

## Business Case Approach to Water and Wastewater Decisions

Carollo's business case study (BCS) provides our clients with an independent and objective review of investment decisions using life cycle costing and cost benefit analysis. The BCS identifies the "true" cost of project alternatives. Most importantly, Carollo's BCS provides the defensibility necessary to gain buy-in from elected officials, community members, and affected stakeholders.

Carollo has incorporated BCS methods throughout our engineering and planning practice. This approach is founded on "real world" quantitative and qualitative methods used ubiquitously throughout private enterprise, federal agencies, privatized utilities, and water and wastewater utilities in Australia and New Zealand. Most importantly, the BCS approach has won approval from Carollo's municipal clients.

### Critical Elements

Business case studies are based on tried methods. However, it is the study process that separates Carollo from other firms. This process includes the following six steps.

- ▼ **Assemble a BCS team.** Carollo will assemble a team of financial and engineering experts. We will also work with the municipal client to include staff and stakeholder representatives essential to the study.
- ▼ **Identify the project drivers and objectives.** The BCS team will work to identify all critical project drivers and objectives, answering up-front the question, "Why is this project being undertaken?"
- ▼ **Eliminate "non-viable" options.** Based on the drivers and objectives, projects or alternatives which do not meet stated criteria will be eliminated prior to beginning the analytical evaluation, saving time and money.
- ▼ **Quantify the full life-cycle costs.** Defining the full life-cycle costs of project alternatives is essential to developing accurate and defensible study recommendations. Among others, these costs might include capital costs, operations and maintenance costs, project lives and reinvestment costs, and environmental impacts or benefits.
- ▼ **Perform cost benefit analysis.** Carollo will perform a cost benefit analysis. This analytical process necessarily includes performing sensitivity analyses to account for risk. This includes risk of

fluctuations in capital costs or investment rates, environmental risk, risk of project failure, and risk of non-public acceptance.

- ▼ **Identify the recommended solution(s).** Incorporating sound engineering judgment and experience, Carollo will identify the project (or range of projects) which not only meets the financial and political objectives, but also provides the best engineering solution and minimizes the client's exposure to risk.

### What Does Carollo Offer Our Clients?

Carollo's BCSs can be implemented in concert with other Carollo services and products, including the Financial Planning Tool, the Master Plan Manager, and the Water/Wastewater Asset Manager. Further, we believe that our clients are integral in the evaluation process, ensuring they retain ownership in the results and recommendations. Finally, Carollo's BCSs are grounded in sound engineering principles. Many studies provide only "go" or "no-go" recommendations based on a benefits-to-costs ratio; however, the financial evaluation and net present value analysis are only part of the answer. The final determination must be based engineering expertise as it relates to risk and the scientific objectives.

### When to Perform Business Case Study?

A BCS can be undertaken at any time during the planning process. Prior to beginning a planning study, this decision method can be used to eliminate "non-viable" project alternatives, as well as define the scope of the engineering study, both reducing the study duration and costs. During the course of a planning study, a business case review can be used to evaluate and/or eliminate undesirable capital and operational options. Finally, following the completion of the planning study and prior to design, a BCS provides an independent and objective review of the study recommendations and results.

"Dedicated to creative, responsive, quality solutions for those we serve."