



# Managing Risks for Dams & Levees



### Structural safety, preservation and long term performance of dams & levees



Over the past 20 years, Geocomp has become a leader in real-time Web-based monitoring of the structural integrity, capacity, and safety of dams and levees using monitoring as an effective means of managing risk. With our in house development of iSiteCentral<sup>™</sup>. a web-based data collection, management and reporting system, Geocomp can provide early detection and warning of potential leakage and movement of dams and levees to ultimately, prevent structural failure.







Geocomp has been brought in to handle some of the most challenging projects. From our involvement with the USACE, where we were tasked to help determine the cause of levee failures in New Orleans after Hurricane Katrina, to our work on a new dam safety best practices manual for the Centre for Energy Advancement through Technological Innovation's (CEATI) - Dam Safety Interest Group, Geocomp has played an active role in outlining and developing "best practices" for instrumentation programs for dam surveillance, inspection, instrumentation requirements and maintenance, and performance monitoring.

Without a comprehensive understanding of the underground conditions and potential vulnerabilities, dam and levee owners and operators are exposed to more liability than ever. Geocomp has an established consulting practice focused on risk management for earthen embankments such as dams and levees.

## Our Capabilities



#### Integrated GeoStructural Solutions



### Dam and Levee Safety

Geocomp along with Rensselaer Polytechnic Institute, was selected by National Institute of Standards (NIST) and Technology's -Technology In Practice (TIP) program to develop new health monitoring and assessment tools for levees and dams.

Our work together focuses on integrating relative new technologies, such as INSAR satellite data, low cost GPS receivers, Shaped Array MEMS sensors with advanced modeling software to provide new ways of detecting problems that might lead to failures.

Geocomp's role is to design and manage the field testing of these technologies; provide a data collection and management tool that will receive data from a variety of technologies; save data in a format that is accessible for immediate use.

Photos: (Cover) Center Hill Dam; (Inside Left) iLevee 17th Street Canal, Hickory Log Creek Dam, Kentucky Lock and Dam; (Inside Right) Willow Island; (Back Cover) Bomba Dam - Italy, Lowell Reservoir Dam, Oostersheld Storm Surge Barrier-Holland, Willow Island.



Our dams and levees portfolio encompasses all aspects of asset and risk management:

#### Bomba Dam, Italy

Buffalo Creek Dam Failure, West Virginia

Clarence Cannon Dam, Mississippi

Clemson Dams Seismic Upgrading, South Carolina

Hickory Log Creek Dam, Georgia

iLevee Intelligent Flood Protection Monitoring System, Louisiana

IMC Dam Failure, Florida

Kansas Power and Light Auxiliary Dam, Kansas

Kentucky Lock and Dam, Kentucky

Lowell Reservoir Dam Safety, Massachusetts

National Institute of Standards and Technology's Program for levees and dams

New Orleans Levee System, Louisiana

Oostersheld Storm Surge Barrier, Holland

Palo Verde Nuclear Station, Arizona

Santa Clara Water District, California

Smithland Dam, Ohio River

Willow Island Dam, Ohio River

#### About Geocomp

We have significant experience in establishing monitoring criteria, threshold geotechnical performance values and design of automated monitoring systems to evaluate critical behavior assumptions for dams and levees. Geocomp specializes in the engineering and control of risk for earth and concrete embankments and we excel on tough projects with challenging soil conditions and related structural design criteria. Our goal is to reduce risk by providing monitoring services on major projects during construction to warn of unexpected performance in time to mitigate risks.

We provide an understanding of subsurface conditions and present innovative and sound geostuctural solutions – resulting in better control of the risk and cost of projects.

What differentiates Geocomp is our proven history in the application of leading edge technologies to solving complex geostructural challenges.

We leverage our experience on thousands of projects in the development of industry leading applications for:

- Real-time, web-based instrumentation and monitoring systems;
- Computer software and instrumentation;
- Advanced numerical modeling;
- Active Risk Management<sup>™</sup> protocols; and
- Soil, rock and geosynthetic testing services, through our GeoTesting Express, Inc. (GTX) division.



