Dam and Reservoir Services

*Golder is one of the world’s leading companies in design and construction management of dams and reservoirs for water supplies, tailings management, flood control, and hydroelectric power, as well as environmental enhancement, recreation, and fish breeding.*

Our experience includes dam expansions and rehabilitation to upgrade dams deemed deficient because of changing seismic or hydrologic criteria. Golder provides performance assessments of existing dams and designs solutions tailored to clients needs for hydraulic structures, water supply dams and mine tailings storage facilities. We have successfully designed non-standard, customized hydraulic structures using model studies that saved substantial money over more traditional approaches. Our expertise extends to design of concrete and roller-compacted concrete (RCC) dams as well as managing the construction of all types of dams and their ancillary structures.

We understand that our clients’ needs extend beyond technical issues to environmental and cultural issues. With our expertise in biological assessments, endangered species evaluations, and social assessments we execute sustainable projects that can be successfully implemented.
Planning and Pre-Design
- Feasibility studies
- Hydrology and hydraulics
- Storage, flood control, irrigation, and hydroelectric evaluations
- Geophysical surveys – crosshole seismic and electrical resistivity
- Geologic and geotechnical investigations
- Environmental, conceptual, and feasibility planning

Permitting
- Environmental impact assessments and statements
- Biological evaluations and endangered species assessments
- Cultural/social resource evaluations and sustainability assessments
- Hazard evaluation, risk assessment, emergency action planning, and potential failure mode analysis (PFMA)
- Public involvement and stakeholder meetings

Design
- Embankment and RCC dam design
- Spillway and outlet works design and evaluation
- Foundation improvement
- Seismic design
- Diversion tunnels, outlet tunnels, and pressure tunnels
- Cost estimating and preparing bid documents
- Pipeline systems

Construction
- Dam and pipeline construction management
- Quality control and assurance
- Design build
- Turnkey construction

Existing Structures – Rehabilitation & Repair
- Dam O&M, inspection, instrumentation, and monitoring
- Stability assessments
- Dam raising, upgrades, and rehabilitation
- Seepage control
- Seismic upgrades
- Emergency action planning