Collaborative Delivery Differences and Procurement

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WATER DESIGN-BUILD COUNCIL

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Water Design-Build Council

Who We Are . . . .

A non-profit educational association established in 2005.
Purpose: to help owners and industry practitioners understand the best practices for use in design-build delivery methods for the WATER infrastructure.
Income is solely dedicated to research, education and outreach.

Our Mission…

Advancing design-build delivery methods to transform the water industry—through collaborative thought leadership and education, supported by research.

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Each member firm designates a representative and alternate to the Board

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Advises WDBC in the advancement of design-build delivery methods through communication of industry trends, lessons learned, and advocacy of best practices

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WDBC Education Platform

- Original Research
- Handbook, 4th Edition-2019 Update
- Procurement Guides
  - CMAR
  - Progressive Design-Build (PDB)
  - Fixed-Price Design Build (FPDB)
- Publications, Community Forums, and Blogs
- DBIA Partnership
  - Best Practices
  - W/WW Specialty Conference
  - PDB Contract Document

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What People Want to Know

- Understanding the differences in the delivery methods
- Having a process to evaluate/select most suitable delivery method for projects
- How to allocate and manage risk-- who assumes what and who shares
- Procurement practices; how to address/manage WDB/MBE/SMB requirements
- Preparing make decisions to use and procurement
- Addressing impediments: unfamiliarity; resistance to change; state regulations; internal procurement practices; perceptions of risk

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Today's Topics

- Understanding Differences

  "Design-build" – "Collaborative Project Delivery" – WHY COLLABORATIVE?
- Procurement Nuances – Integrating Equipment/Suppliers
- Growth of Collaborative Project Delivery

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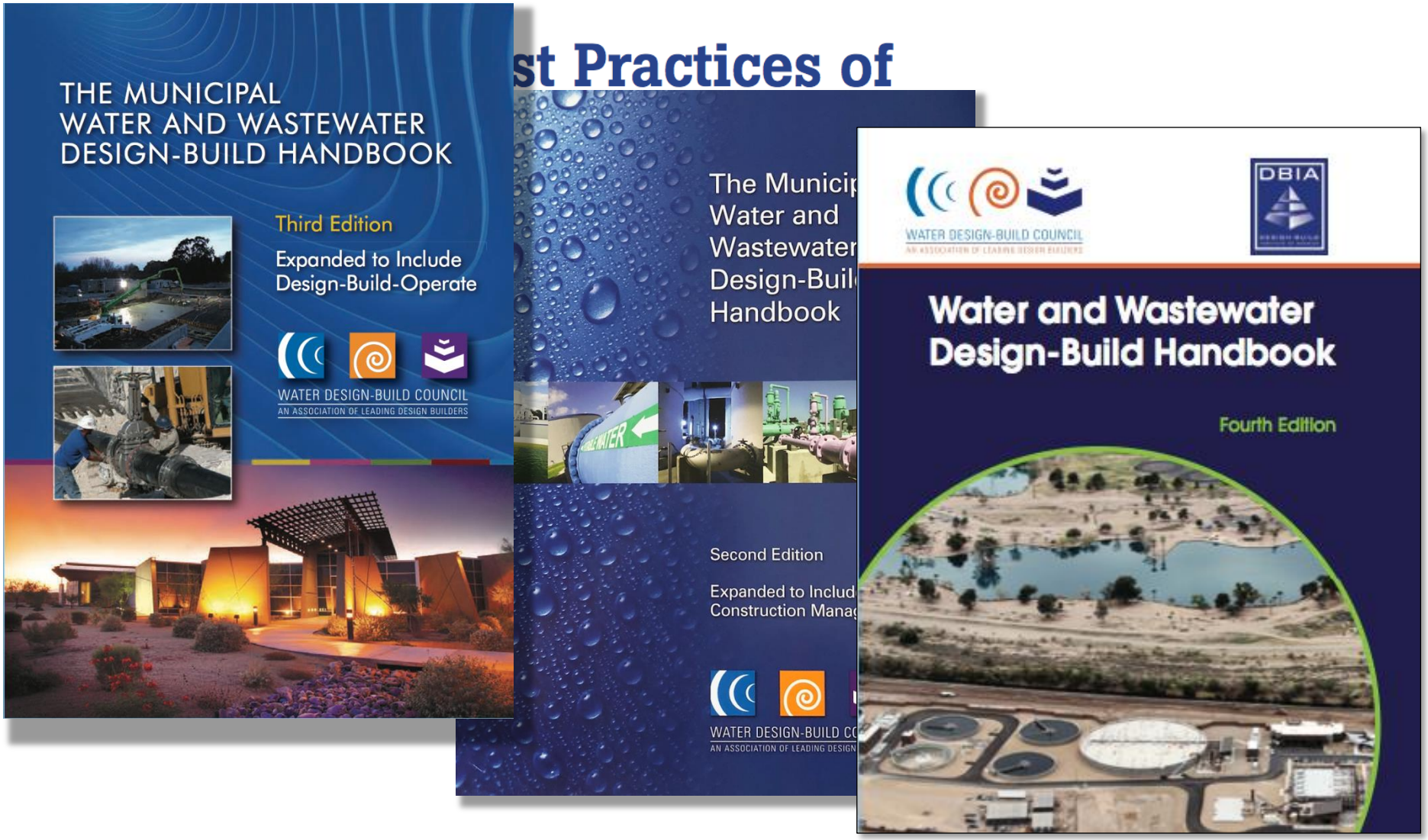
"~~Alternative~~ Collaborative Delivery"



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Collaborative Delivery Methods

Options

Construction Management at Risk (CMAR)

Design-Build

- Progressive Design-Build (PDB)
- Fixed Price Design-Build (FPDB)
  - Prescriptive versus Performance-based
- Design-Build-Operate (DBO)
- Public-Private Partnerships (P3)

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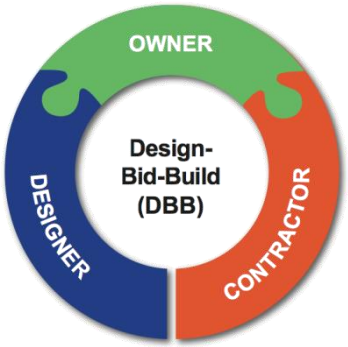
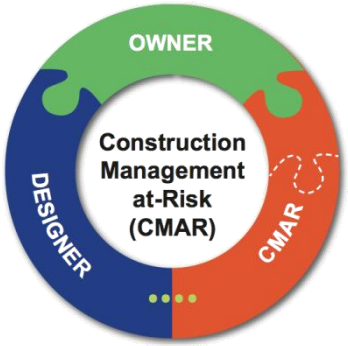
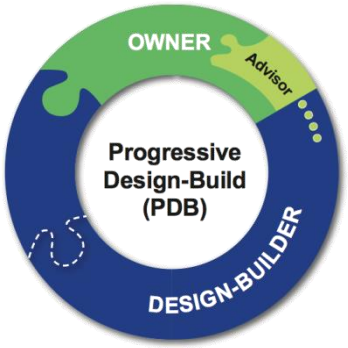
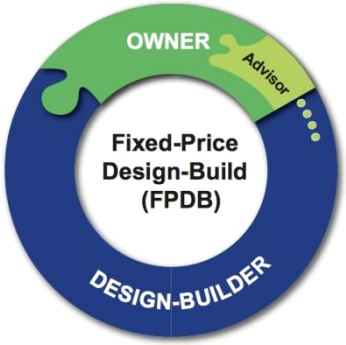
Spectrum of Project Delivery Options

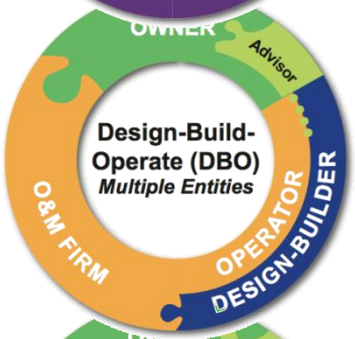
Traditional – Collaborative – Design-Build – DBO – P3

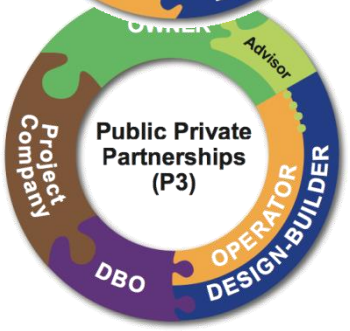


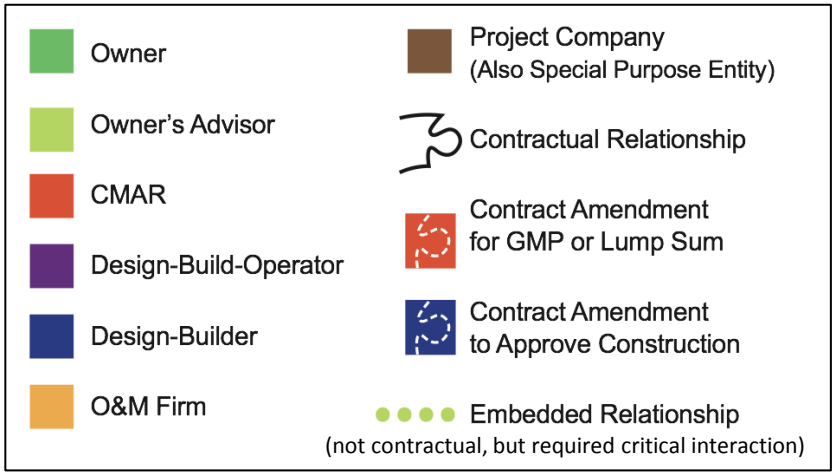












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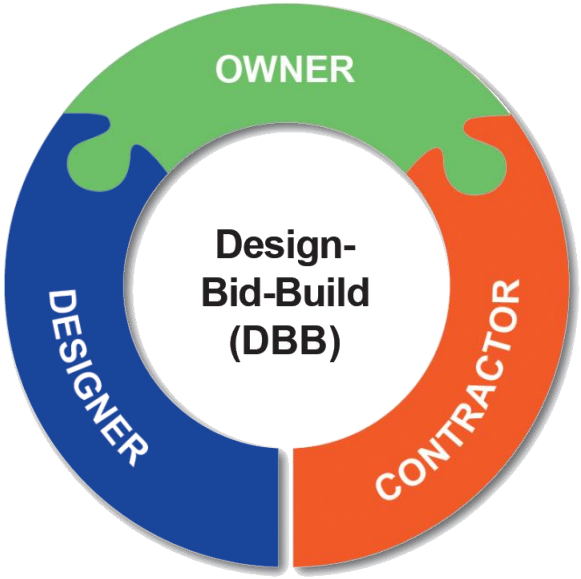
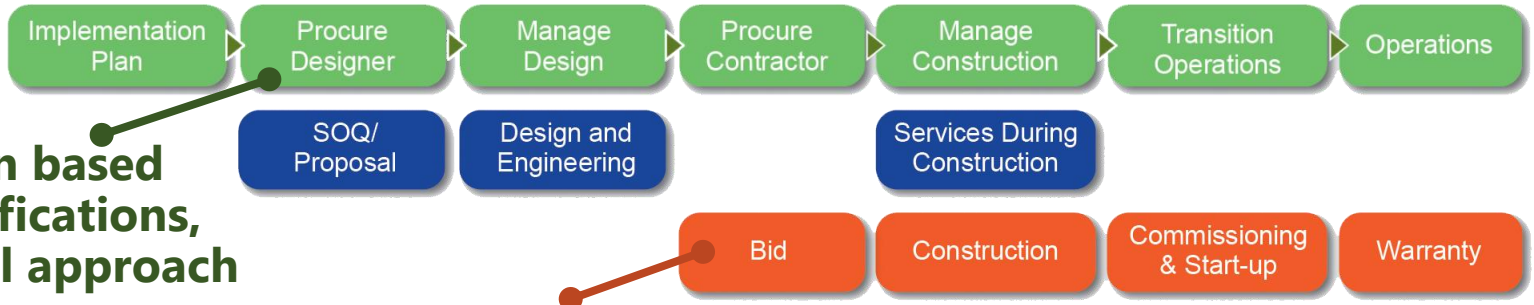
Baseline: Design-Bid-Build (DBB)

- **Established, defined, linear process that is proven to work**
- **Distinct milestones to ensure expected results**
- **Design completed before bidding**
- **Bidding completed before construction**
- **Traditional "cast" of participants**



The traditional project delivery system for public entities under which the owner holds separate contracts with a designer followed by a contractor.



Selection based on qualifications, technical approach

Selection based on price

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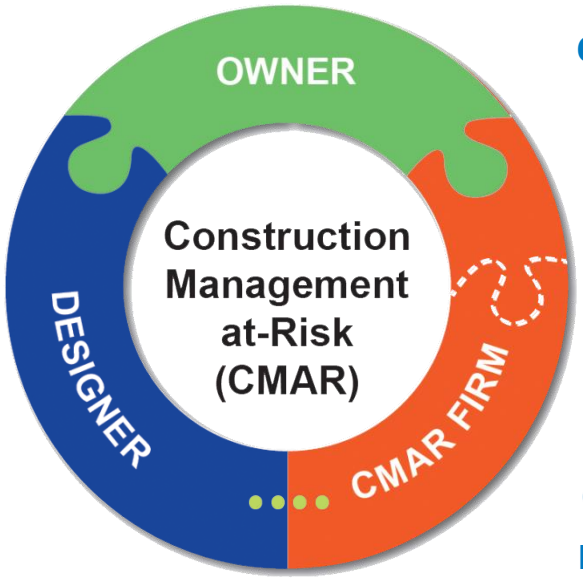
Construction Management-at-Risk (CMAR)

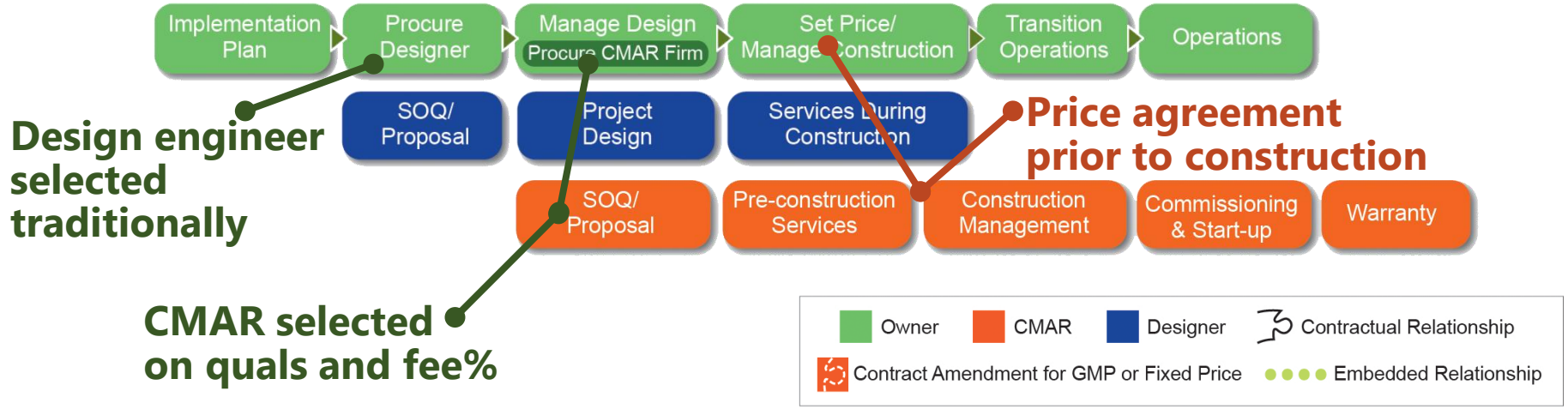
- Similar to traditional delivery, but can be faster
- Allows traditional selection of Consulting Engineer
- Design-build "lite" – with an "arranged marriage"
- Two contracts with Owner
- Design and construction pricing in parallel
- Familiar "cast" of participants



Separate contracts with a designer and a construction manager, but working together.

The design is performed in parallel with the construction planning and estimating.

Construction can start after mutual agreement on price.



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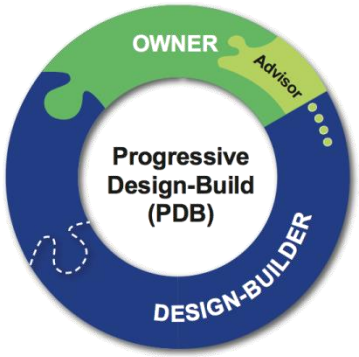
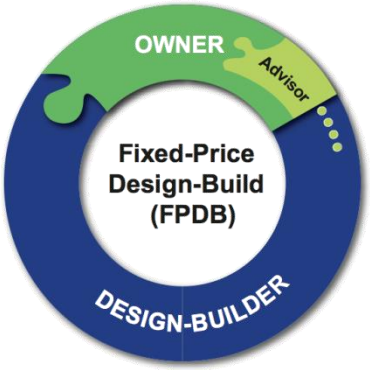
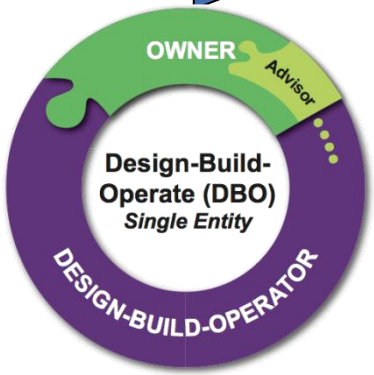
Design-Build (DB) Multiple Approaches

Collaborative: Design-Build – DBO – P3

A single entity or purpose-built team to deliver both design and construction through one contract with the owner.

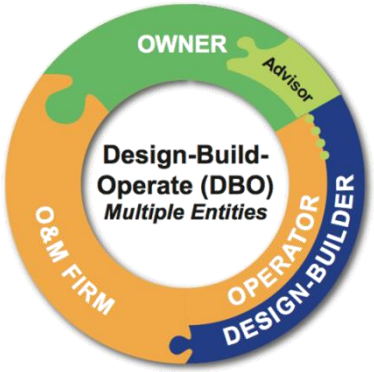






Commonly used variations of design-build:

- **Progressive (PDB)**
- **Fixed Price (FPDB)**
- **Design-Build-Operate (DBO)**
  - **Single Entity**
  - **Multiple Entities**
- **Public Private Partnerships (P3)**



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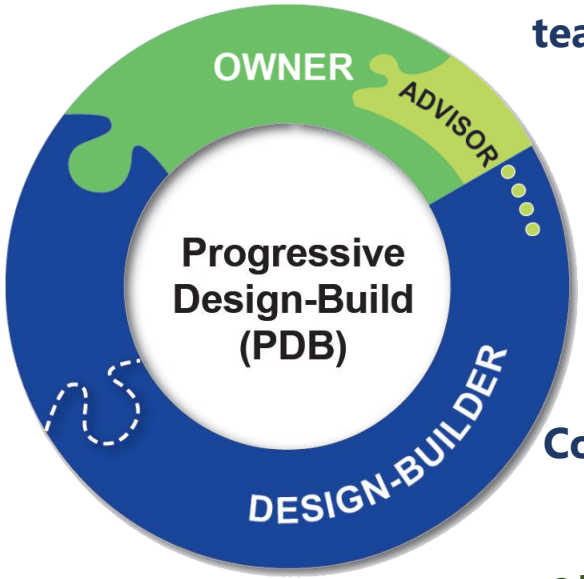
Progressive Design-Build (PDB)

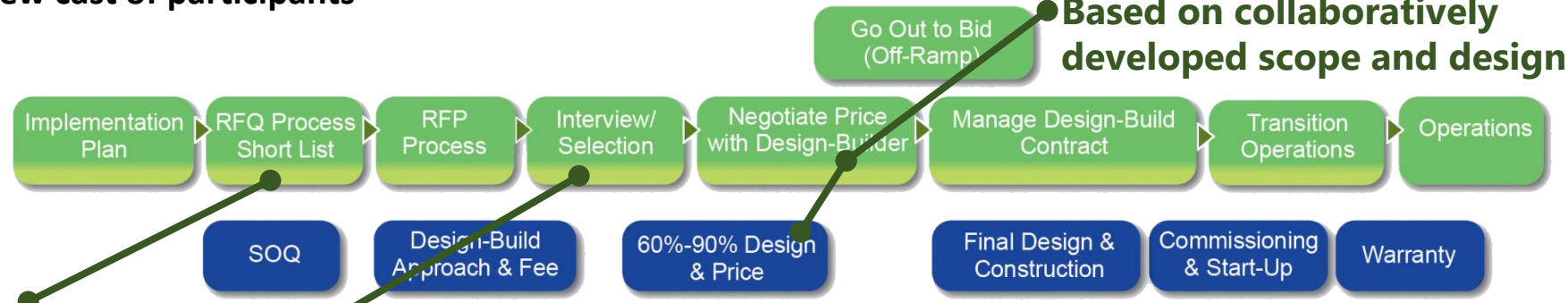
- **Concurrent activities reduce schedule – construction can start before design is complete**
- **Selection based on quals and fee, not a fixed price**
- **"Design to budget" via design and estimate iteration**
- **GMP, Lump Sum, and Shared Savings options**
- **Hard-bid "off-ramp" if construction pricing not acceptable**
- **New cast of participants**



A single entity or purpose-built team to deliver both Design and Construction via a single contract.

Design detail and construction estimate is developed progressively.

Construction starts after mutual agreement on price.



Based on collaboratively developed scope and design

Defines quals criteria; short lists qualified firms

Selection based on qualifications and fee %

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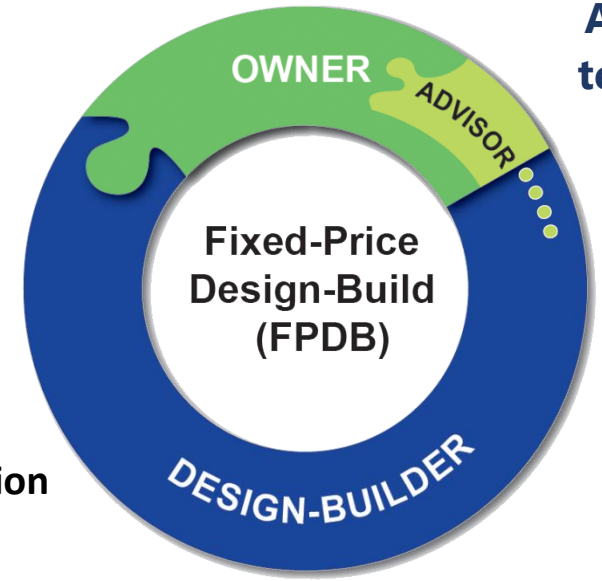
Fixed Price Design-Build (FPDB)

- **Multiple variations - two-phase selection is common**
- **Lengthy procurement process, reduced delivery time**
- **The Proposal is essentially a "Design Competition"**
- **May use performance-based criteria or prescriptive criteria – or usually a balance of both**
- **Construction price fixed at selection**
- **Variable "cast" of participants, depending on project complexity**

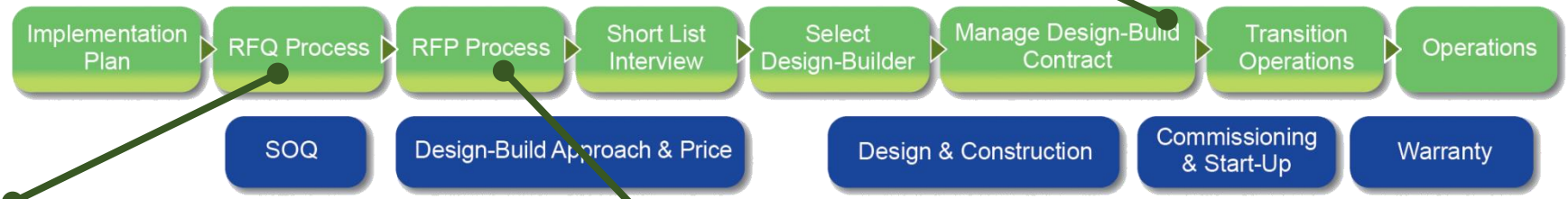


A single entity or purpose-built team to deliver both design and construction via a single contract.

Design detail and construction estimate provided as part of a fixed-price proposal.

Construction can start quickly after selection.

Performance-based and Prescriptive Criteria



Short list based on capability, capacity, experience, references

Selection based on "best value" (technical + price)

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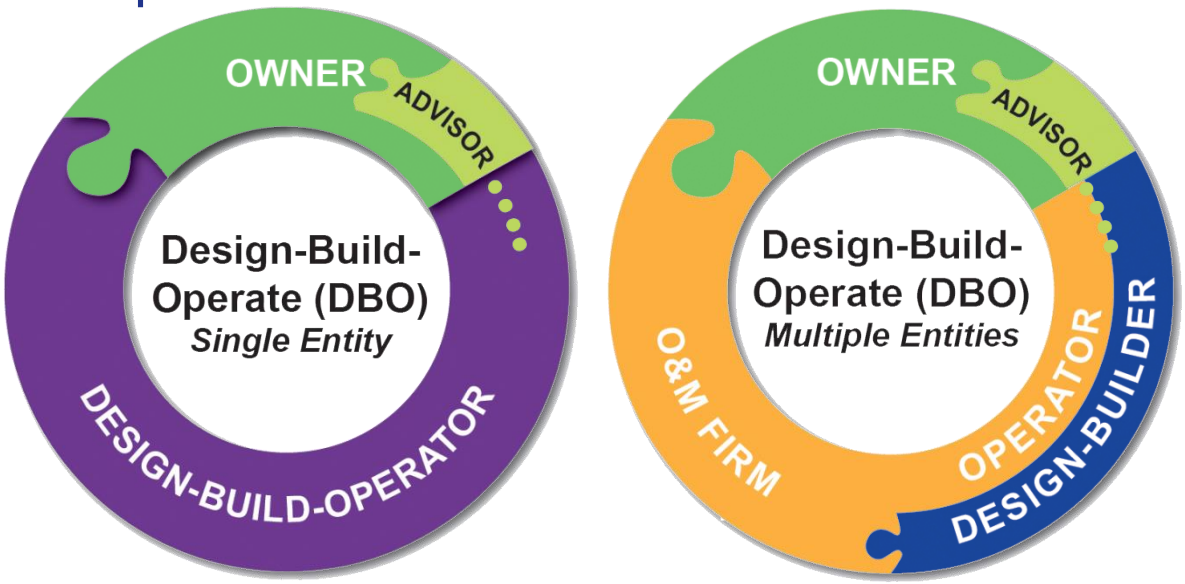
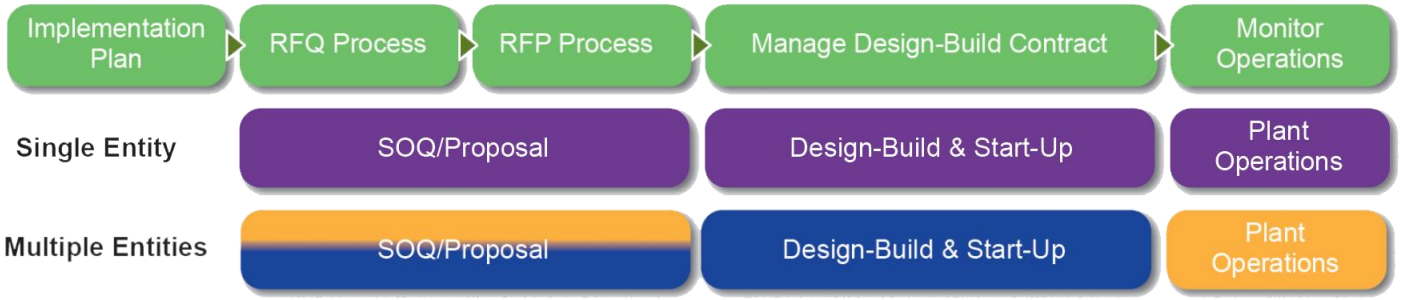
Design-Build-Operate (DBO)

Single or Multiple Entities





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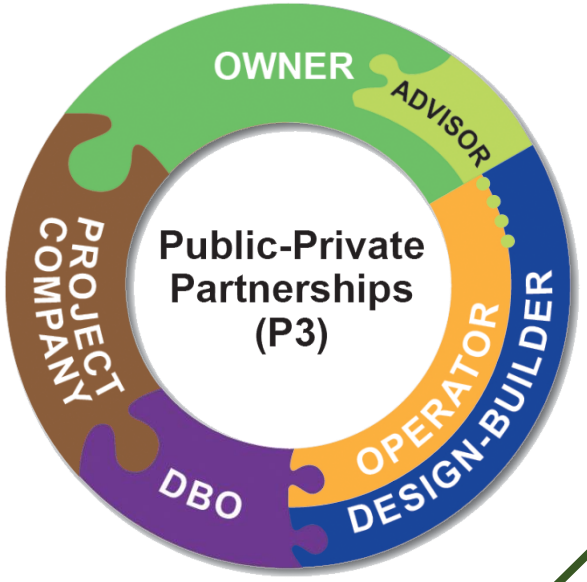
Public-Private-Partnership (P3)

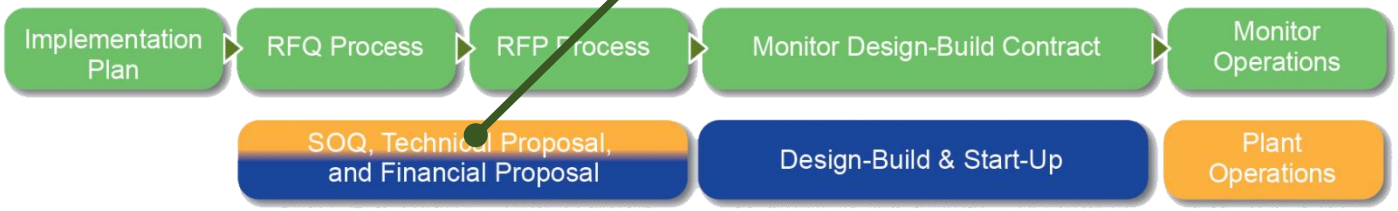
Design-Build with Financing and/or Operations



A purpose-built entity that often arranges financing and then oversees delivery of Design and Construction, typically followed by long-term Operations, all under a single Project Agreement.

Any variety of collaborative delivery approach can be embedded to support the P3 entity in design-build and operations delivery.

Any financing and development costs; design; construction; and O&M pricing provided as part of a fixed-price proposal.



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Procurement: Key Concepts

Overview and Scope

- Strategy – Tactics - Implementation

Role of the Owner's Advisor

- Legislative and policy requirements (state, local, individual)
- Owner, Owner Advisor, and third-party functions
- Spectrum of Owner Advisor support

Procurement Documents

- Key issues
- One- and Two-phase considerations
- Availability of templates, tools, best practices (WDBC, DBIA)
- Best Value Selection
- Typical RFQ/RFP Document Contents

Delivery Method Procurement

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Procurement Process "To Do" List

Project success
Strategy with a defined delivery approach

Delivery Model Selection
- Define project objectives
- Optimize risk transfer
- Define lifecycle considerations

Statutory and Regulatory Enablement
- Understand state and local statues
- Apply procurement regulations and policies
- Understand market precedent

Technical and Permitting Requirements
- Define project scope
- Accommodate permitting constraints
- Balance innovation and prescription

Financial Analysis
- Define/obtain funding/financing options
- Apply cash-flow constraints
- Understand market capacity/risk tolerance

Other Strategic Issues
- Accommodate schedule drivers
- Identify/address key stakeholders
- Assess operational impacts

Consider:
- Conducting a Market Sounding
- Developing a preliminary risk assessment
- Addressing organizational cultural awareness and development – *Training Section 6*

- **What can you – or can't – you do in your geography?**
- **What's the best approach for your specific project?**
- **What needs to happen prior to a procurement?**

Procurement strategy
Tactics that result in a successful Award

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incentives
- Develop payment mechanism and criteria
- Establish insurance requirements

Legal Advice and Form of Contract
- Engage Legal Counsel
- Select and tailor form of contract
- Iterate the contract with the market

Risk and Opportunity Assessment
- Identify, assess, manage, and assign risk and opportunity in support of all the above

Project
Implementation that reflects your

- **How much design needs to be done?**
- **How do we evaluate qualifications and proposals?**
- **How do we select a contract and evaluate financials?**

- **What happens after Award?**
- **What do we need to do organizationally to prepare and deliver?**

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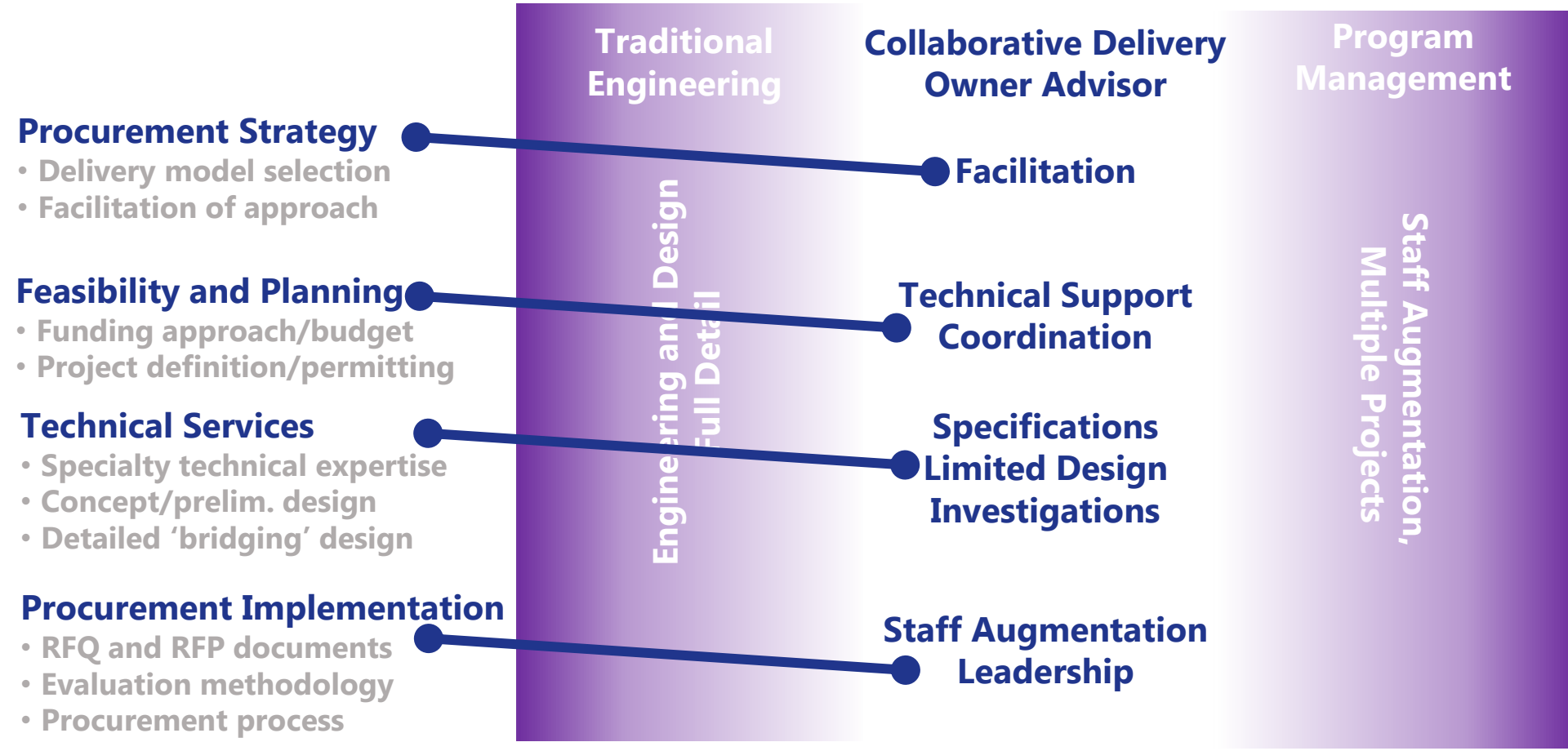
The Role of the Owner Advisor



Internal and Third-Party Advisors (OA Collaboration and Facilitation)

- Cost Estimating
- Insurance and Risk
- Procurement
- Legal Counsel
- Inspection
- Financial Advisor
- Operations and Maintenance
- Environmental Permitting

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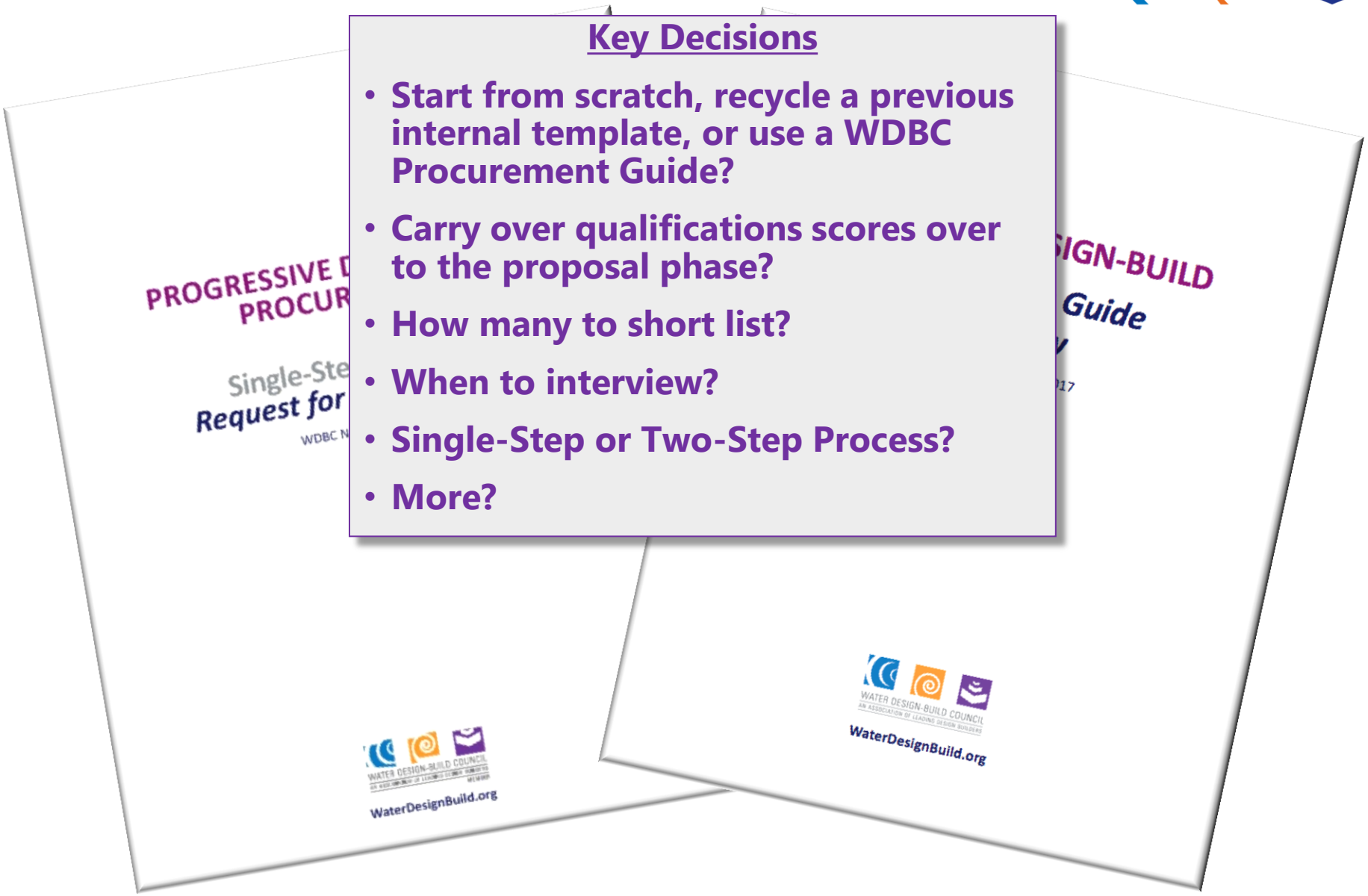
Procurement Documents



Key Decisions

- Start from scratch, recycle a previous internal template, or use a WDBC Procurement Guide?
- Carry over qualifications scores over to the proposal phase?
- How many to short list?
- When to interview?
- Single-Step or Two-Step Process?
- More?

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Single- or Two-Step Process

Single-Step

Combined Request for Qualifications and Proposal

Combined SOQ and Proposal Response

Award

Evaluated On:

- Qualifications and Experience
- Capability and Capacity
- Past Performance

Best For:

- Qualifications-based selection (no pricing)
- Best Value Selection with limited design and fee-based pricing

Single- or Two-Step Drivers

- State/local regulation
- Time and level of investment
- Potential number of Proposers
- Qualifications only versus Best Value or price-driven selection
- Level of expected design effort

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Single- or Two-Step Process

Single-Step

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- Qualifications and Experience
- Capability and Capacity
- Past Performance

Best For:

- Numerous competitors
- High level of proposal effort required
- Best Value selection with detailed solutions
- Price-based selection

Two-Step

Request for Qualifications (RFQ)	Request for Proposals (RFP)
Statement of Qualifications (SOQ) Response	Proposal Response
Short List *(Best Practice: up to three)*	**Award**

Evaluated On:

- Qualifications and Experience
- Capability and Capacity
- Past Performance

Evaluated On:

- Qualifications and Experience (carry over)
- Project Approach and Technical Solution
- Fee or Fixed-Price
- Best Value

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Procurement Documents

Key Decisions

- Start from scratch, recycle a previous internal template, or use a WDBC Procurement Guide?
- Carry over qualifications scores over to the proposal phase?
- How many to short list?
- When to interview?
- Single-Step or Two-Step Process?
- **More?**

Evaluated On:

- Qualifications and Experience
- Capability and Capacity
- Past Performance

Two-Step

Review WDBC Procurement Guides

- WDBC Procurement Guides address these and many additional Key Decisions – *use of the RFQ/RFP* Templates is optional.
- **CMAR:** WDBC Documents W-3100 and W-3300
- **Progressive DB:** WDBC Documents W-1200-2013 and W-1400-2013
- **Fixed-Price DB:** *WDBC Documents Coming Very Soon*

Evaluated On:

- Qualifications and Experience
- Capability and Capacity
- Past Performance

Evaluated On:

- Qualifications and Experience (carry over)
- Project Approach and Technical Solution
- Fee or Fixed-Price
- Best Value

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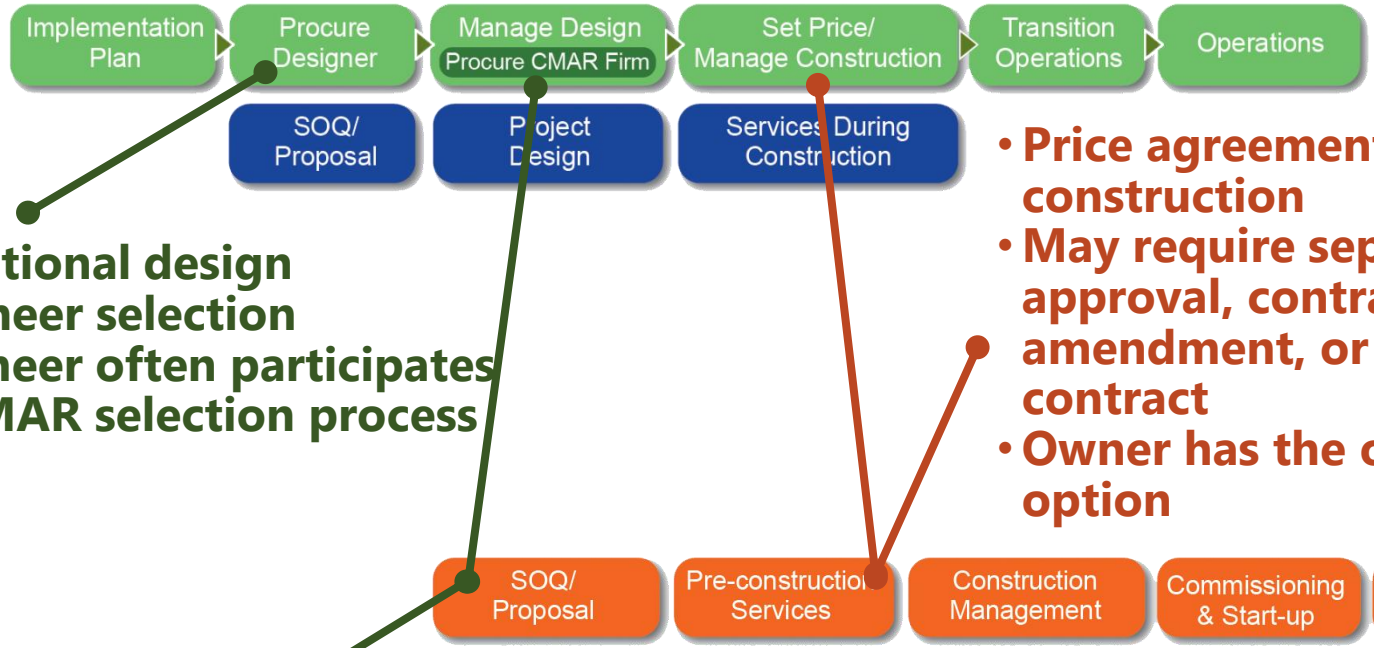
Construction Management at-Risk (CMAR) Procurement Considerations



- Traditional design engineer selection
- Engineer often participates in CMAR selection process

- Price agreement prior to construction
- May require separate approval, contract amendment, or second contract
- Owner has the off-ramp option

- One- or Two-Step Procurement
- Evaluation based on quals approach, and fee %
- Interviews of short-list are typical

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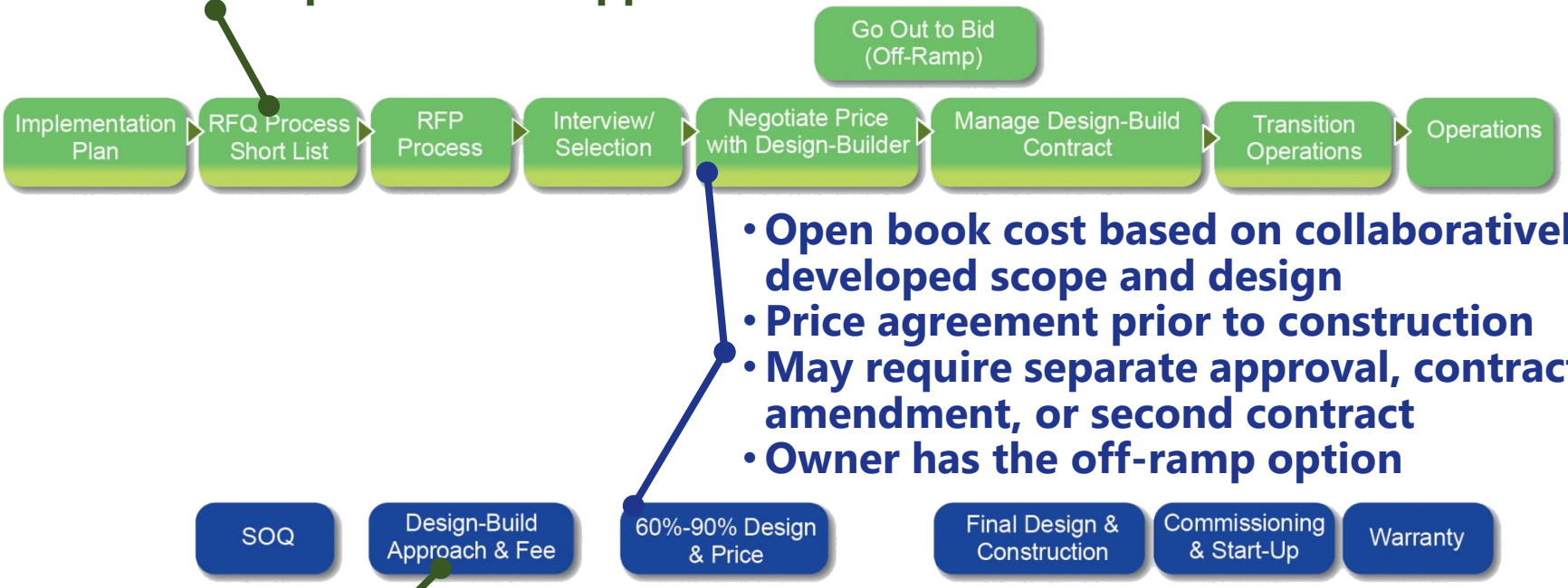
Progressive Design-Build (PDB) Procurement Considerations

- **One- or Two-Step Procurement (two-step shown)**
- **First Step is based on qualifications**
- **Short list of up to three qualified firms**
- **Second Step focuses on approach and fee**



- **Open book cost based on collaboratively developed scope and design**
- **Price agreement prior to construction**
- **May require separate approval, contract amendment, or second contract**
- **Owner has the off-ramp option**

- **Evaluation based on quals approach, and fee %**
- **Interviews of short-list are typical**

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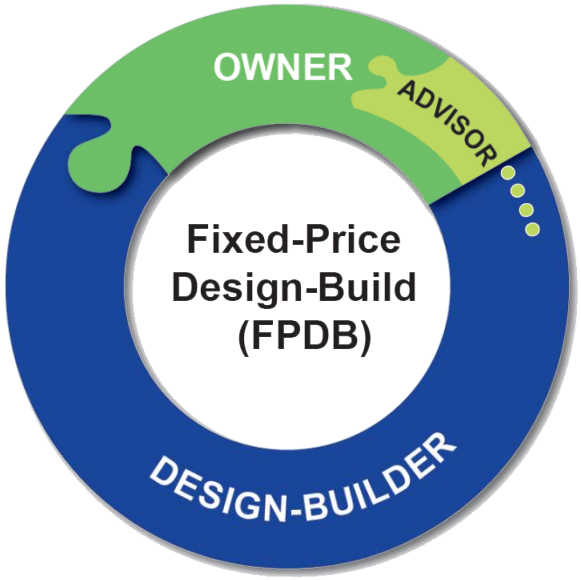
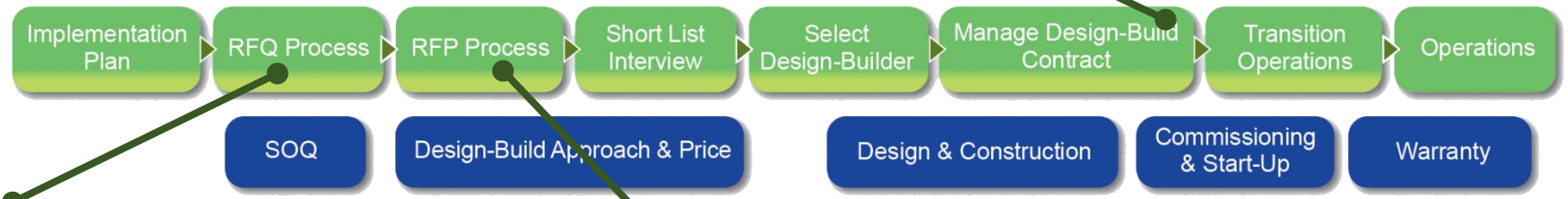
Fixed-Price Design-Build (FPDB) Procurement Considerations



Performance-based and Prescriptive Criteria



Short list based on capability, capacity, experience, references

Selection based on "best value" (technical + price)

Owner | Owner's Advisor | Design-Builder | Contractual Relationship | Embedded Relationship (not contractual, but required critical interaction)

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DEMAND FOR
Design-Build Delivery in the Water/Wastewater Sector

Research Sponsored By the Water Design-Build Council – 2016-2017

Conducted by - Kenneth I Rubin, PhD. Rubin Mallows Worldwide, Inc.

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WDBC's 2017 Research Objectives

- Determine the Size & Complexion of the Market Demand for DB Contracting in the Domestic, Municipal Water Space – 2014 to 2021
- Determine the Plans for DB Contracting in the Next 5 Years of the Nation's Top 100 Water/Wastewater Utilities.
- Establish & Document Standard Methods for Annual Updates

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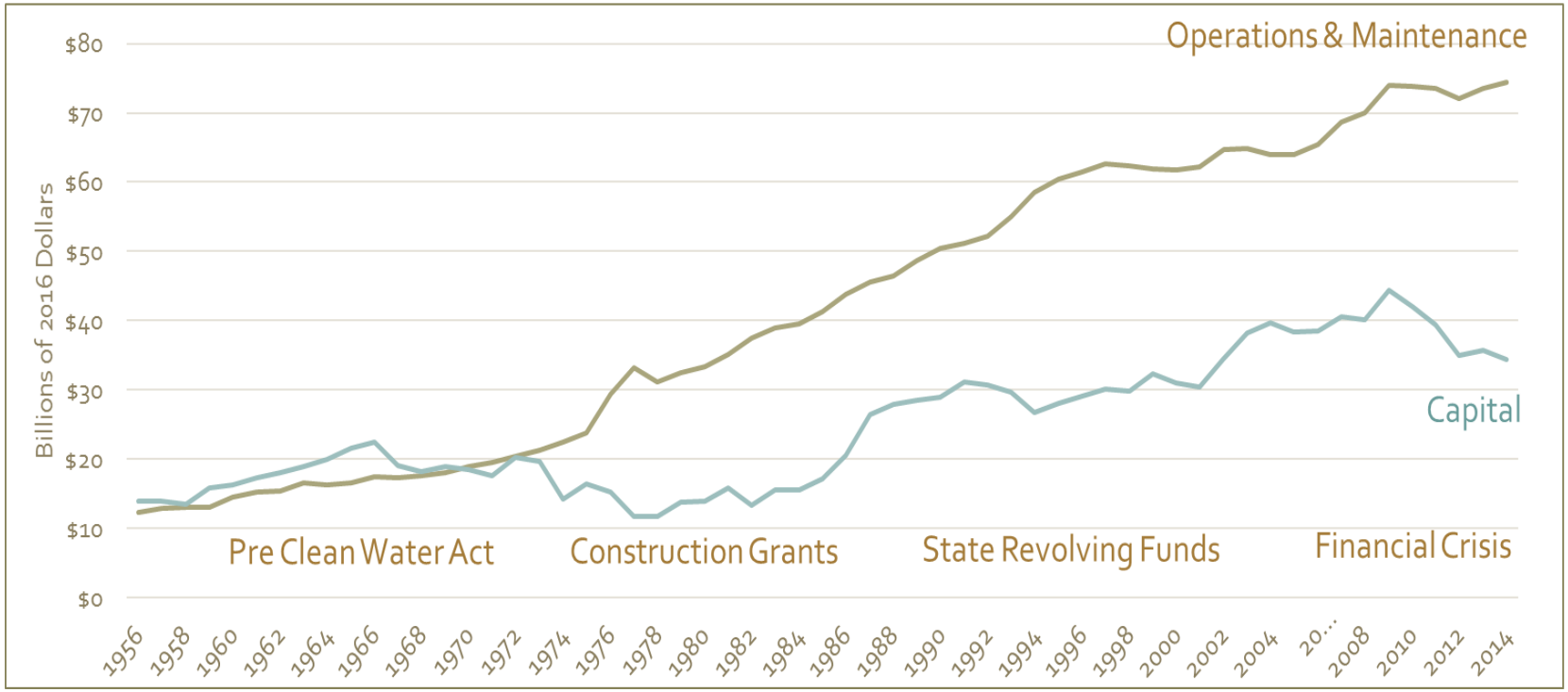
Background, Trends, & Drivers

Regulations and demographics drive the US market for water and wastewater services, but it is not immune to macro perturbations, like the financial crisis of 2008/2009, which resulted in crowding and subsequent deferral of capital investment – we believe this reversed in 2015/2016



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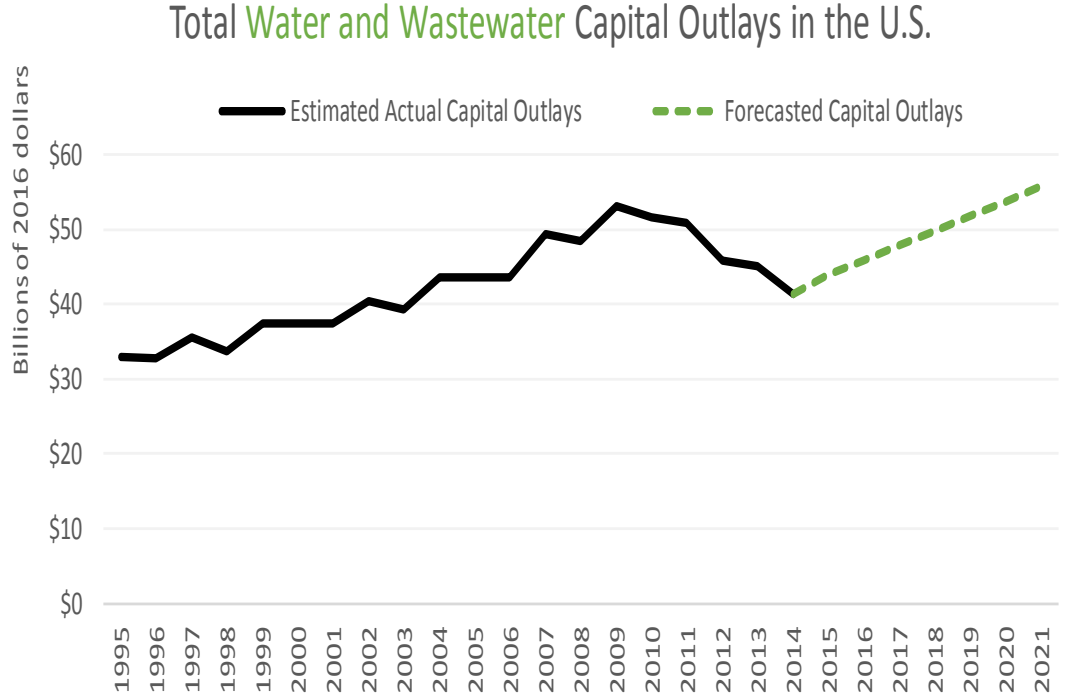
Market Capex Forecast



Data source on estimates of actual capital outlays of loval governments up to 2014: U.S. Census Bureau, Annual Survey of State and Local Government Finances and Census of Governments (1995 - 2014). Capital outlays are extrapolated to include non-governmental owned utilities by using per-capita outlay ratios. Forecasts (2015 - 2021) are based on trends in each state's capital outlays in recent years or in years prior to 2010. Real spending is shown after adjusting nominal spending to their 2016 dollar equivalent using CCI adjustment factors.

Forecasts By:

- Water vs Wastewater
- State
- Type of Project

Source Data:

- US Bureau of the Census
- State/EPA Needs Surveys

Methods:

- 7 models
- Best fit (least sq. residuals)

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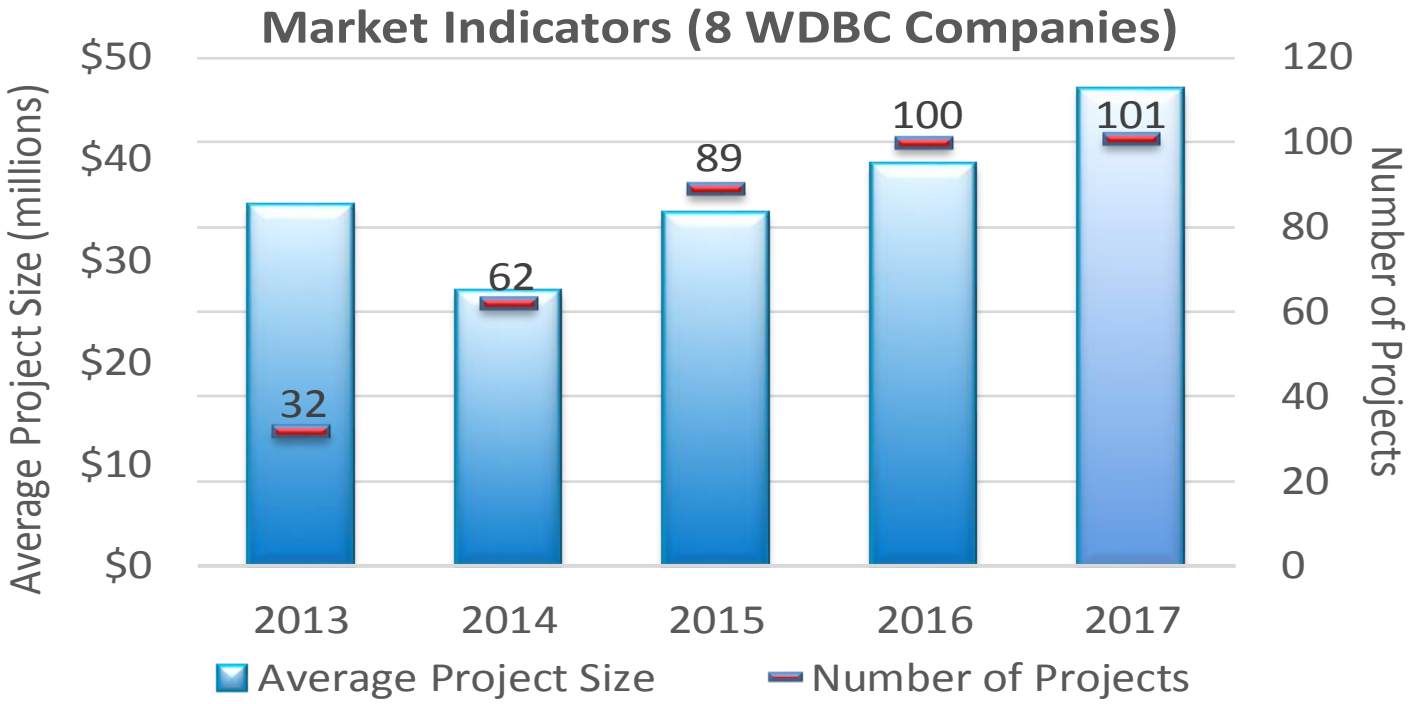
Historic Trend – 2013 to 2017

Market indicators of WDBC companies documents growth in both size and number of DB water/wastewater projects over the period 2013-2017



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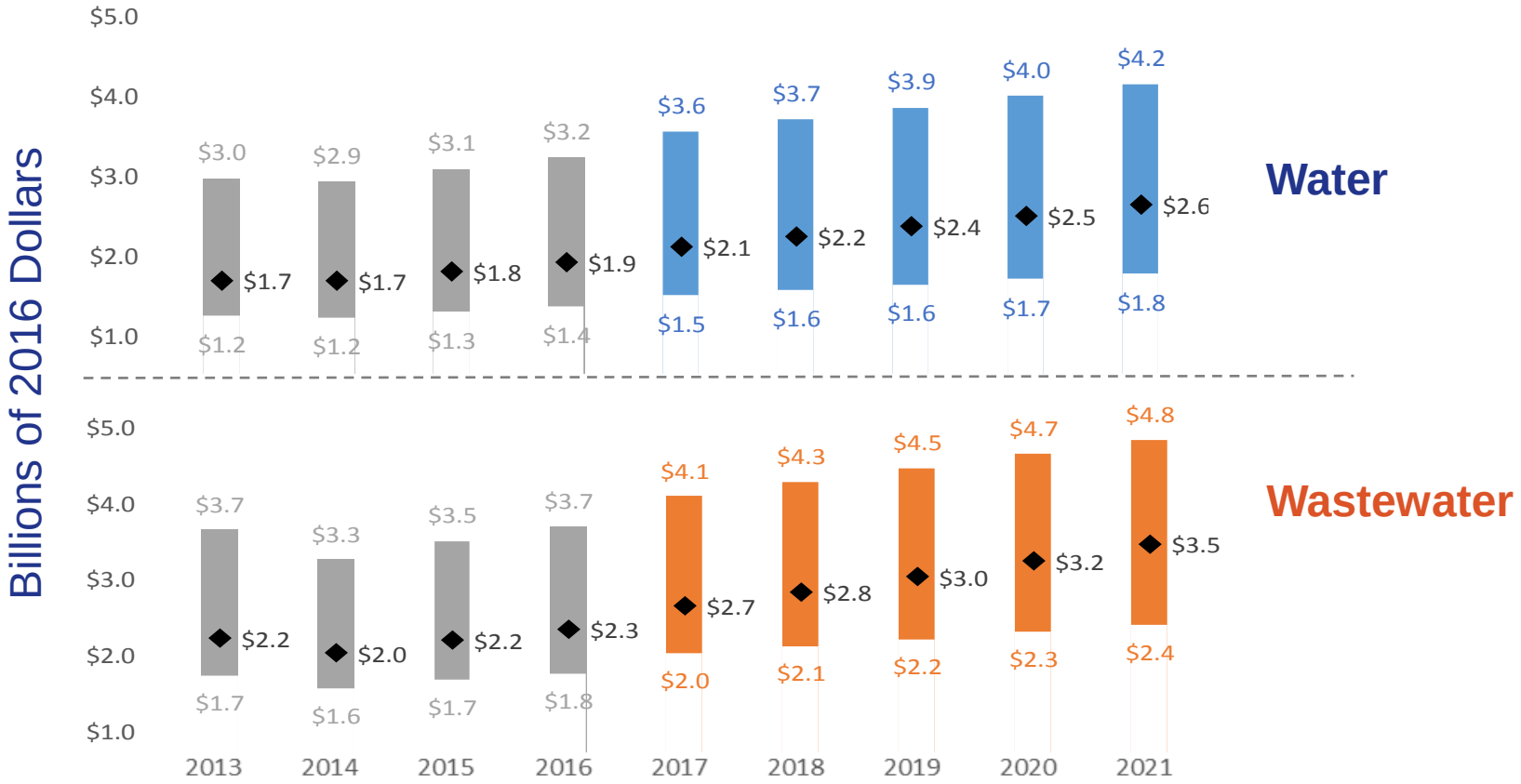
Water and Wastewater Design-Build Forecasts



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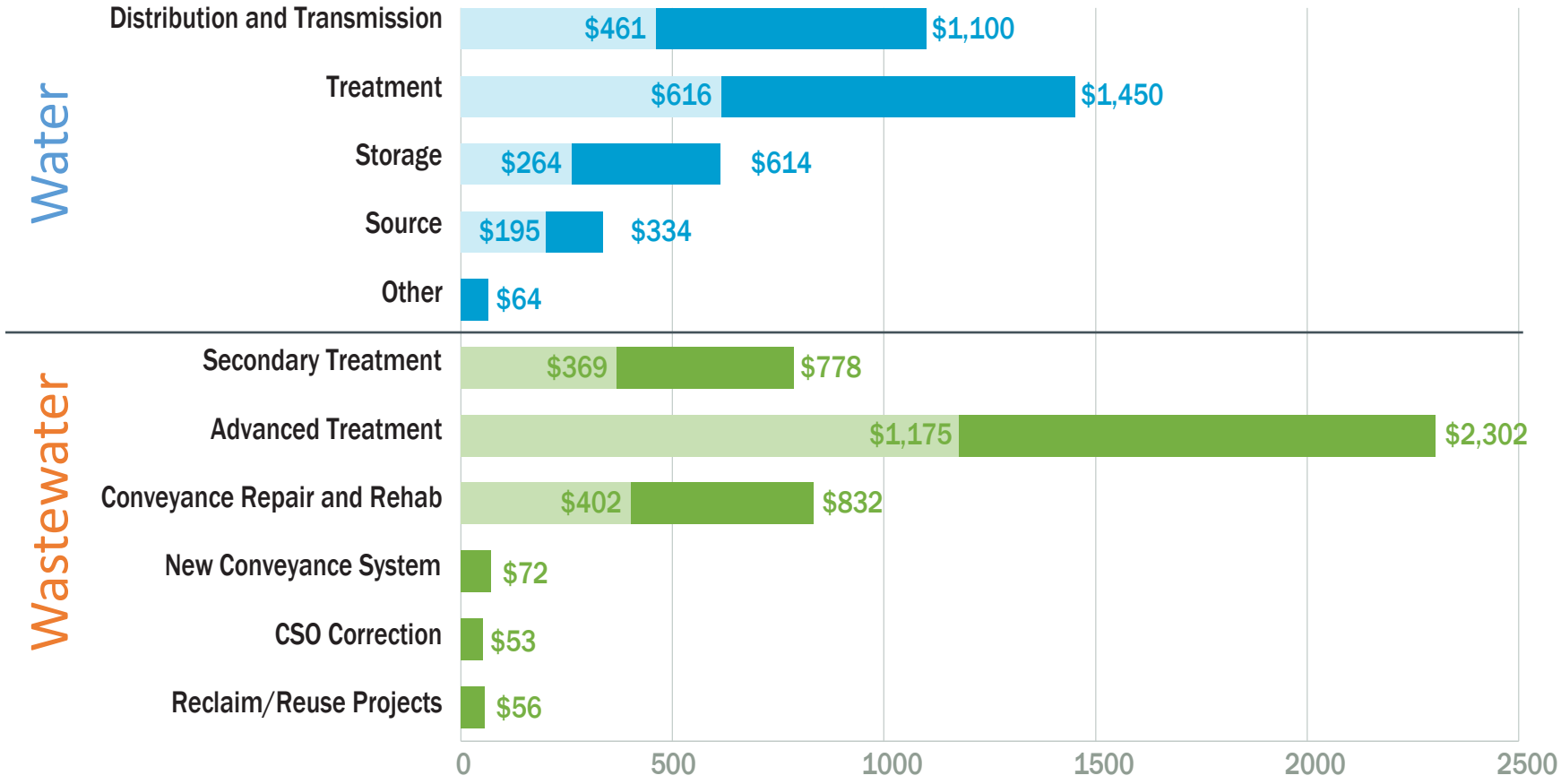
2017 Design Build Market by Type of Project



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2018 Research Report (due December)

Building on 2017 research findings, WDBC leadership expressed interest in obtaining more granular insights about the activities on the specific types of collaborative project delivery within the US water and wastewater market.

Understand recent trends in numbers of projects, dollar volume, and percent of market for:

- progressive design-build
- fixed price design-build, and
- CMAR

Answer why these trends are occurring, from the perspective of owners and suppliers – and whether they are likely to continue

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2018 Research Report (due December)

Results of the Online Survey on Key Trends and Rationale Around Three Types of Collaborative Project Delivery (CMAR, PDB, FPDB)
Findings from Executive (Owner) Interviews: What are the Trends in Using Collaborative Project Delivery and Why

Outcome of the Segmented and Updated Water/Wastewater DB Project Database on CAPEX use

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Advancing design-build delivery methods to transform the water industry—through collaborative thought leadership and education, supported by research.

Thank you - Questions

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