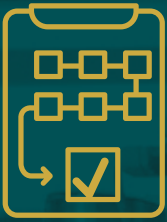


What goes into the cost of water infrastructure

Oftentimes when we talk about infrastructure costs we are really only thinking about the construction costs. However, there are actually many phases that infrastructure goes through during its life-cycle, and each of those phases has costs associated with it. There are also inefficiencies that can be associated with each of these phases that can add further costs. Let's explore the phases of the infrastructure's life cycle and their associated costs.

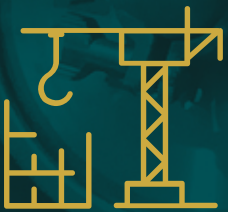
Planning



Planning phase costs include staff time required for collecting data, analyzing options, and developing guidelines for the project's needs. This cost is often overlooked but is necessary. Without good planning a project is much more likely to have costly problems later in its life.

Construction

The construction phase introduces multiple sources of expenses:



- Materials and labor expenses
- Contingency funds to cover unexpected needs during construction
- Construction inspection, costs for manuals, standard operating procedures, warranties and guarantees, and any necessary training
- Change order costs when construction changes are needed

Maintenance



Maintenance helps to keep the infrastructure in good working order. Unplanned maintenance is much more expensive than preventive maintenance. For infrastructure that is expected to last 100 or more years, maintenance can be the biggest expense over the infrastructure's life cycle.

Rehab, Replace & Dispose



Rehabilitation, replacement, and disposal all add costs over the life of the infrastructure. Careful evaluation is necessary to optimize these phases which leads us back to the design phase for new infrastructure.

Design

In the design phase the "how" questions must be answered and may require an engineer or consultant. This phase may also include costs for an environmental assessment, permitting, and land acquisition. Many mistakes and expenses can be avoided with careful plan review, and feedback from a variety of people within the system.



Operations

Operations costs include salaries for employees, electricity, and any type of operational costs such as chemicals, oil/grease, etc. Emergency operations typically cost more than standard operations but will be necessary at some point.



Repairs

Most infrastructure requires repair at some point in its life. Infrastructure can be repaired multiple times, only once, or even not at all before it makes more sense to replace it.



Water infrastructure costs are paid for by the customer and as a customer you should understand what you are paying for. To learn more about drinking water check out any of the links below.



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