



MONTEREY PENINSULA WATER SUPPLY PROJECT DESALINATION PLANT



CALIFORNIA
AMERICAN WATER

Value Engineering Study Presentation

July 10, 2014



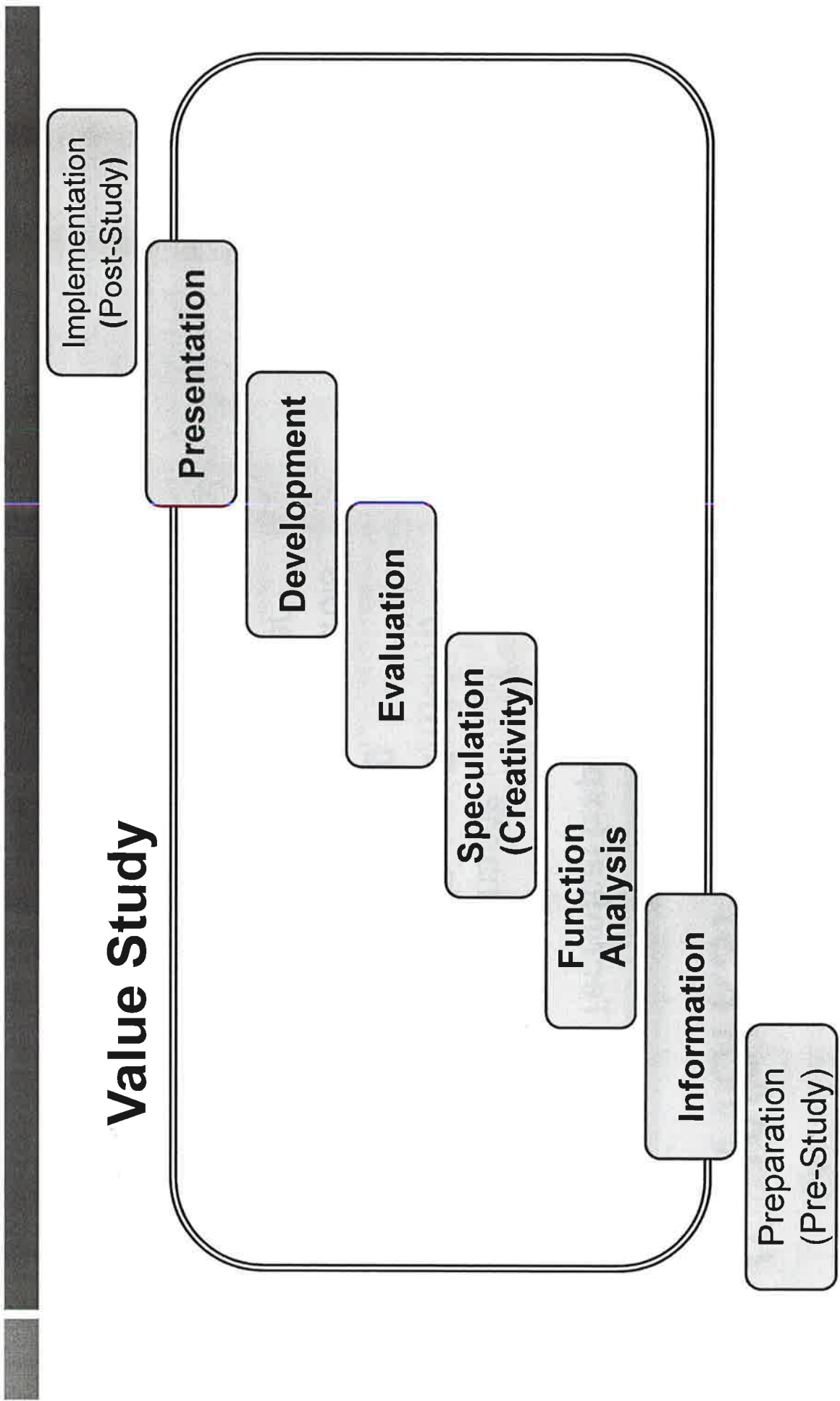
Purpose of Meeting / VE Scope

1. Report Preliminary Results of Desal Plant VE Study
2. Receive Public Comments on VE Study Analysis and Results
3. Discuss Next Steps and Path Forward for VE Results
4. Objective Review of Desal Plant Portion of MPWSP
5. Identify and Develop Value-Enhancing Alternatives to the 30% Design Submittal

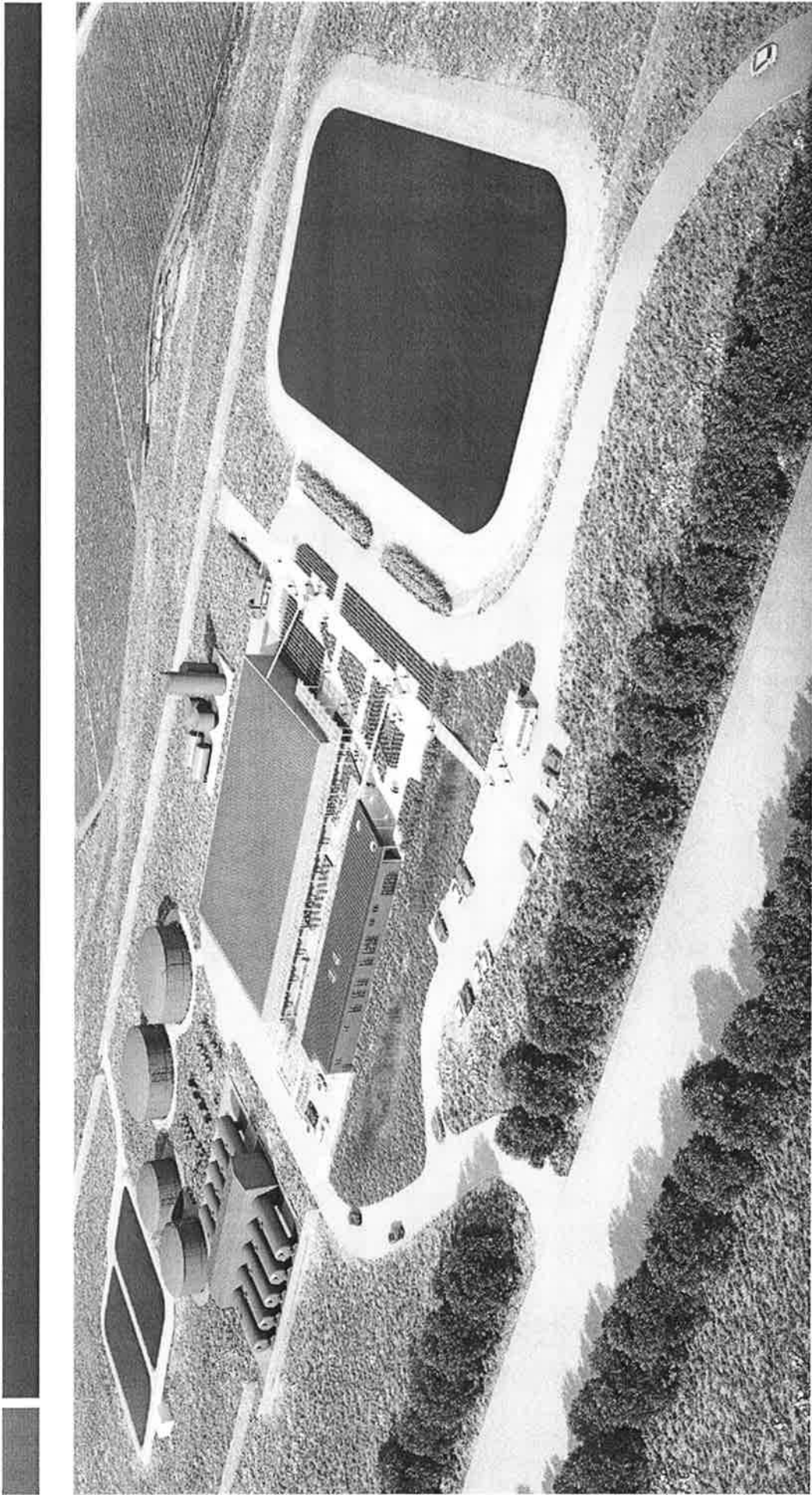
VE Workshop Participants

- **Independent Technical Experts from HDR and Water Globe**
 - Architecture
 - Operations/Maintenance
 - Sustainability (LEED and Envision)
 - Civil/Structural Engineering
 - Electrical / Instrumentation & Controls
 - Water Treatment Process Engineer
- **California American Water**
 - Plant Operations and Maintenance
 - Engineering
- **Monterey Peninsula Regional Water Authority**
- **Monterey Peninsula Water Management District**
- **Briefing and Support from Project D-B Team (CDM Smith)**

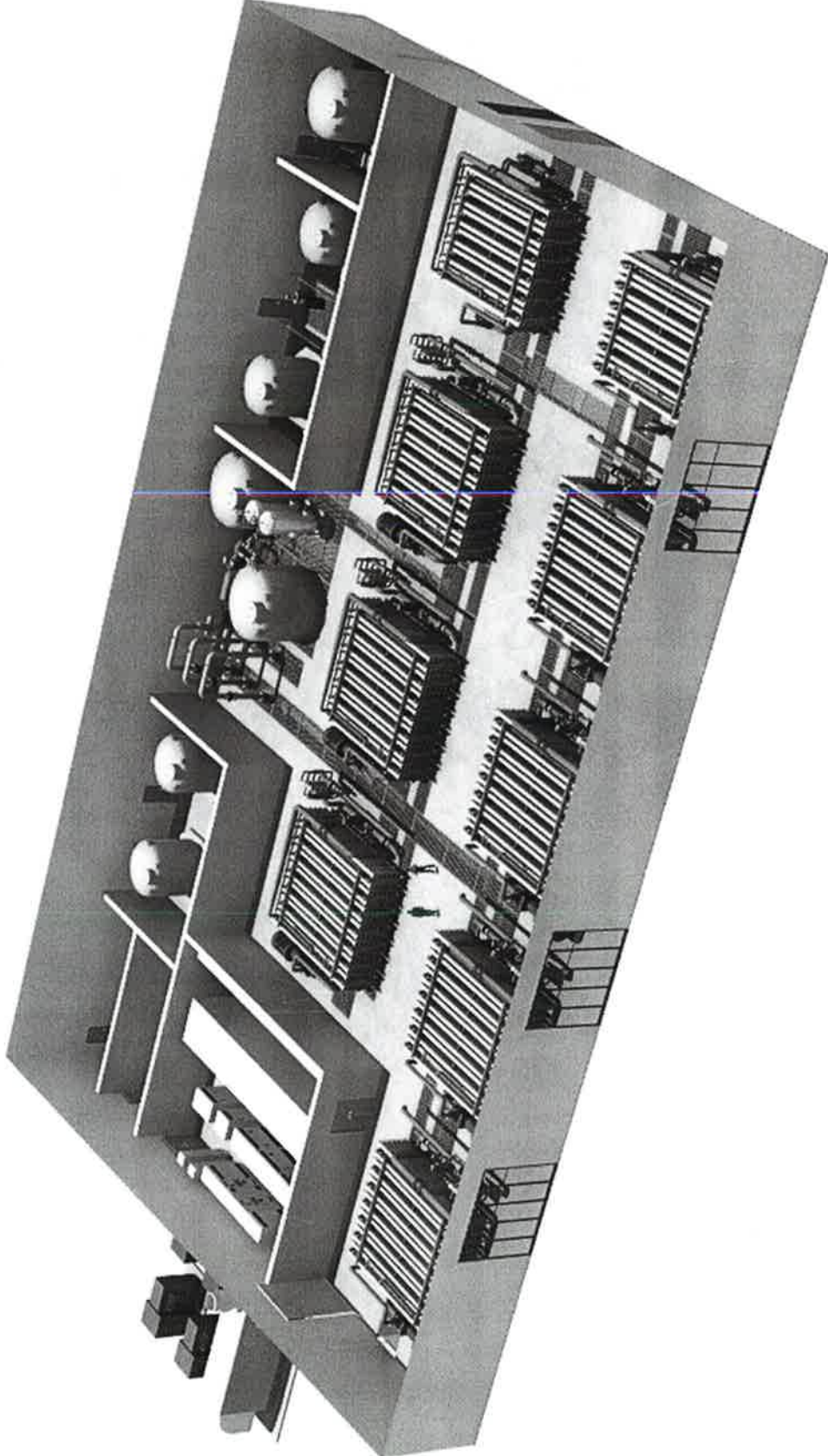
VE Process



Project Overview



R.O. Building Schematic

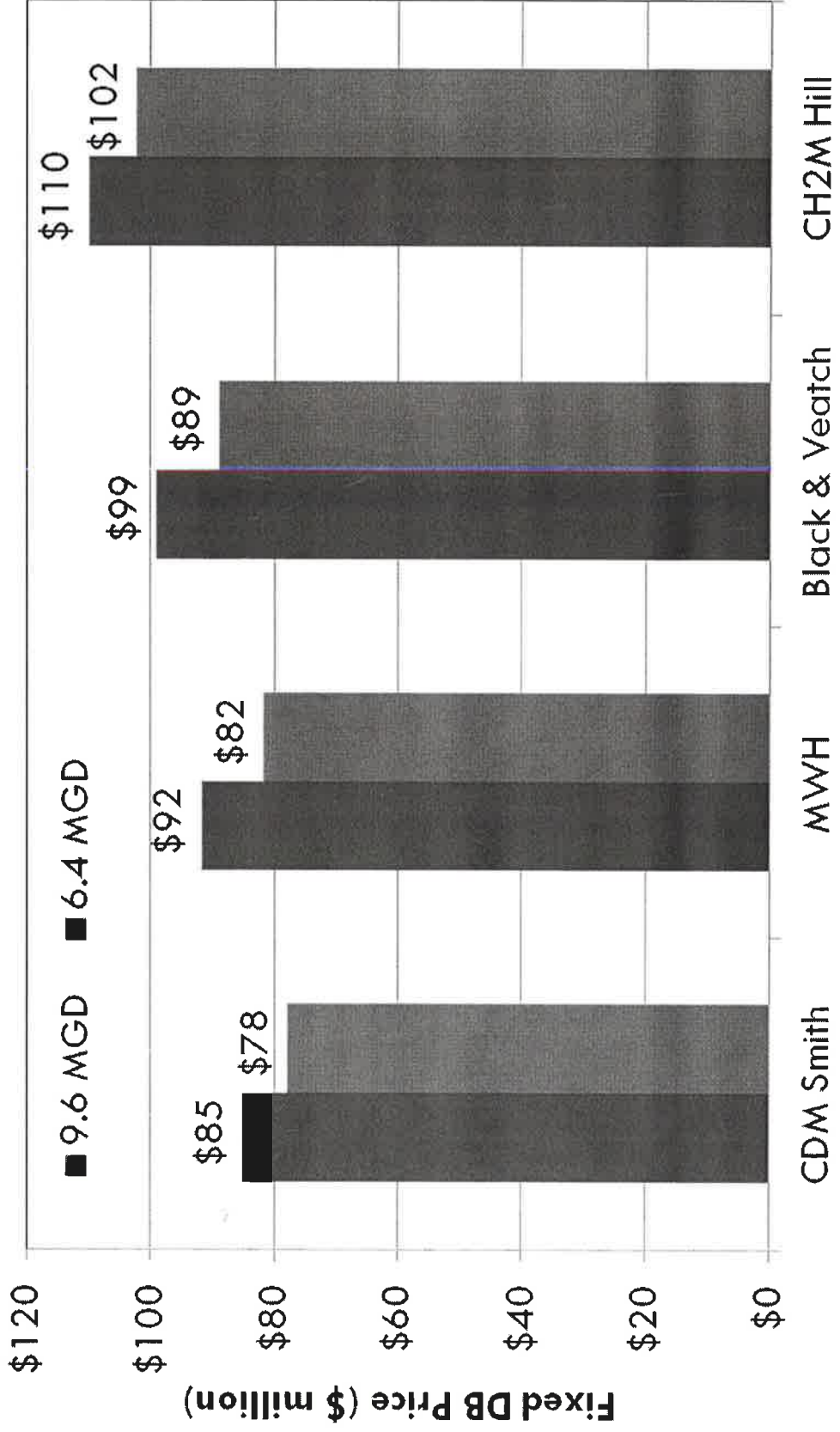


Prescriptive DB RFP

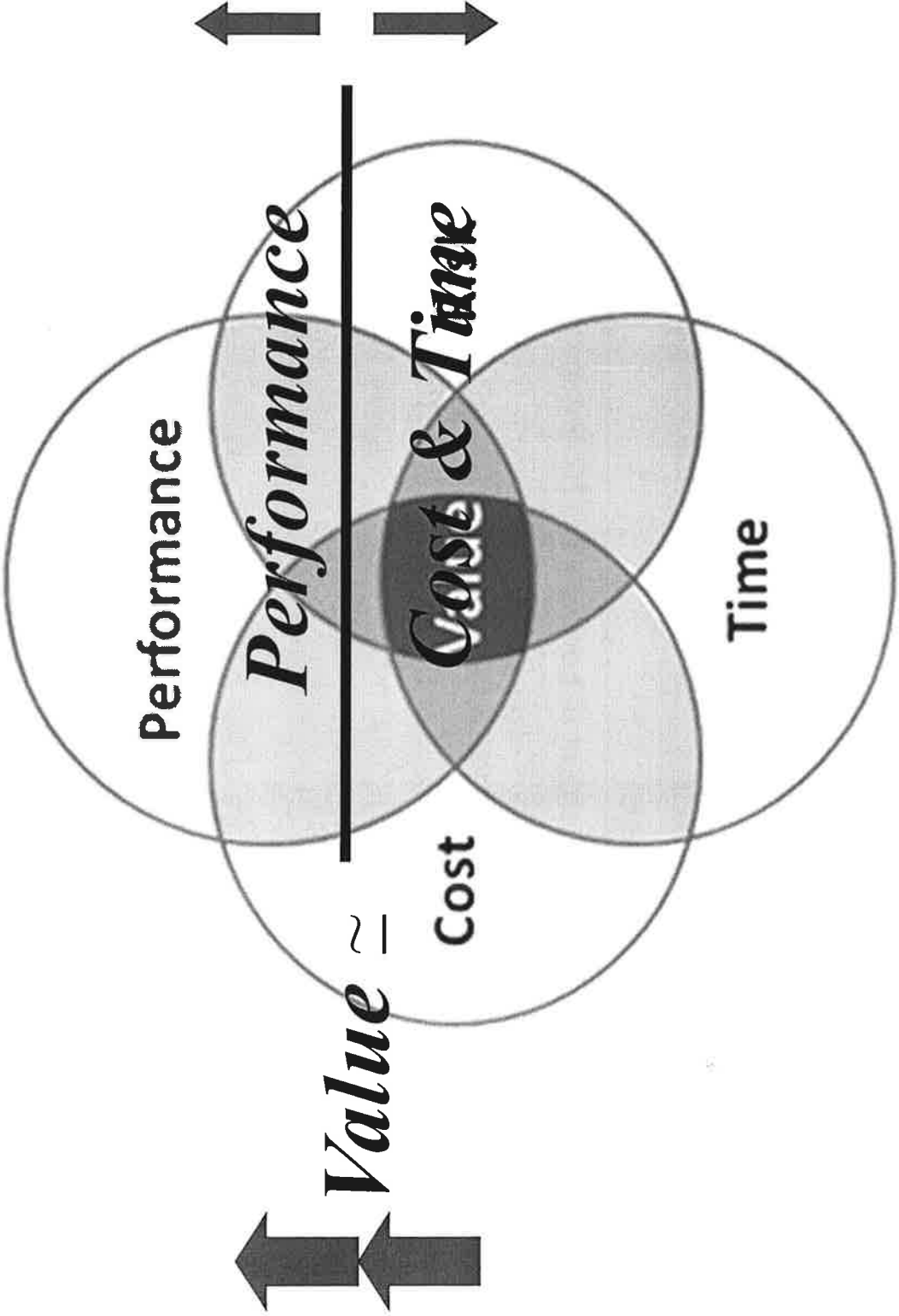
Requirements

- Production Capacity
- Treatment Process
- Design Criteria
- Materials
- Approved Equipment Vendors
- Process and Treated Water Quality Requirements
- Energy Use Requirements
- Sustainability Goals
- American Water Safety Initiative

DB Prices from Proposals



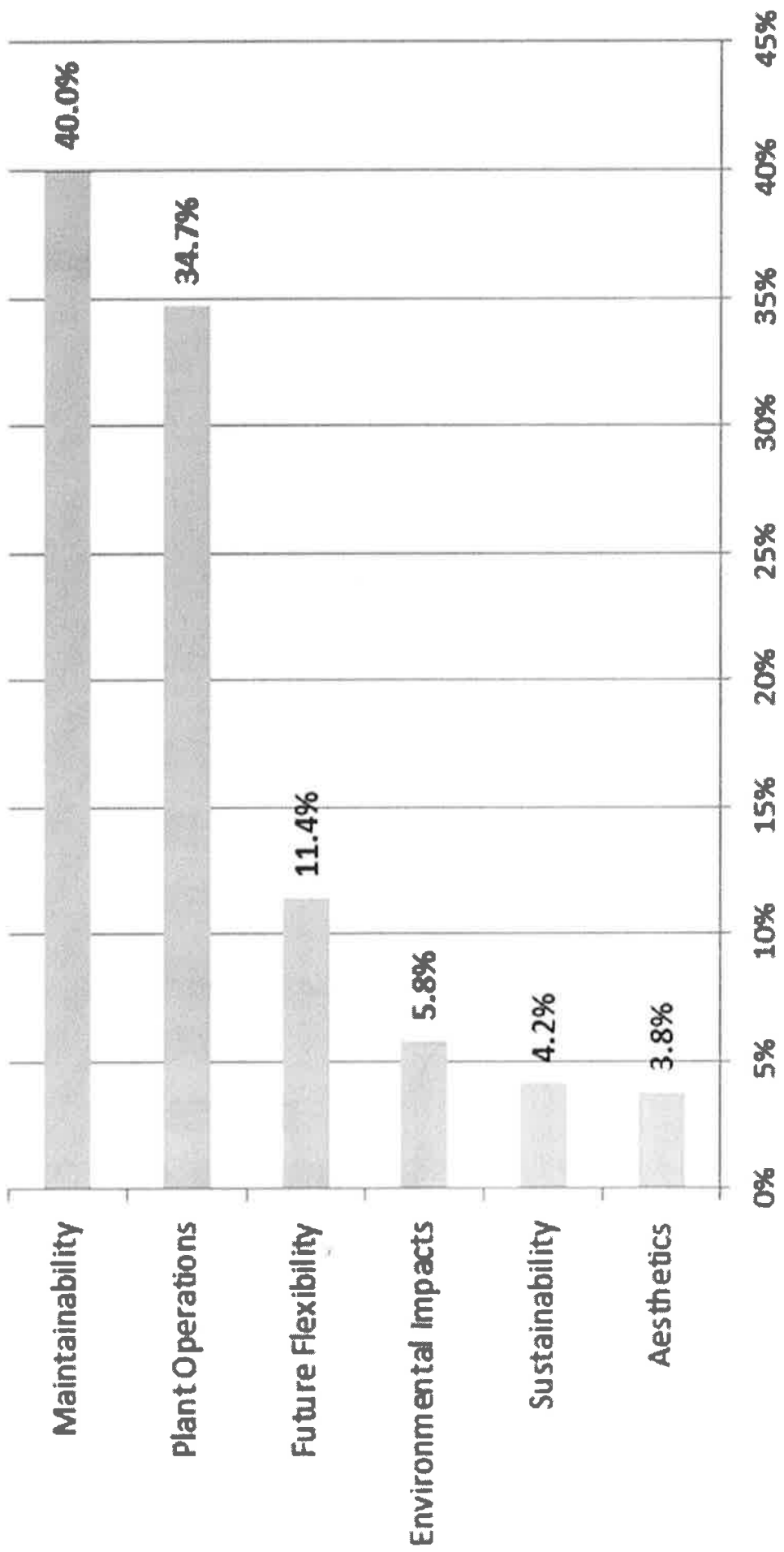
Intersection of Value



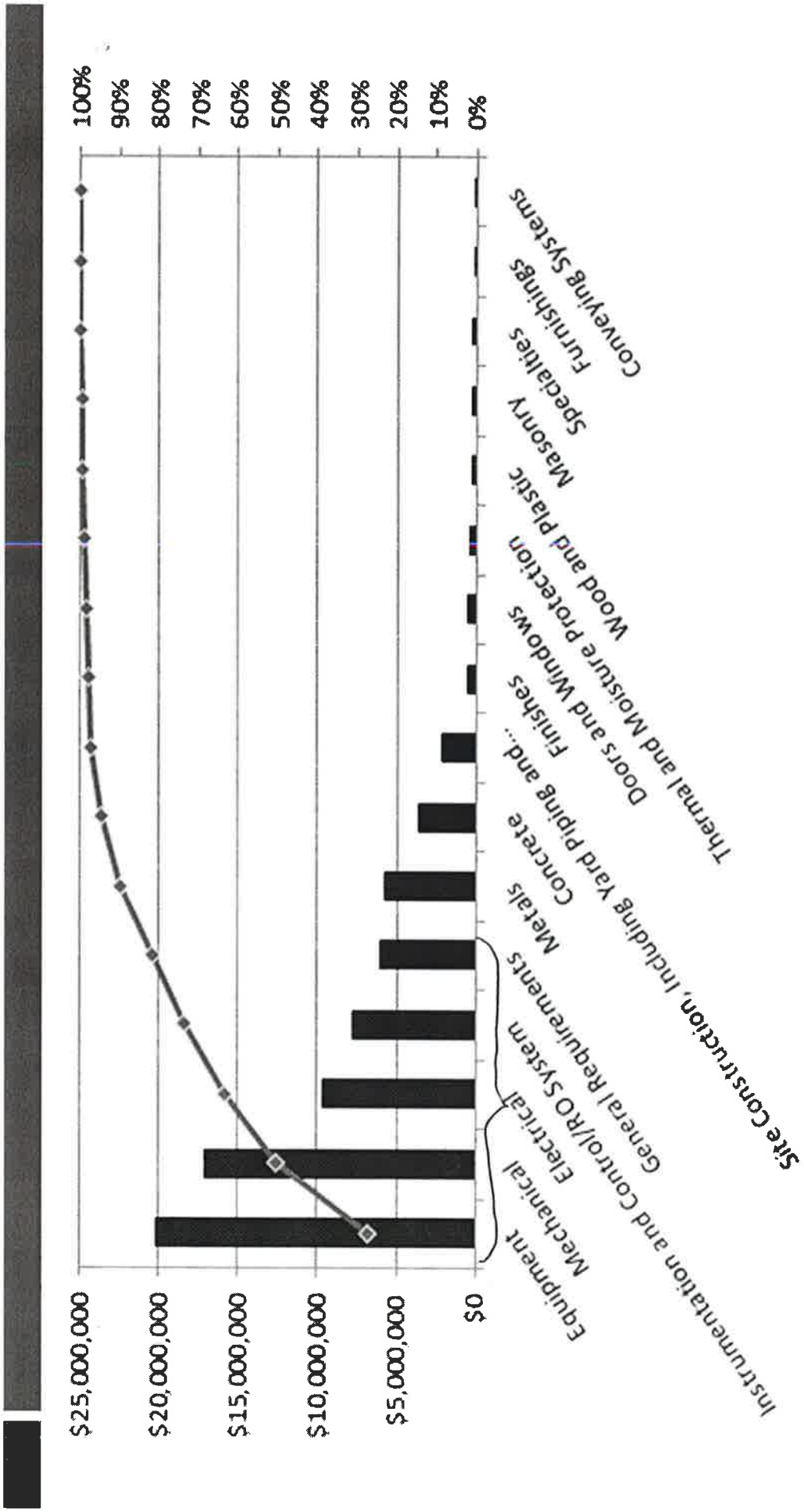
Performance Attributes

Attribute	Description
Plant Operations	<p>An assessment of how well the facility spaces meet their intended function and the objectives of the overall program as they relate to efficient, safe, and secure plant operations.</p>
Aesthetics	<p>An assessment of the facility's aesthetic appeal. This attribute considers how well it responds to the site, surrounding structures, the locale and the building's function. Attribute also considers the ability of the project to accommodate visitations and tours of the plant processes.</p>
Maintainability	<p>A measure of the facility's serviceability (ease of conducting scheduled inspections and servicing) and reparability (ease of restoring or replacing failed systems) over a given service life.</p>
Future Flexibility	<p>An assessment of the flexibility and adaptability of the program spaces and equipment to meet future program needs and changes in technology.</p>
Sustainability	<p>An assessment of the sustainability of the project in its efforts to reduce consumption of non-renewable resources, minimize waste, and create healthy, productive environments.</p>
Environmental Impacts	<p>An assessment of the permanent impacts to the environment, including ecological (i.e., flora, fauna, air quality, water quality, visual, noise); and impacts to cultural, recreational, and historic resources.</p>

Performance Attribute Priorities



Pareto Cost Model



■ Cost ◆ Cumulative Percent

VE Alternatives & Strategies

- **33 VE Alternatives***
 - Cost Savings and/or Performance Improvements
- **14 Design Suggestions***
 - Non-quantifiable Comments on Design Documents
 - Technical Review of Design in Development
- **VE Strategy (Combination of Alternatives)**
 - 15 VE Alternatives Selected as Priority Items that Enhance Value

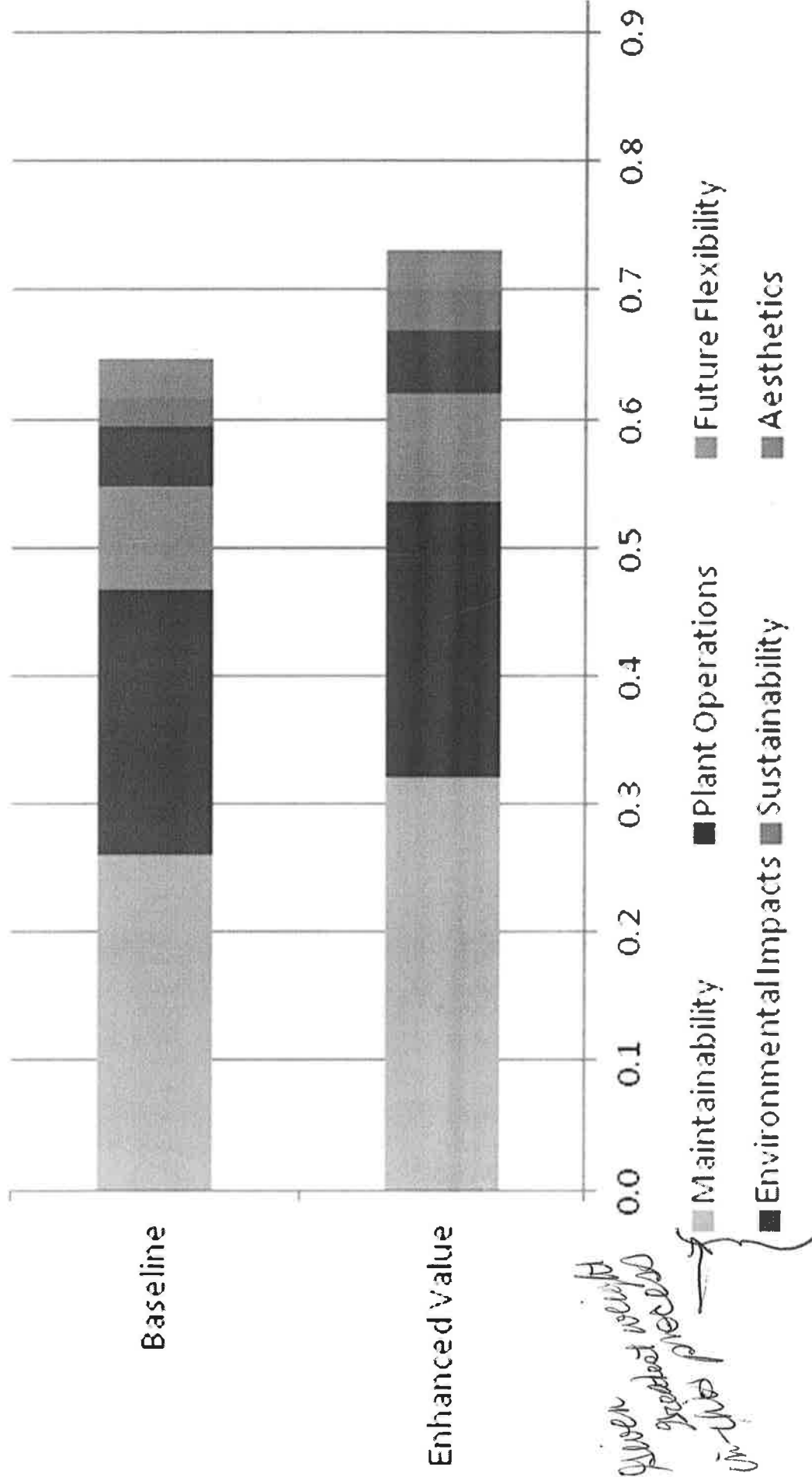
*Alternatives and Design Suggestions still being developed.
Will be documented in VE Study Report.

VE Analysis and Focus Points

- Treatment Process Improvements**
 - Pre-Treatment and Pathogen Removal
 - Reverse Osmosis Process
 - Post-Treatment and Discharge
- Equipment Layout Improvements**
- Maintainability and Sustainability Considerations**
- Building Design Solution Improvements**
 - Civil/Structural
 - Architecture and Code
 - Electrical
- Construction and Scheduling / Risk Mitigation**

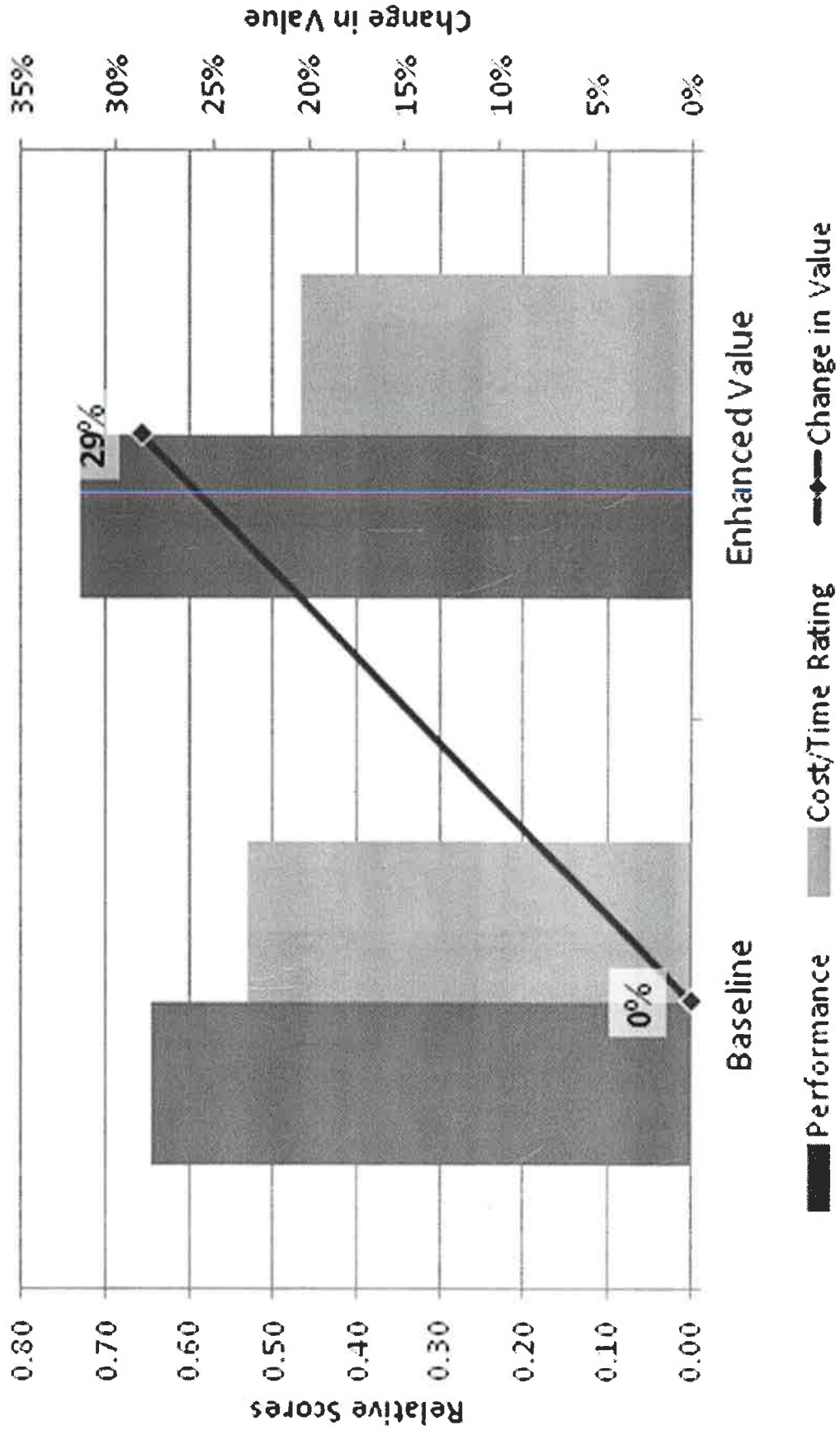
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Performance Comparison



Value Comparison

$$V_F = \frac{P}{(C+S)}$$



Next Steps

- Incorporate Public Comments Received
- Complete and Submit VE Study Report
 - Report will be available to Public
- * □ TAC/Project & Design Team Review of VE Results and Alts
- Implementation Decisions

