

FEDERAL DAM AND LEVEE

Improving safety and minimizing risk to strengthen our nation's infrastructure

Michael Baker

I N T E R N A T I O N A L



TOP 6 Firm in Dams and Reservoirs,
ENR Rankings

WHO WE ARE

Michael Baker International, a leading provider of engineering and consulting services for dam safety, has proudly partnered with government agencies for over 80 years to strengthen infrastructure across the globe.

We are a full-service engineering firm with expertise in inspection, assessments, design and construction management for dams, levees, and canals. We deliver quality, cost-effective solutions with safety at the forefront.

FEATURED AWARDS

Buckeye Lake Dam Improvements

National Dam Project of the Year
Association of State Dam Safety Officials

Lake Loramie Dam Rehabilitation

Water Resources Outstanding Achievement Award
2019 American Council of Engineering Companies of Ohio and Pennsylvania Awards

Canonsburg Lake Dam Renovations

Project Merit Award - Water Supply
Environmental Business Journal

Somerset Lake Dam Rehabilitation

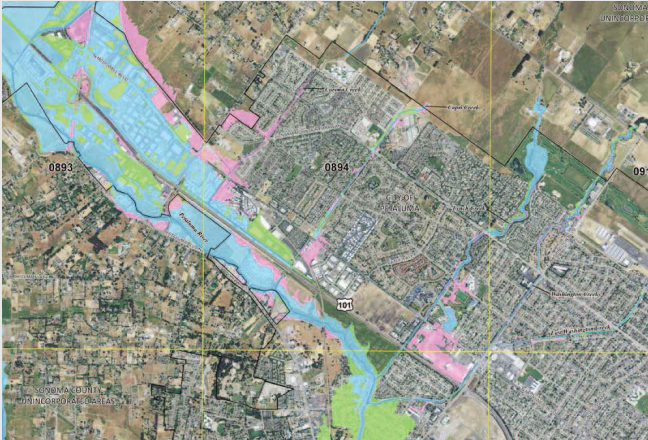
Project Merit Award - Water/Environment
ENR Mid-Atlantic Regional Best Project Awards

We Make a Difference

PROVIDING PROFESSIONAL ENGINEERING SERVICES FOR DAM AND LEVEE OWNERS NATIONWIDE, INCLUDING STATE AND FEDERAL AGENCIES.



*Dutch Fork Lake Dam Rehabilitation
Washington County, Pennsylvania*



FEMA Levee Support (FEMA)

Michael Baker served as the National Service Provider for the FEMA Flood Map Modernization program, providing technical and administrative services to support Digital Flood Insurance Rate Maps and Flood Insurance Study reports. Michael Baker also managed the two-year assessment of FEMA's levee policy. The assessment was performed by the Levee Policy Task Committee comprised of federal and state agencies responsible for the design, construction, inspection and maintenance of levees, with final recommendations for revising the policy.

Prado Dam Outlet Works Project (USACE)

Michael Baker prepared final plans, specifications and estimate for this \$70 million project to raise the top of the Prado Dam by approximately 28 feet as part of the Santa Ana River Mainstem Flood Control Project. The project included design and construction of a new outlet works capable of releasing water at a rate of 30,000 cubic feet per second. The facility required a sophisticated seismic structural analysis, in accordance with U.S. Army Corps of Engineers design criteria, and resulted in unique construction and design features.



Wheeling Creek Site 25 Dam Rehabilitation Project (NRCS)

Michael Baker performed a comprehensive assessment of the recently reclassified high hazard dam to identify current deficiencies and bring the facility into compliance with current dam safety regulations. Engineering services included geotechnical, hydrologic and hydraulic, reservoir routing, structural and sediment accumulation analyses. The final design includes the complete re-construction of the principal spillway riser and impact basin, construction of a widened roller compacted concrete auxiliary spillway, and embankment improvements to collect and monitor seepage through the dam.

PROJECT CONSIDERATIONS

At Michael Baker, *We Make a Difference* by prioritizing safe, innovative and sustainable project considerations for our client's infrastructure projects. These considerations include:

Engineering with Nature

Resilience & Sustainability

Risk Management

Public Safety

Operations Responsibility

Emergency Planning

Sea Level Rise

Climate Change & Vulnerability Assessments

Flood Risk Management

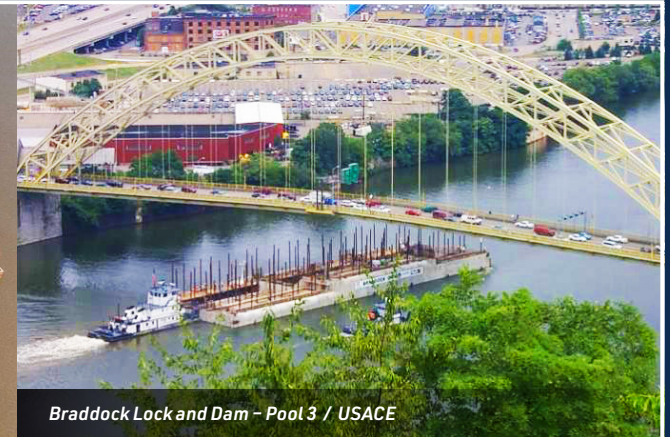
Visit mbakerintl.com/practices/water for more information about our capabilities and iconic projects.

CONTACT

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Structural Design of Olmstead Locks & Dam / USACE



Braddock Lock and Dam - Pool 3 / USACE

SERVICES PROVIDED

Dam Inspection & Assessment

- Regular Inspection & Reporting
- Special Inspections
- FEMA Inspection & Certification
- Operation, Maintenance & Inspection Manuals

Construction Management & Inspection

- Construction Administration & Inspection
- Dispute Resolution

Emergency Response

- Assessment & Repairs
- Monitoring & Testing

Dam Removal & Stream Restoration

- Breach Design
- Natural Channel Design & Biological Stabilization
- Water Control & Sediment Controls

Rehabilitation Design

- Spillway Modification or Replacement
- Overtopping Protection
- Control Tower Rehabilitation
- Seepage Control
- Stability Improvements
- Post-Tensioned Anchors

Hydrologic & Hydraulic Analysis

- GIS-Based Hydrologic & Hydraulic Tools
- Steady-state Modeling
- Unsteady-state Modeling

Permitting & Environmental

- Wetland Investigation & Delineation
- Dam Safety Permitting
- Environmental Permitting
- Cultural Resources

Dam Break Modeling & Inundation Mapping

- Dam Break Scenarios Using Both Steady & Unsteady-state Hydraulic Models
- Automated Floodplain Delineation Tools

Emergency Action Plan Development

- Development, Maintenance & Implementation of Emergency Action Plans
- Assisted in Personnel Training

Geotechnical Investigation & Analysis

- Soils & Geologic & Hydrologic Settings Reports
- Aerial Photography Review & Analysis
- Detailed Geologic or Geotechnical Field Reconnaissance
- Settlement Analysis & Control
- Slope-stability Analysis
- Seepage Analysis
- Seepage Cutoff Analysis

Structural Analysis & Design

- Structural Design for Spillways, Retaining Walls & Other Hydraulic Structures
- Evaluation of Concrete Structures for Stability Issues, Such as Overturning & Sliding
- Alternative Methods of Stabilization

Risk Assessments & Prioritization

- Condition Assessments
- Risk Evaluation & Management
- Programmatic Planning
- Potential Failure Mode Analysis

Michael Baker

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