Water Board Basics: Keys for Success

Selecting an Engineer

Why does your board need an engineer?

You will need a licensed professional engineer to determine the condition of your system's water and/or wastewater infrastructure, estimate costs and design project alternatives. The engineer may also include information on how to pay for improvements, such as the community's eligibility for loans and grants to finance them.

Utilities may also need to retain an engineer to provide advice and assistance on a monthly or as-needed basis for ongoing utility operations.

Selecting an engineer or an engineering firm that is a good match for your project and community is key to a successful infrastructure improvement project.

When do you need an engineer?

Most funding agencies require a Preliminary Engineering Report (PER), developed for the community by a registered professional engineer. The PER is the first step in solving infrastructure problems; it describes the system, proposes alternatives or options to solve the problems, and includes cost estimates, projected user rates and possible funding sources.

Once the project is identified and funded, an engineer must design the project in consultation with the community and the regulatory agencies. The engineer develops the bid documents, handles pre-bid and pre-construction conferences with contractors, and often serves as, or provides the inspector for construction and post-construction services during the first year of operation.

The PER is a review and assessment of the water or wastewater system. The engineer should evaluate the entire system; identify all system components in need of repair or replacement; identify and prioritize solutions; and present phased solutions (if they are possible).

How does the board select an engineering firm?

Although not required, it is often useful for the board to appoint a committee to guide the selection process. If created from the start, the committee defines and describes the problem(s) to be solved, drafts the Request for Proposals (RFP), prepares questions for the interview process, evaluates the proposals, checks references, and narrows the field in a systematic and consistent fashion for the governing board. The selection committee may, in some cases, complete the final interview.

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Nevada Bureau of Health Protection Services

1179 Fairview Drive
Carson City, Nevada 89701

775/687-4750

fax 775/687-3218

www.state.nv.us/health/bhps

Support for this project was provided by the Nevada Drinking Water State Revolving Fund — A federal program administered by the Nevada Bureau of Health Protection Services to provide technical assistance and loan funds to Nevada private and public water systems to ensure federal Safe Drinking Water Act regulation compliance.

If a selection committee is used, the committee must provide the governing board with all of its findings, rankings and evaluations. Remember, the governing board makes the final decision (by voting as a board), not the selection committee. Only a governing board can bind an engineering contract.

To select an engineer who is a good fit for the job, and to comply with federal and state procurement, the following steps are recommended.

1. Understand your water and/or wastewater system.

For example, your water board knows that the system is out of compliance: the tank is too small; the distribution system leaks; some pipe is undersized; and pressure is uneven. The problem may also include a lack of understanding or support from the public. The challenge of obtaining affordable funding to make the improvements may be an additional task. Do not limit yourselves. A water system may seem to need a new storage tank, but the distribution system may have excessive leakage. When the distribution system is rehabilitated, the perceived need for more storage may no longer be an issue.

Draft a description of what you think should be replaced and upgraded. This provides an engineering firm with a general idea of your system's condition. Involve the board, manager, operator, regulatory agency and community members to ensure that it is inclusive and accurate.

2. Do your homework.

Use the resources of the regulatory and funding agencies, and technical assistance providers to learn about possible solutions to your problem. They can direct you to information on technology innovations that may be useful in the evaluation process. For example, if your system is out of compliance with a primary drinking water standard, you should understand, in general terms, which technologies can help you return to compliance.

If you comprehend the basic technology and terminology, you can ask better questions and understand what the engineers are telling you.

3. Request proposals.

If you will be obtaining financing through a federal or state agency, contact the agency to obtain its requirements for engineer selection, PERs and environmental reports. The USDA Rural Development PER Bulletins have been adopted by all funding sources in Nevada including Community Development Block Grant, AB 198 and the Drinking Water State Revolving Fund.

Draft exactly what you want the engineer to do. This will be the body of the RFP.

Typically, the RFP should include the following:

- A brief description of the community, including populations, relevant demographics and location;
- An evaluation of the entire system, and identification of the project phases and deliverables that would be produced as a result of the contract with the engineer (for example, the PER). In the case of a PER, be clear that your community will need several alternatives, cost estimates and a recommended alternative;
- Deadline for proposal submittal;
- Criteria to be used to evaluate proposals (ex.: familiarity with rural Nevada, experience in obtaining grants and loans for similar projects);
- A statement of expectations and needs (engineer should expect to attend monthly board meetings; community will need engineer to seek outside funding on behalf of the community);
- Request resumes for the principals of the firm, project manager and staff who will be directly involved in the project;
- A list and description of relevant successfully completed projects;
- Request for references; and

- Note whether a formal presentation or interview will be required.

4. Make a list of possible engineering firms.

Funding agencies usually have mailing lists of engineering firms. Also check with communities of similar size to obtain their lists.

5. Advertise in newspapers and mail to engineers.

If you are a public body or want to obtain federal funding, follow NRS 332.115 and USDA RUS 1780.39(b)(1) guidelines for advertising your RFP. Allow enough time so that interested firms can respond to your advertisement by requesting the RFP. Be sure to list a contact person and telephone number in case there are questions.

If Community Development Block Grant funds are likely to be involved, an open and competitive selection process must be used and documentation retained. If you want to use your contract engineer of record, check with likely funding agencies to make sure that the selection process you employed is acceptable.

Be clear about when and where proposals are due, and what the cut off time is. (Note: it is especially important to specify if your area is not served by one-day overnight delivery service.)

6. Narrow the search.

The board or committee appointed by the board reviews, rates and ranks the firms based on the criteria in the RFP notice. If the committee has additional priorities, they should be defined, and preferably, stated in the RFP.

For example, if previous experience working with systems of a similar size is important, this could help to narrow the field. Sometimes knowledge of the region is helpful; other times new approaches might be more desirable.

In narrowing the list, each reviewer should be consistent. Keep a record of the review process so that it can be explained to the board. Also, if an engineering firm wants feedback on why it did not make the cut, the board will have the information. A checklist for each reviewer that contains the same elements and room for notes and comments is one way to provide this consistency. Typically the board will invite the finalists to make oral presentations at a board meeting.

7. Check references.

Be sure to check references. The check can be done of the finalists to be interviewed by the board/committee, or if time allows, the board/committee can check references after the interviews and before the next meeting when a final decision is made. It is a good idea to check the references provided, and also to call contacts for "relevant projects" to determine performance.

Ask the references whether the project was completed on time, were there change orders, did it cost more than the negotiated price, satisfaction with the work, ability to communicate with board and public, and questions directly related to the kind of expertise that your board is seeking.

8. Conduct oral interviews.

The board/committee should request that the project manager who will be working on the project make the presentation. You want to meet who you will be working with face to face.

The oral interviews are conducted in an open meeting. The board/committee should prepare a series of interview questions that reflect its priorities and are asked consistently of each firm. It is also permissible to ask questions related to the firm's proposal. But it is important that each firm be treated the same way during the interview process.

The board/committee may take action at that meeting (if shown as an action item on the agenda) by approving a resolution to enter into negotiations with a firm. The board/committee may choose to check references, and take action at the next meeting based on the results of the reference check.

Nevada law (NRS 332.115) requires that engineers be hired based on qualification, not cost. Only after the engineer is selected based on merit is it permissible to negotiate the cost of services. These negotiations occur during open session per Nevada's open meeting law, NRS Chapter 241.

9. Hire the engineer.

Once the engineer is selected, and an agreed upon price is negotiated, the board must execute a contract with the engineer. If cost of services cannot be settled, then the board negotiates with the second choice firm.

Be sure to send a letter promptly notifying all firms of the board's decision.

10. Retain the engineer.

At each stage of the process, (PER, design and construction) the board has the option to hire a different engineer.

Structure your engineering needs in phases. If an engineer does not perform in the PER phase, you have no obligation to hire that firm to design the project. However, if you are pleased with the PER, you may negotiate for future engineering phases with the same firm. Check individual funding agency requirements for special rules on this.

Summary

As a board member, your role is to make sure that the engineer is serving the board, meeting the terms of the contract, and developing work products that are useful for the utility. A thorough and fair selection process will help get your project off to a good start.

The board's expectations of the engineer

- ✔ Be able to communicate with the public
- ✔ Provide regular progress reports
- ✔ Initiate and sustain communication with the manager and board
- ✔ Help seek funding
- ✔ Be aware of the impact of costs on rates and ratepayers
- ✔ Attend board meetings as needed
- ✔ Meet deadlines
- ✔ Communicate with funding agencies and the designated local contact
- ✔ Provide a range of possible alternative problem solutions
- ✔ Be clear about costs, billing and change orders — no surprises
- ✔ Be able to explain project alternatives and costs in layman's terms

The engineer's expectations of the board

- ✔ Know the problem(s)
- ✔ Provide clear communication
- ✔ Designate the manager and/or one board member as the engineer's primary contact
- ✔ Ask questions
- ✔ Put items on the meeting agenda and take action promptly
- ✔ Pay bills in a timely manner
- ✔ Use the engineer's time wisely during community visits

This Water Board Basic was authored by Abby Johnson, Rural Community Assistance Corporation.

Rural Community Assistance Corporation
www.rcac.org

777 E. William St., Suite 109
Carson City, Nevada 89701
Phone: 775/882-8887
Fax: 775/882-8960

Rural Community Assistance Corporation is dedicated to assisting rural communities achieve their goals and visions by providing training, technical assistance and access to resources