

# Dam Ownership Fact Sheet



## TOPIC:

## HOW TO PROCURE THE SERVICES OF A PROFESSIONAL ENGINEER

### DAM MAINTENANCE & OWNER RESPONSIBILITY

The responsibility for maintaining a safe dam rests with its owner. The owner must understand the laws and regulations associated with proper dam maintenance and the procedures for keeping these structures safe. Dam owners are also responsible for maintaining safety at and around their dam. It is important to limit trespassing including considering fencing alternatives along high spillway walls and reducing access around dangerous water hydraulics. Proper operation, maintenance, repair and rehabilitation of a dam are key elements in preventing a failure, limiting your liability and maintaining your water resource. One of the most important procedures for ensuring proper maintenance of the dam is procuring the services of a Professional Engineer. A Professional Engineer is one who has been certified by the state and the industry according to their tested ability, schooling and experience.



### WHY DO I NEED AN ENGINEER?

All dams meeting government regulatory definitions – no matter what their size or level of engineering – will deteriorate with time. Periodic inspection, proper maintenance and occasional repair and rehabilitation are inevitable. An owner needs the expertise of an engineer to perform inspections or evaluate and undertake corrective measures at a dam. An engineer can investigate the problem and recommend a course of action which may include the design of corrective measures and the preparation of construction plans and specifications. The engineer also can assist in selecting a contractor and will provide valuable construction inspection services.

### QUESTIONS TO ASK WHEN HIRING

It is essential to select someone with a Professional Engineer (P.E.) license, with a background in civil engineering, who is competent and experienced in the field of dam safety.

Important criteria to look for in a prospective engineer include the following:

- ✓ A licensed Professional Engineer in your state;
- ✓ A minimum of 10 years of experience in dam design, maintenance, safety and construction;
- ✓ A knowledge of the rules and regulations governing dam design and construction in the state where the dam is located;
- ✓ Specific experience in the problem area— hydrology, hydraulics, structural, soils, seismic, seepage, and geotechnical engineering.

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## HOW DO I CHOOSE AN ENGINEER WHO IS BEST FOR MY NEEDS?

It is important to use the *Qualification-Based* approach to selecting an engineer. *Qualification-Based* means that the knowledge, experience and ingenuity of the engineer are the determining factors in making the selection. This strategy is advantageous when the owner is uncertain about the exact problem or the best solution to the problem. When *Qualification-Based* selection is used, several engineering firms submit their technical qualifications, experience with similar projects, reputation with existing clients and any other factors pertaining to the specific project. The owner then selects the three to five most qualified firms to make brief presentations outlining a cost-effective and innovative approach to the problem. Based upon these presentations, the owner chooses the most qualified engineer to develop a scope of work. When agreement on the scope of work is achieved, the engineer and the owner negotiate a price that is fair and reasonable to both parties. If an agreement cannot be reached, negotiations start with the second-ranked engineer. In this selection process, price is a factor, but only after the most qualified engineer has been identified.

*Fee-Based* selection means the engineer's fee is the only determining factor in making the selection. This is not the recommended selection procedure. It is only advantageous when the owner, in conjunction with their State Dam Safety Program, knows exactly what is needed and can clearly define the scope of work before meeting with an engineer. In this case, the engineer is requested to prepare the designs and bid documents or conduct investigations as the owner specifies. A strict *Fee-Based* selection often means the engineer selected may not be qualified to do the work, especially if the bidding is open to anyone and/or the scope of work is poorly defined.



Carefully consider your selection of an engineer. A little work on your part in selecting the engineer may save you money in the future.

## FOR YOUR CONSIDERATION

Request references and a portfolio from the engineer. Contact the references of owners and contractors to discuss the engineer's performance. Look at projects that have been completed under the engineer's leadership. Request to review state files of projects an engineer has undertaken to see if the process went smoothly. Maintain an open line of communication with regulatory agencies, particularly your State Dam Safety Program. They may be unable to recommend one engineer over another but they can give an assessment of their previous work. Discuss an engineer's recommended course of action to verify that regulatory requirements will be satisfied. Educate yourself in the basics of dam safety and be knowledgeable regarding the laws you must meet.

## RESOURCES

### ASDSO Resources

The ASDSO website houses national guidelines on dams. Go to:  
[DamSafety.Org/ManualsandGuidelines](https://www.damsafety.org/ManualsandGuidelines)

For more information, videos and tools for dam owners go to:  
[DamOwner.Org](https://www.damowner.org)

Access your state's Dam Safety Program by clicking your state at:  
[DamSafety.Org/States](https://www.damsafety.org/States)