Technical Advisory Committee
- ◆ Delta Risk Management Strategy Technical Advisory Committee
- ◆ Delta Risk Management Strategy Steering Committee
- ◆ Lower Yolo Bypass Planning Forum
- ◆ Delta Vision Stakeholder Coordination Group