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Performance Specifications

Owners have a very wide spectrum of experience with the procurement, design and construction best practices in design-build and operations aspects of public-private partnerships (P3s). The spectrum of owner experience on one end includes owners that lack any practical experience that helps guide them to a successful design-build P3 outcome. At the other end of the spectrum are more experienced owners who have used P3s to deliver complex projects and have the benefit of industry experience and lessons learned.

An owner pursing a P3 objectively is seeking to create a collaborative and innovative project because they recognize the benefits of engaging construction expertise early in the development of a design concept's. The owner has also recognized that the value of having a private counterparty assume much of the performance risks for the project assets can be a highly tangible value. However, there is great variance in the application of best practices in the design-build based P3 procurement process, especially as it pertains to the development of a project's performance requirements and the appropriate substantiation metrics necessary to optimize the advantages of a P3. It is a fundamental imperative for a P3's success that the procurement and contract documents adequately and clearly define the expected level of quality desired and the performance requirements for the project's facilities.

P3s are most frequently solicited on a qualifications-based and "Best Value Selections" vs. a traditional design-bid-build project delivery, which involves a constructor's fixed price bid to build a facility based upon a design engineer's defined set of plans and detailed technical specification. In lieu of detailed plans and technical specifications, P3s are more typically solicited based upon a project definition and performance specifications. This procurement approach can be highly outcome oriented, articulating only the desired performance outcomes vs. the contractor needing only to comply with the designer's plans and specifications (notwithstanding the resultant performance of the project assets). Owners typically have much more familiarity with traditional design-bid-build project deliveries and the development and use of detailed engineering plans and technical specifications (also known as Prescriptive Specifications). Therefore, it is very important to carefully understand and consider the fundamental principles and best practices for establishing the performance specifications, design, construction requirements and acceptance conditions from both an owner's perspective and that of the design-builder when pursuing a P3.

A qualified owner's technical advisors can be particularly helpful in selecting and developing design, construction and operations performance requirements and identifying the industry standards applicable to a successful P3 project. Figure 1 that follows illustrates the basic relationship between the levels of innovation that design-build contacting teams have in a P3 in relationship to the extent of prescriptive vs performance-based specification in the P3 service agreement. If all of the service agreement's requirements are prescriptive, then the P3 is in essence a bid to deliver a highly defined asset. If the specifications are predominantly performance based and outcome focused, then the design-build contacting teams will have a far greater opportunity to be innovative and better able to deliver a Best Value Solution.

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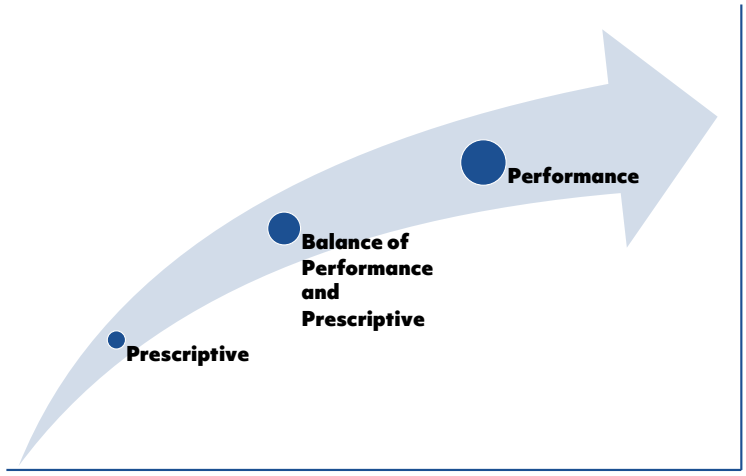

The Relationship of Prescriptive v Performance Specifications

Typically, in most P3s there is some combination of performance specifications and some prescriptive specifications. The extent of prescriptive specifications included is based primarily upon conforming or integrating the project assets delivered into the owner's overall systems and operations.

PERFORMANCE SPECIFICATIONS EXAMPLES

The following is an example of a water quality performance standard that would be applicable to a new brackish groundwater treatment plant. It includes a raw water quality "window" establishing the relevant key boundaries on the acceptability of the raw brackish well water quality for the proposed treatment process and the applicable performance requirements for the treated water quality. This project example also included additional performance standards for water delivery volume and minimum pressure, RO treatment process efficiency (minimum RO recovery) and limits on allowable hydraulic transients to avoid the operator damaging the downstream distribution pipeline network. Collectively, these performance standards would govern the production requirements of the delivered water treatment plant.

Performance Guarantees	The service contract provides four key performance guarantees: water treatment, water delivery, production efficiency and hydraulic transients.
Water Treatment Guarantee	The company will operate the plant so as to produce treated water from untreated water in compliance with the requirements of current regulatory standards. In addition, the company will operate the plant so as to produce treated water from untreated water in compliance with the additional finished water quality requirements contained in Appendix 1.

"Performance Guarantees" means the guarantees of performance made by the company set forth in this service contract and the appendices, including the water treatment guarantee, the water delivery guarantee, the finished water pressure guarantees, the RO process recovery guarantee, and the environmental guarantees set forth in Article 1 and Appendix 1.

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WATER TREATMENT GUARANTEE

Applicable Law Limits

Except to the extent relieved for uncontrollable circumstances, the company shall operate the project on a continuous, uninterrupted 24-hour per day, seven-day per week basis so as to produce finished water from raw water in compliance with the requirements of applicable law. In no event shall the company deliver finished water that is not in compliance with the requirements of applicable law.

Additional Finished Water Quality Requirements

In addition to its obligations to comply with the finished water requirements imposed by applicable law as provided in subsection (A) of this section and except to the extent relieved for uncontrollable circumstances, the company shall treat raw water and produce and distribute finished water in compliance with the contract requirements set forth in Appendix 1 (the "additional finished water quality requirements").

Appendix 1

PERFORMANCE GUARANTEE REQUIREMENTS AND LIQUIDATED DAMAGES

Specified Raw Water Quality Parameters

The Company shall be entitled to Uncontrollable Circumstance relief as and to the extent provided in the Service Contract in the event that actual Raw Water quality parameters are (1) less than the Minimum Operational Limits defined in the following Table 1-1, or (2) greater than the Maximum Operational Limits defined in the following Table 1-1.

Parameter	Minimum Operational Limit	Maximum Operational Limit
Chloride (mg/L as Cl^-)	NA	5000
Silt Density Index (dimensionless)	NA	5
Sodium (mg/L as Na^+)	NA	3000
Total Dissolved Solids, mg/L	NA	10000
Temperature, °C	18	25
Turbidity, NTU	NA	1.0

1.2 FINISHED WATER

1.2.1 Finished Water Quality Standards

All Finished Water shall meet the standards required by the Water Treatment Guarantee as set forth in the Service Contract including the Primary and Secondary Standards delineated in Chapter 62-550 of the Florida Administrative Code ("FAC"). Table 1-2 herein defines the Additional Finished Water Quality Requirements to be included as part of the Water Treatment Guarantee.

Finished Water Quality Parameter	**Standard** [1]	**Unit**
Fluoride	0.8 (min) to 1.2 (max)	mg/L
pH	8.0 (min) to 9.3 (max)	Standard Units
Temperature	30 (max)	°C
Total Alkalinity	60 (min)	mg/L as $CaCO_3$
Calcium Hardness	60 (max)	mg/L as $CaCO_3$
Magnesium Hardness	30 (max)	mg/L as $CaCO_3$
Total Hardness	60 (max)	mg/L as $CaCO_3$
Chloride	50 (max)	mg/L as Cl^-
Color	5 (max)	Color Units
Sodium	40 (max)	mg/L as Na^+
Sulfate	10 (max)	mg/L as SO^4
Total Dissolved Solids	250 (max)	mg/L
Total Organic Carbon	5 (max)	mg/L
Total Sulfides	0.1 (max)	mg/L as S^-
Turbidity		
Odor	3.0)	TON
Langlier Saturation Index (LSI)	Not less than 0.0 [1]	Dimensionless
Poly/orthophosphate Corrosion Inhibitor(	1.0 (min) to 2.0 (max)	mg/L

[1] If a standard is not listed in this Table 1-2, the federal and State drinking water standards shall apply.