

Dam Services



F&R's engineering staff provides dam consulting services related to design of earth, rockfill, roller compacted concrete, and concrete gravity dams.

Specific analyses and studies which can be provided include:

Dam Safety Inspections

F&R performs site observations and visual assessment of embankment and spillway structures to identify deficiencies and potential problems such as erosion, animal burrows, settlement, slope instability, excess seepage, unsuitable vegetation, or structure deterioration.

Hazard Classification Assessments

Utilizing topographic maps, aerial photographs, and GIS data together with visual reconnaissance of downstream areas, F&R staff can evaluate potential damages and flooding in event of a dam breach.

Inundation Studies

By applying hydrologic modeling of storm runoff and dam break scenarios utilizing GIS data, field survey data, site reconnaissance, and as-built data, F&R regularly produces inundation zone mapping reports for our clients.

Emergency Action Plans

This service includes development of action plans for implementation by dam owners and emergency response personnel in the event of a potential dam break.

Geotechnical Analysis

Utilizing intrusive subsurface and non-intrusive geophysical techniques, F&R's professionals can obtain the subsurface data needed to perform analyses of slope stability, settlement, and seepage of earth embankment dams.

Dam Removal

F&R supports client efforts to restore historic up-river fish passage (or to remove public hazards) by providing bathymetry profiling, sediment transport analysis, sediment profiling, environmental studies, permitting, and construction plans and specifications.



Remedial Design

In response to identified dam safety deficiencies, F&R staff provide designs needed for erosion protection, slope and channel armoring, tree removal, seepage collection and control, draw-down siphons, and spillway capacity upgrades.

Structure Design

We assess existing spillway structures (risers, conduits, box spillways, earth channels, outlet structures) for hydraulic capacity and structural conditions and design new structures as needed for required capacity improvements.

Plans and Specifications

F&R assembles required construction documents including erosion and sediment control, site plans, grading plans, and structure design detail plans, along with appropriate specifications suitable for contractor bidding and control of construction.

Construction Administration and Inspection

From the design phase onward, F&R provides professional and technical services for projects, including dam rehabilitation and construction, contract bidding, contract award, quality control testing, resident inspection, pay meetings, and project close-out.

Related Services

Drawing on the expertise of professionals from throughout the company, F&R is also able to provide a myriad of related services, including, but not limited to, wetland delineation, environmental permitting, letters of map revision, and construction materials testing.

