

How Engineering Services ADD VALUE TO YOUR PROJECT AND CAN SAVE YOU MONEY

By Kristy Winchock, EIT,
Morris Engineering, LLC



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We often hear, “We don’t want to pay for an engineer,” or “Why do I need an engineer for this project?” And countless times, we get called in to fix “projects gone bad” due to lack of design, oversight, or both. This often results in paying for a project twice and sometimes leads to construction defect litigation.

Having an experienced engineer on your team throughout every phase of a construction project adds value and can save money. Here’s how:

Define the Needs and Goals

When starting a project, assemble a team that includes the property manager, board, and possibly an engineer, attorney, and accountant.

The project needs and goals must be defined, and it is important to know the distinction between the two. The project needs are the scopes that have to be completed during the project, i.e., the community’s roads need to be replaced. The goals would include improvements or

ancillary scopes that are desired, i.e., we want to slow down speeders. A knowledgeable engineer can help the association define their needs and goals and keep track of the decisions that have to be made to accomplish them.

An initial budget is crucial. An engineer can help the association prepare a reliable budget for decision making. Will the budget fund the needs? Will it also fund the goals? The engineer’s experience and knowledge can help keep the association on track for a successful project.

Program Development

The program is your roadmap from concept to completion, documenting needs, goals, and decisions. A well-prepared program avoids “Analysis Paralysis” and second-guessing. This is an important document that should be kept up to date, so it can be looked upon years after the project is completed to understand what decisions were made and why.

In preparation of the program, a skilled engineer can perform detailed evaluations, including visual review,

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measurements, and invasive inspections to look for hidden conditions. Has the program changed based on the findings? Does the budget need to be updated based on the findings? Knowing more information on the front end can help to avoid costly surprises during the project.

Communicating with the Membership

Frequent communication with the community is key to a successful project. Ask your engineer to present the program at an open meeting, to inform everyone about the project. Your engineer can discuss how and why the program was developed and share real-world experience from similar projects at other communities. Good communication with membership will ease their minds and get "buy-in" throughout the community.

Specifications/Request for Proposal (RFP)

Should an engineer prepare specifications or an RFP for your project? The short answer: Yes!

No matter what size project, specifications for an RFP will

give bidding contractors a defined scope of work. This will help ensure all the anticipated services are included and that bids can be compared "apples to apples."

SPECIFICATIONS SHOULD INCLUDE:

- **Contractual Requirements:** Insurance, warranties, time allowed, payment terms, etc.
 - These items influence the contractor's costs. Outlining these requirements up front can weed out the contractors that, for example, may not be insured.
- **Technical Requirements:** Material specifications, installation details, performance standards, etc.
 - Specifying the materials to be used and installation requirements will help make sure that bidders provide pricing for the desired components.
- **Bid Documents**
 - This ensures all bidders provide comparable proposals based on the same scope of work.
 - The engineer can create a bid summary to help the association compare contractor proposals and make informed decisions.

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A well-defined RFP prevents unexpected costs and reduces the need for change orders. A good bid document reduces the amount of "guessing" a contractor must do... More guessing means a higher bid price!

Bid Solicitation

Below is a list of example of how an engineer helps the association through the bid process as an impartial party:

- **Qualified Bidder List:** Working with the project team to develop a list of bidders and provide insight into their experience working with certain vendors.
- **Distribute Bid Packages:** Send packages simultaneously with the same due date to avoid questions of collusion.
- **Pre-Bid Meeting:** Review project requirements, answer questions, and distribute meeting minutes to the contractors and project team.
- **Receive and Process Bids:** Review and tabulate bids for the project team's review.
- **Contractor Interviews:** Prepare questions for the contractors to determine the best fit for the community.

Updated Project Budget

Once a contractor is chosen, remember their bid doesn't cover all costs. Consider:

- **Unforeseen Conditions:** Include a contingency, typically 10%-20% of the project cost.
- **Legal Fees:** For contract drafting, dispute resolution, membership votes, etc.
- **Loan Costs:** Closing costs, interest charges, etc.
- **Management Company Fees:** Increased workload may increase management fees.
- **Engineering Fees:** For construction observation and administration.
- **Building Permit Fees:** Typically 3%-4% of the project cost.

An experienced engineer will give guidance regarding budgetary costs.

Construction Phase Services

PRE-CONSTRUCTION

An engineer can conduct a preliminary meeting to review staging, sequencing, and resident notifications.

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The engineer can help management draft a letter to the residents describing how to prepare for and what to expect during the project.

Working with the contractor, an engineer can ensure all required submittals are received and assist with the permitting process.

Prior to the start of work, an engineer can gather pre-construction documentation, like photographing existing conditions, which can help with potential damage claims.

CONSTRUCTION OBSERVATION

On-site engineers, either part- or full-time, protect the association from costly issues by reporting on compliance with specifications and industry standards. A qualified engineer will provide limits of repair work and monitor quantities of unit price work. They can respond quickly to unforeseen conditions, preventing undue delays, and conduct weekly project meetings, keeping the project team up to date on the project status.

CONSTRUCTION ADMINISTRATION

Engineers review contractor invoices to prevent getting overcharged or getting charged for work that was not performed. The engineer can prepare and submit payment recommendations and budget updates to management.

Project Closeout

A project doesn't end when construction ends; there are punch list items to complete, permits to close, warranty documents to collect, and final payments to make. An engineer can help the association button up the project, and prepare for the future by, for example, gathering documentation from the contractor in the event that a warranty claim needs to be made, or collecting equipment manuals and maintenance requirements. The engineer will confirm completion of work before releasing final payment.

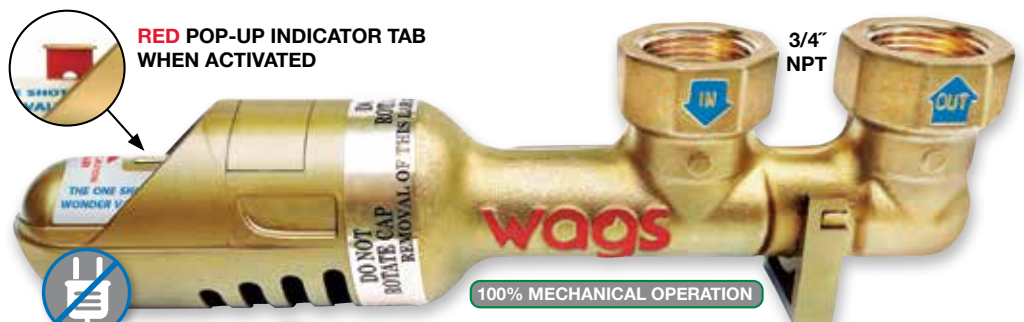
Case Study

An engineering firm was hired for part-time construction services for a pavement mill and overlay project. Without an initial engineering evaluation, the association relied on a contractor's proposal for the scope of work, which was missing items that are included in the engineering firm's typical specifications.

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During construction, the contractor was going to pave over areas of failed pavement base layers that were identified by the engineer on site. With their original budget in mind, the association declined to repair many of the areas, except one large area due to the severity of the failure.

"Proper planning could have avoided these issues."

Engineering intervention prevented premature failure of a large area of the new pavement and a substantial warranty claim.

It was also recommended that properly designed speed humps replace the existing speed bumps (there is a big difference between bumps and humps!), but the association proceeded with the contractor's scope to replace the existing speed bumps in kind. After one winter, every speed bump was damaged by snow plowing operations and required replacement. The contractor replaced them at no cost this time; however, they were reinstalled the same way, which will likely result in similar damage this winter.

Proper planning could have avoided these issues. If a program was developed prior to the start of the project, the existing condition of the base layers would have been better understood. With this knowledge and detailed specifications, the project would have resulted in a durable, long-lasting roadway. Unfortunately, the association ended up with a roadway with a reduced useful life (meaning increased maintenance costs and another pavement project sooner than expected) due to lack of design and improper installation. ■

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