Role: Joint creator of the DBO concept and lead member of the DBO team



Pioneering design, build, operate (DBO) solutions for large-scale water treatment in North America

Seattle's award winning treatment facilities for the Tolt and Cedar Rivers

Creating the highly innovate and economical DBO approach to create superb performance and savings of 30-40% over conventional approaches

"The savings from the Tolt River plant alone was comparable to the cost of new 60 story office building in downtown Seattle"

ReiterIWS Key Projects

Pioneering the DBO Approach to Water Treatment in North America



The Challenge and the Opportunity

- *In the mid-1990's the City of Seattle's Water Department was confronted with deferred capital needs in excess of $1 billion dollars*
- *One of the largest contributors to the City's CAPEX challenge was the need for more sophisticated treatment facilities on its two sources of water supply, the Tolt River and the Cedar River*
- *To meet this huge challenge, the City's water utility (Seattle Water and later, Seattle Public Utilities) drew on largely international experience and successes in devising alternative approaches to the traditional design-bid-build methodologies for procurement*
- *Seattle Water staff and a dedicated team of experts, devised an entirely new approach to large scale plant procurement -- now called the "Design-Build-Operate" or DBO approach. The approach was co-conceived by Jerry Gilbert and Paul Reiter*
- *The DBO approach draws on "Design-Build" and "Design-Operate synergies" to greatly improve performance, significantly reduce both first costs and operating costs, while at the same time taking advantage of low-cost public financing options*

"Seattle turned a very challenging problem into a very positive opportunity for customers and rate payers"

Pioneering the DBO Approach to Water Treatment in North America



Results – The Tolt River Plant

The City Council agreed to proceed with the DBO approach provided that all water quality objectives were met and the approach yielded a minimum of 15% saving in life cycle costs compared with the traditional design-bid-build approach

- *A competitive DBO process was launched for the design, construction and operations of the 120 MGD Tolt River Drinking Water Treatment plant, following careful preparation with the vendor community.*
- *The Tolt DBO RFP and procurement process:*
  - *Led to designer-led rather than constructor-led DBO consortia*
  - *RFP evaluated on performance-based outcomes rather than prescriptive-based criteria*
  - *Competition was encouraged via both technical innovation/competence (60% weight in RFP scoring) and life-cycle cost competition (40% weight in RFP scoring)*
- *Results for the Tolt Treatment Plant were:*
  - *A new standard in treatment plant performance*
  - *Water quality public health delivery exceeding local and EPA standards*
  - *Well-documented 40+% LCC savings compared to the base case (design-bid-build approach)*

"The savings from the Tolt River plant was comparable to the cost of new 60 story office building in downtown Seattle"

Pioneering the DBO Approach to Water Treatment in North America



Results – Cedar River Plant

A similar process for the development of the Cedar River Drinking Water Treatment Plant compared with the Tolt Treatment Plant was undertaken. (i.e., the City Council agreed to proceed with the DBO approach provided that all water quality objectives were met and the approach yielded a minimum of 15% saving in life cycle costs compared with the traditional design-bid-build approach)

- *Results for the Cedar River Treatment Plant were:*
  - *New technologies combining UV and Ozone treatment were proposed, test and implemented*
  - *Water quality public health delivery exceeding local and EPA standards*
  - *Documented 30+% savings in LCC compared to the base case (design-bid-build approach)*

General Observations

- *The "design-build" and "design-operate" synergies are powerful and pay dividends*
- *The status quo needs to be challenged and improved upon as part of normal business. The Tolt and Cedar cases illustrate the benefits of doing so*
- *Utilities have the ability and obligation to do this kind of original thinking everyday, on behalf of both their customers (the ratepayers) and their shareholders (usually citizens)*

"The savings and technical innovation seen through the Tolt and Cedar River Plants demonstrate what is possible via creative public-private collaborations.