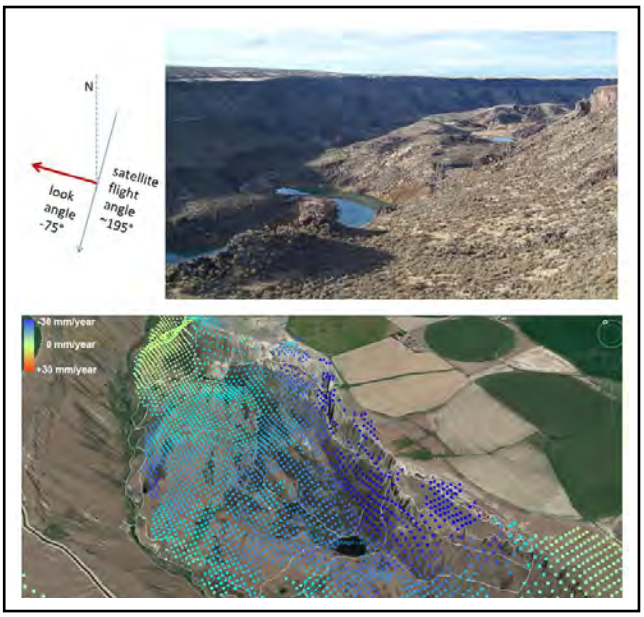
SOUTHWEST RESEARCH INSTITUTE

Engineering and Construction Management Support

Southwest Research Institute® (SwRI®) provides effective solutions to a broad range of infrastructure and geotechnical engineering problems, including design analyses, nondestructive evaluations, and testing. This work supports development of new facilities and infrastructure, and evaluation of remediation needs for existing systems. With its broad range of expertise, SwRI can provide complete start-to-finish assessments or focus assistance on specific aspects of engineering and construction projects. The SwRI team is known for its innovative approaches to solving complex engineering problems for sites with high-consequence natural and human-induced hazards.

Services Offered

- Civil structural engineering
- Corrosion monitoring, testing, and mitigation for pipelines, tanks, and reinforced concrete
- Flood hazard assessment
- Geophysical surveys
- Geotechnical engineering
- Remote sensing for characterization, damage assessment, and monitoring
- Risk and reliability assessment
- Seismic hazard assessment
- Structural geological and soils investigations
- Tsunami modeling



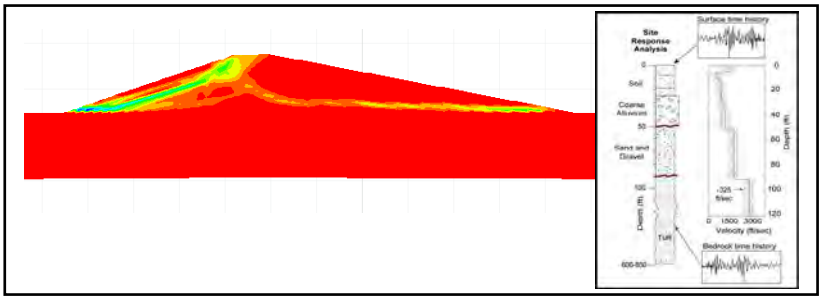
SwRI engineers use geoinformatics and satellite radar interferometry (InSAR) to monitor landslides.

Applications

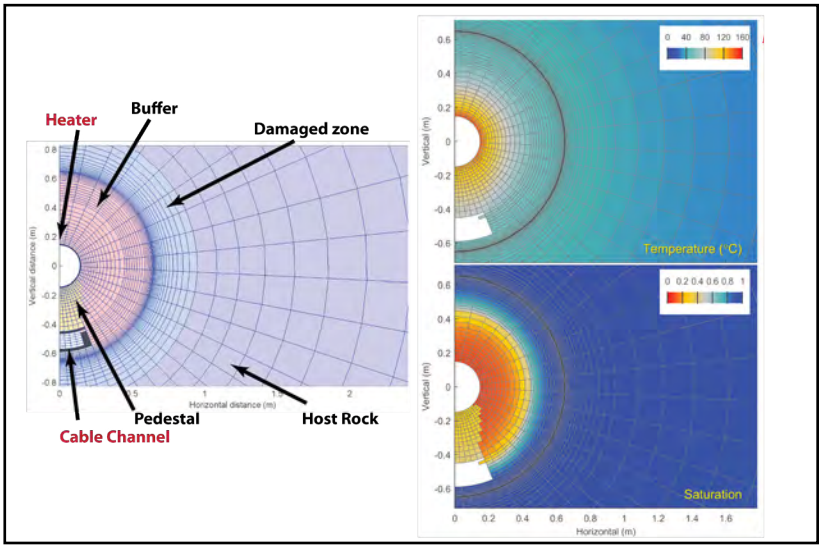
- Dam and levee safety
- Erosion and settlement of earthen covers
- Groundwater hydrology
- Flood hydraulics
- Liquefaction assessment
- Advanced nonlinear numerical modeling for seismic response and impact assessment of structures
- Computational fluid dynamics modeling for hydraulic problems
- Modeling of spillway surface erosion and internal erosion of embankments
- Permafrost-freeze-thaw engineering problems
- Seismic performance assessment of reinforced concrete and steel structures
- Seismic site response analysis
- Site characterization
- Slope stability assessment
- Soil–structure interaction analysis
- Stability and design of underground tunnels and caverns
- Structural fragility (seismic and tsunami)
- Surface water hydrology

Benefits

- Integrated approach to assessment of surface and subsurface facilities, considering both external and internal hazards
- Comprehensive approach to deterministic and probabilistic structural performance evaluation under design-basis and beyond design-basis conditions
- State-of-the-art field and laboratory instrumentation to support design, construction, and remediation
- Proven approach to management and implementation of field and laboratory operations
- Independent, nonprofit organization providing unbiased evaluations, recommendations, and solutions for government and industry
- Ready access to a highly qualified team of engineers, geologists, hydrologists, physicists, remote-sensing scientists, and seismologists with proven ability to conduct creative assessments and find innovative engineering solutions to client problems

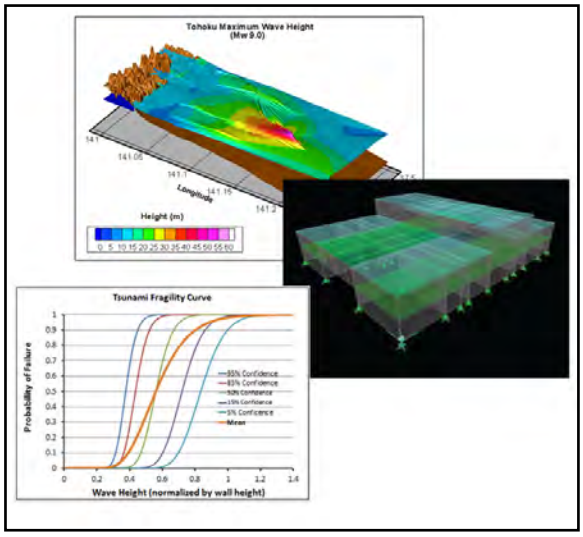


SwRI engineers perform site response analysis and evaluate seismic stability of embankments.



Modeling of thermal-hydrological-mechanical coupled processes is used to evaluate stability of excavated underground openings.

Benefiting government, industry and the public through innovative science and technology



SwRI engineers perform tsunami modeling and evaluate tsunami fragility of coastal structures.

We welcome your inquiries.

For additional information, please contact:

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SOUTHWEST RESEARCH INSTITUTE®

Southwest Research Institute® is a premier independent, nonprofit research and development organization. With eleven technical divisions, we offer multidisciplinary services leveraging advanced science and applied technologies. Since 1947, we have provided solutions for some of the world's most challenging scientific and engineering problems.

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