What's the Best Delivery Method for My Public Water Utility Capital Project?

May 6, 2026
Pacific Northwest Section AWWA Conference

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Agenda

1:10 Introduction to Project Delivery

1:45 Table Activities

2:00 Break

2:15 Table Activities

3:00 Wrap-up & Takeaways

Table Group Introductions

- ~~Life Story~~
- Favorite Sandwich
- Your role in project delivery
- What you hope to leave today’s workshop with
- Pick a volunteer to be table leader

AWWA Capital Project Delivery Committee

New Members Welcome!

- Current Membership
  - Owners, Design Professionals, Builders, Vendors, Academics
- Monthly Virtual Meetings
  - Business meetings
  - Subcommittee meetings
  - Fun & learning meetings
- ACE Workshops (sold-out three years running)
- ACE Technical Sessions
- Liaison with industry organizations

Current Committee Leaders

Chair - Trooper Smith, PE

Vice-Chair - Aliza Caraballo, PE

Secretary - Pooja Chari, PE

01

Project Delivery Selection Criteria

What Makes Us Choose a Project Delivery Method?

- Personal experience and preference
- Past successes
- Local laws and regulations
- Myth and hearsay
- Consultant influence
- Perception of best value or money to be saved
- Transferring risk to others

Organizational Decision Making

- Delivering capital projects requires organizations to make decisions
  - How to scope projects
  - How to build projects delivery teams
  - How to manage risk
  - How to manage change

Building Owners Assessment Tool (BOAT)

- https://boat.be.uw.edu/
- Developing decision making profiles
- Project delivery method criteria
- Risk assessment

- BOAT University of Washington Team
  - Dr. Carrie Sturts Dossick
  - Dr. Lingzi Wu
  - Dr. Laura Osburn
  - Prof. Renee Cheng
  - Ph.D. Student: Dan Dimitrov
  - MSc Student: Sean Zhao
- BOAT Industry Advisory Group
  - Mark Perniconi/Anne Ellis
  - Markku Allison
  - Louise Panneton
  - Laura Stagner
  - Greg Gidez

Decision-Making Profile Characteristics

- Decision-Making Culture
  - Command Culture
  - Symbolic Culture
  - Formal Culture
  - Experimental Culture
  - Learning Culture

Source: Building Owners Assessment Tool, Univ. of Washington, (https://boat.be.uw.edu/)

- Risk Tolerance

Project Delivery Method Criteria

- Delivery Timeframe
- Predictability
- Size/Scope
- Management Flexibility
- Owner Involvement
- Project Risk Tolerance
- Technical Complexity
- Early Collaboration
- Stakeholder Complexity

Using the BOAT

- Download the Excel file tool (macro-enabled)
- Pick a project delivery method
- Follow the prompts to select the decision-making characteristics
- Read the resulting risk levels identified for your combined conditions
- Reset project delivery method to check other results

Source: Building Owners Assessment Tool, Univ. of Washington, (https://boat.be.uw.edu/)

Additional Project Selection Factors

- Funding and rules specific to funding
- Procurement rules and policies
- Local, state, or federal regulations
- Permits and regulatory requirements
- Land and easement acquisition

02

Identifying Project Delivery Risk

Risk Management

- Risk register is a tool
- “Name your fear”
- Prioritizes effort with impact and probability
- Log your risks and your opportunities

Sample Project Risk Register

Sample Description of Identified Risk	Risk Origination	Risk Area	Status	Estimated Value of Risk	Probability of Occurrence	Probability of Impact	Risk Assessment Level	Risk Probability (percent)	
An 18-month schedule for this project is viewed as aggressive by the DB team. There will be an as-yet-to-be-identified daily liquidated damage assessment for both substantial and final completion.	DB Team	Prime Contract	New	TBD	Medium	Medium	High	60	
The procurement model requires the commitment of a GMP at the time proposals are submitted. The selected design-builder will be held to the proposed GMP price. As such, design change management will be essential to the success of this project.	DB Team	Cost Management	New	$500,000	Medium	Medium	High	60	$30
While the new pump station is being constructed, the existing pump stations will need to remain in service.	DB Team	Constructability	New	$100,000	Low	Low	Low	40	$40,0
Pump delivery is on the project critical path.	DB Team	Schedule Management	New	$250,000	Medium	Medium	High	60	$150,00
Cost Totals							**Aggregated Contingency**		**$490,000**

Risk Register Components

- Description, Date, Author
- Category (e.g. Commercial/Contract, Design, Construction)
- Probability Score and Impact Score
- Estimated Value of Impact
- Consequences of Occurrence
- Risk Owner or Allocation
- Mitigation Measures

Sources of Project Risk

- Non-standard contracts
- Land and easement acquisition
- Project performance
- Technical requirements
- Site conditions
- Project design
- Schedule
- Permitting and environmental approvals

Litigiousness has Made Us Risk Averse



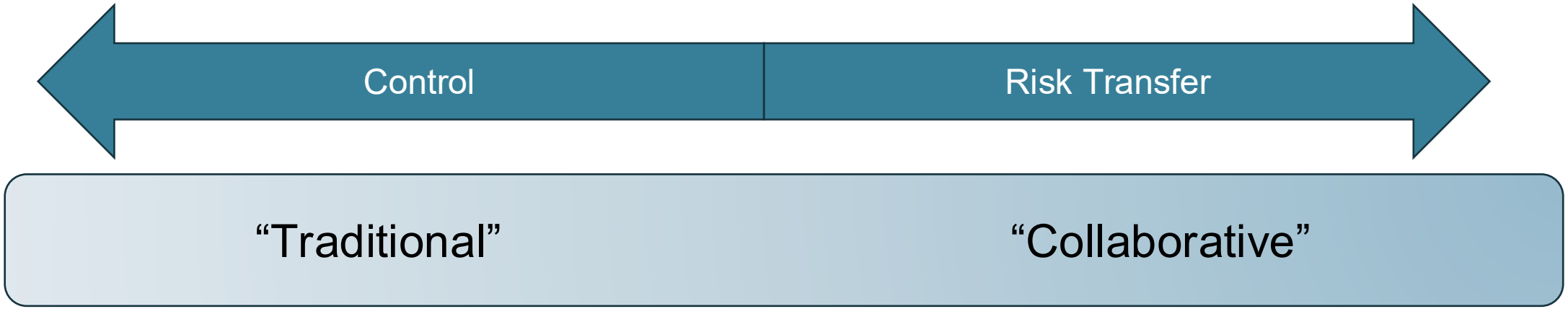
Progress?



Issues with Shifting Risk to the Builder

- Owners and design professionals become blind to the implication of the design decisions
- Perpetuating a culture of risk transfer ‘no matter what’
- Increases project cost by an unknown factor
- The contractor that takes the riskiest approach is likely to be low bidder

“Traditional” vs “Collaborative” Delivery



- Defined **deliverables**
- Owner holds all risk for performance and budget
- Owner in the middle of all disputes

- Defined **performance**
- Risk follows performance
- Owner not stuck in the middle if there is only one contract

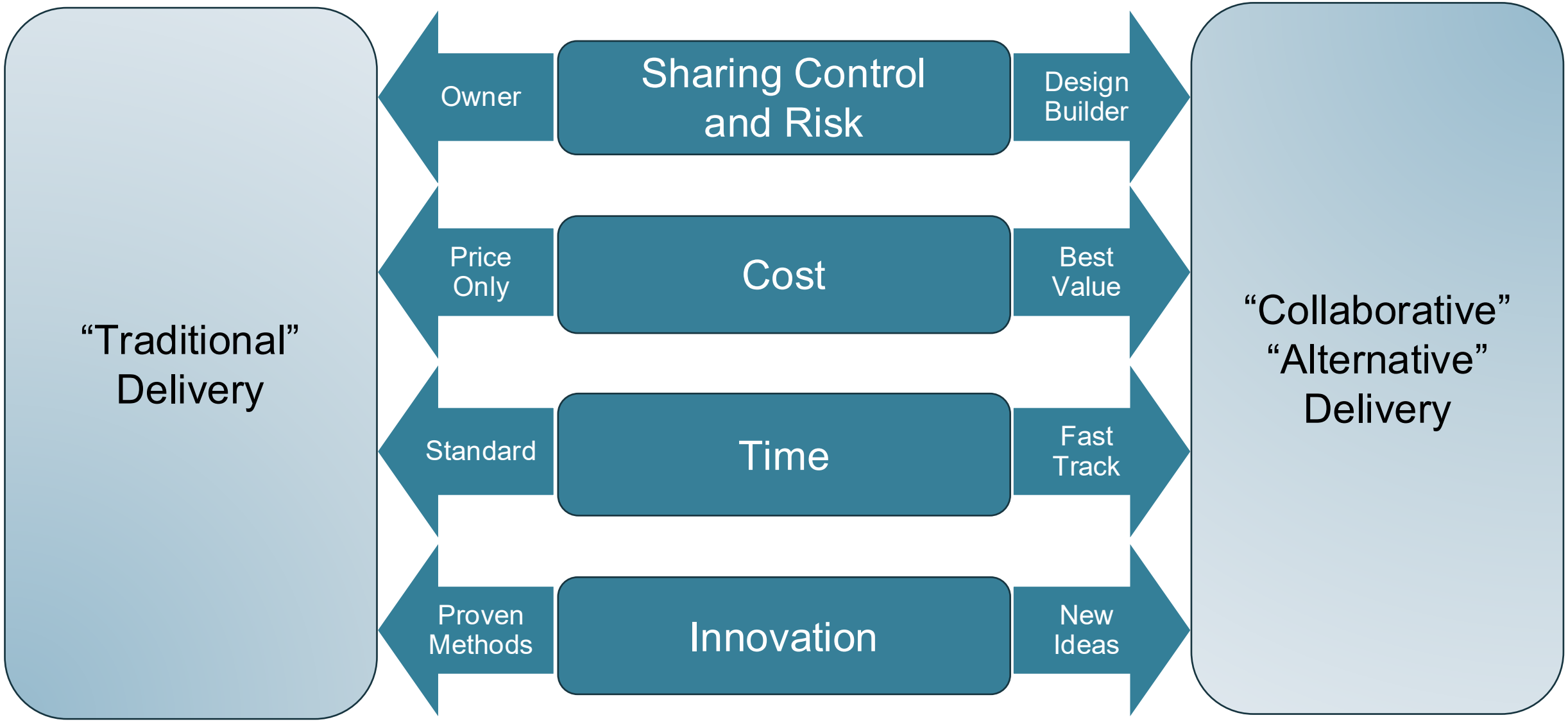
03

Common Project Delivery Methods

Project Delivery Methods

- Design-Bid-Build (DBB)
- Construction Manager at Risk (CMAR)
- Progressive Design-Build (PDB)
- Fixed-Price Design-Build (FPDB)

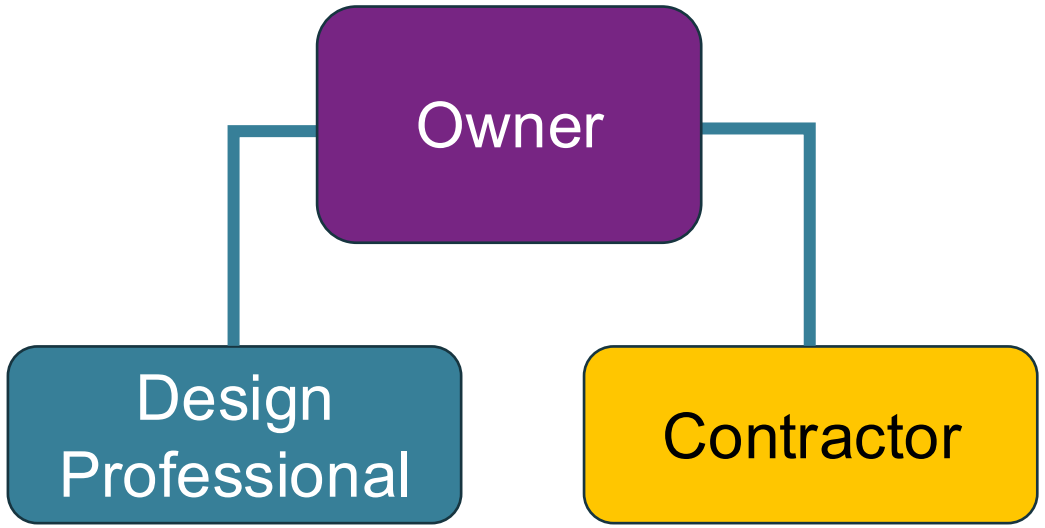
“Traditional” vs “Collaborative” Delivery



Design-Bid-Build

DBB

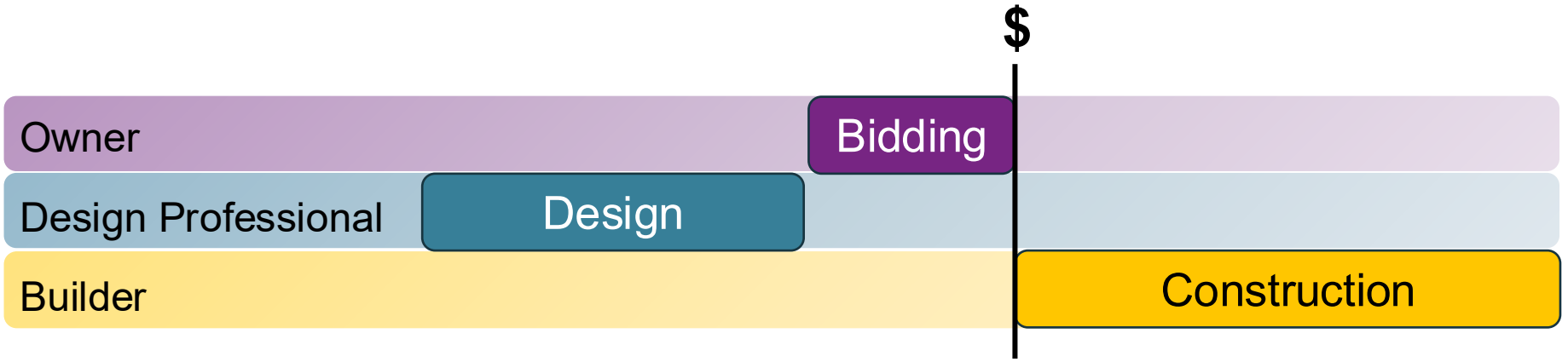
- “Traditional” participants
- Widely accepted
- Owner holds 2 contracts
- Selection of:
  - Designer Qualifications
  - Contractor Low Price
- Owner maintains control of design



Design-Bid-Build

DBB

- Linear progression
  - Design complete prior to bidding
  - Bidding complete prior to construction

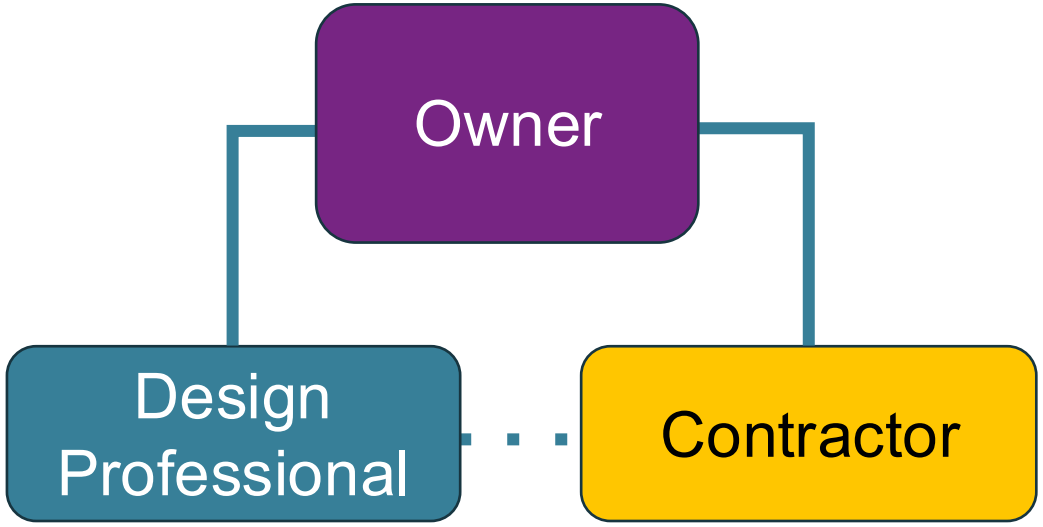


$ = Price Confidence

Construction Manager at Risk

CMAR, CM/GC, or GC/CM

- Owner holds 2 contracts
- Selection of:
  - Designer □ Quals
  - Contractor □ Quals + Fee
- Owner maintains control of design
- CMAR provides preconstruction services



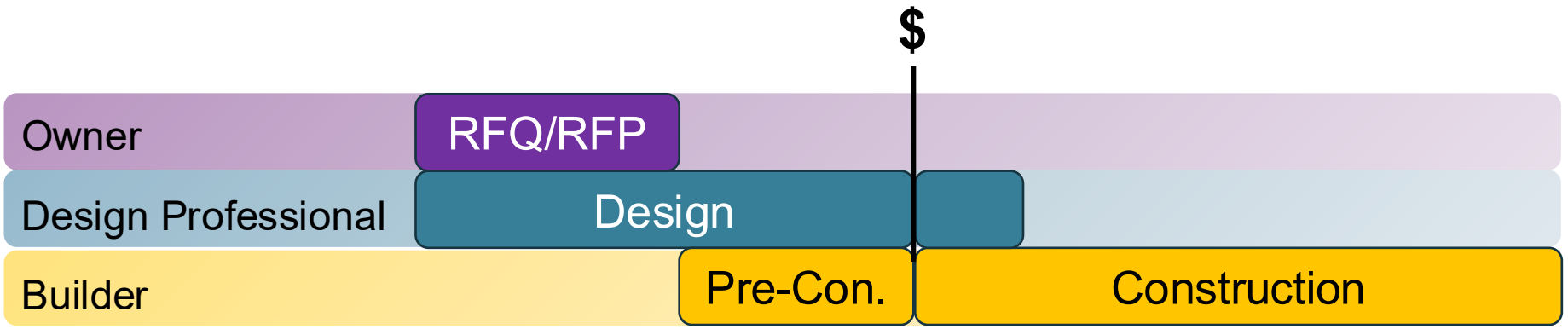
What are “Preconstruction Services?”

- Provide constructability review
- Produce early cost and schedule estimates
- Develop construction packages
- Coordinate with vendors for long-lead materials
- Bid packages or self-perform
- Negotiate Guaranteed Maximum Price (GMP)
- Typically GMP at 60% to 90% design milestone

Construction Manager at Risk

CMAR, CM/GC, or GC/CM

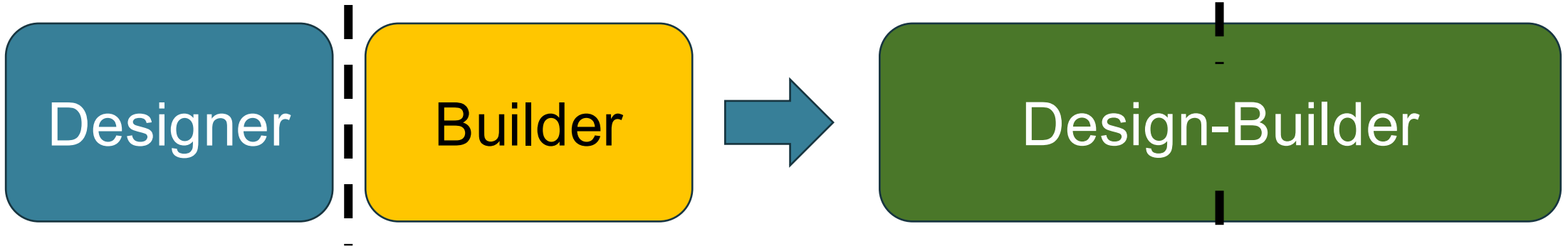
- Preconstruction overlaps design phase
- Project benefits from early constructability input



$ = Price Confidence

Shift to Design-Build

- Owner wants single entity to guaranty price, schedule, quality, risk, and performance



Design-Bid-Build

Construction Manager at Risk

- Owner fills the gap
- Traditional Risk Allocation
- **Defined Deliverables**

Progressive Design-Build

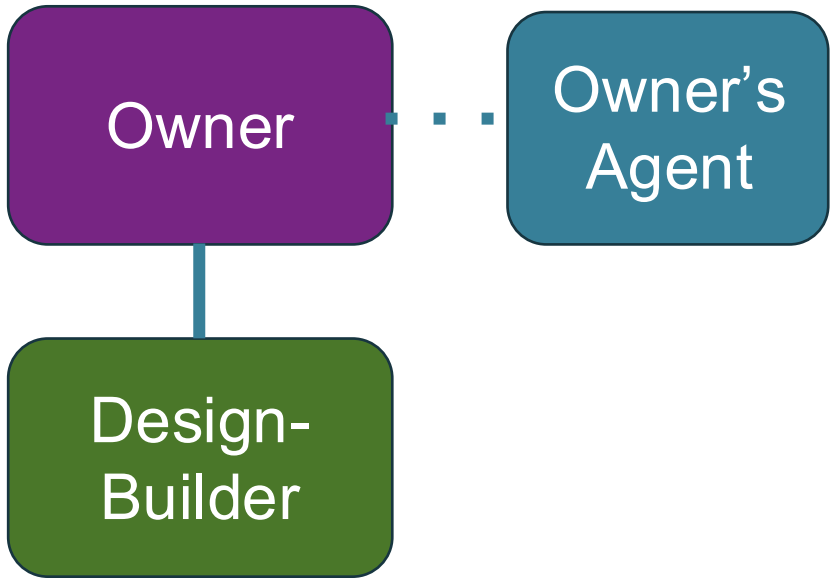
Fixed-Price Design-Build

- No gap
- Performance-Based Risk Allocation
- **Defined Project Performance**

Progressive Design-Build

PDB

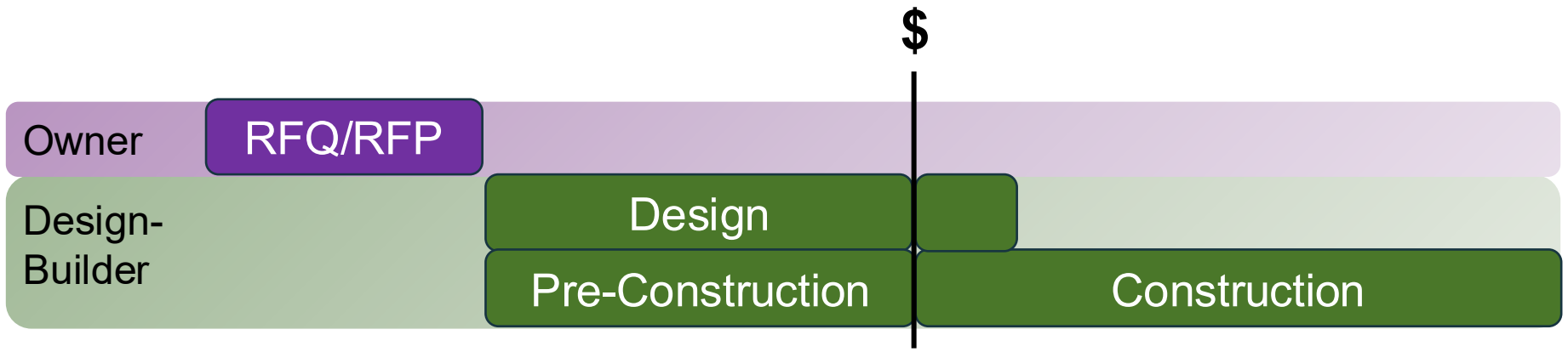
- Defined project requirements
- Design to budget
- Design developed progressively
- GMP, Lump Sum, and Shared Savings options
- Selection of:
  - Design-Builder Quals + Fee
  - Subsequent GMP Negotiation



Progressive Design-Build

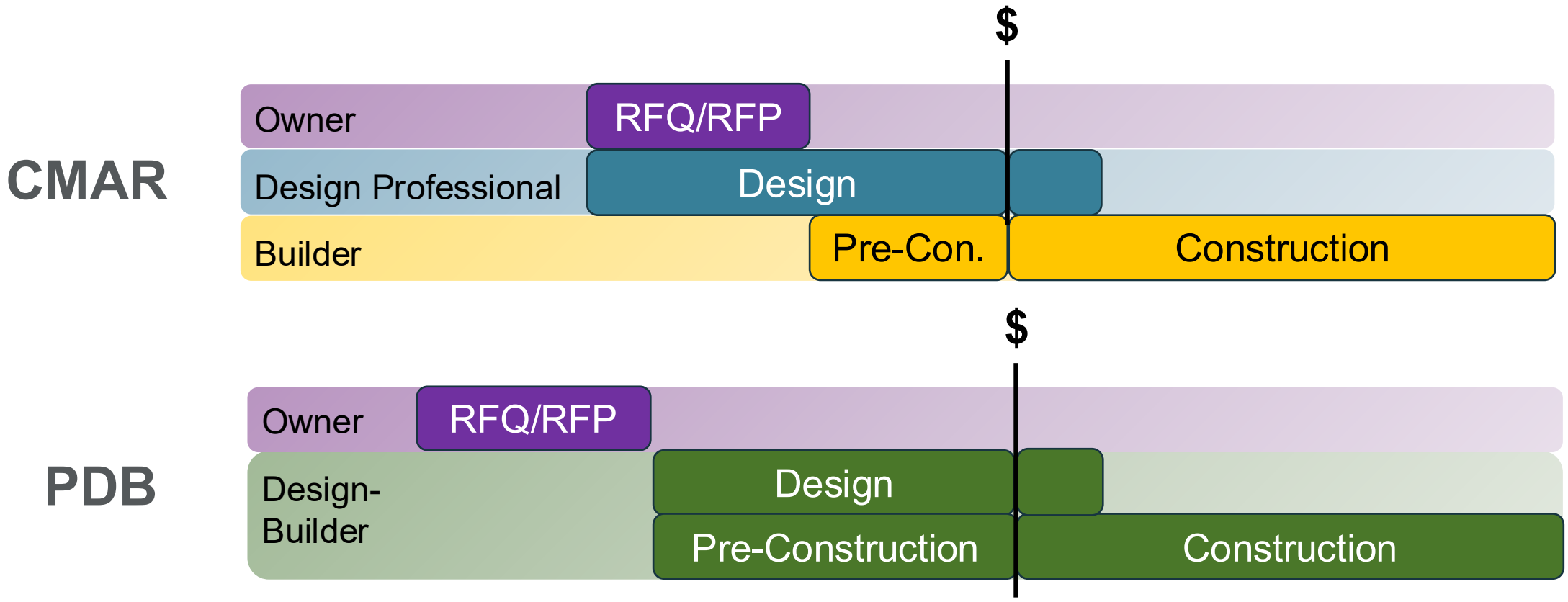
PDB

- Phased contract with negotiated GMP
- Concurrent design and pre-construction services
- Construction can start before design is complete
- Hard-bid “off-ramp” if construction pricing not acceptable



$ = Price Confidence

PDB compared to CMAR



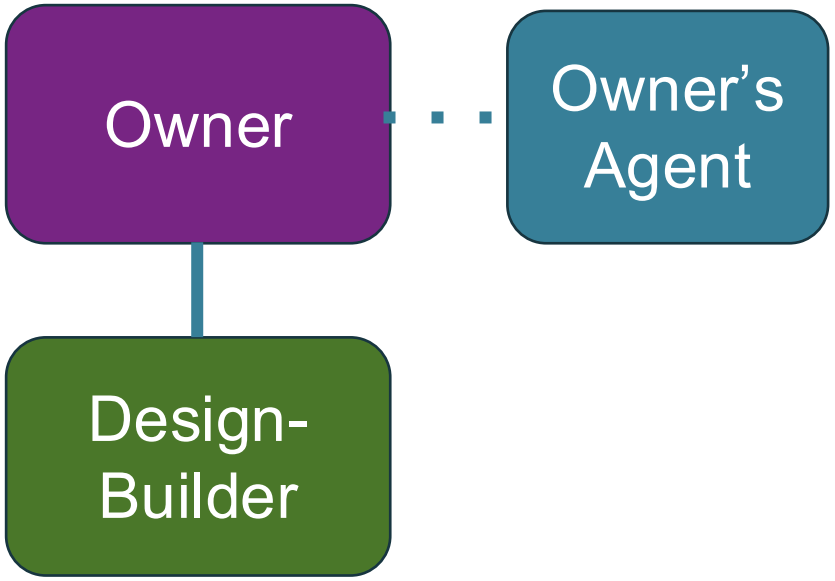
$ = Price Confidence

Fixed-Price Design-Build

FPDB

- Defined project requirements
- Design to budget
- Selection of:
  - Design-Builder

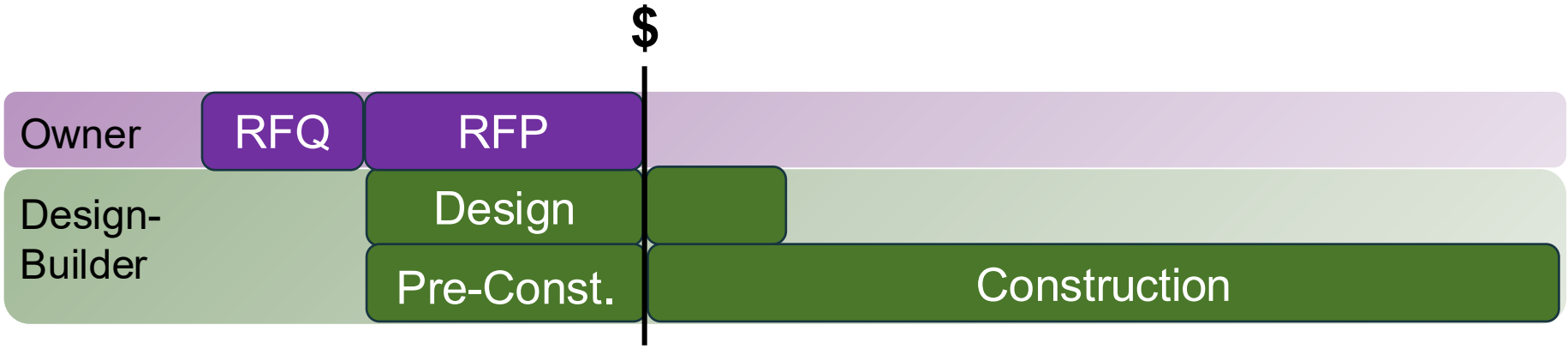
Quals + Price = Best Value



Fixed-Price Design-Build

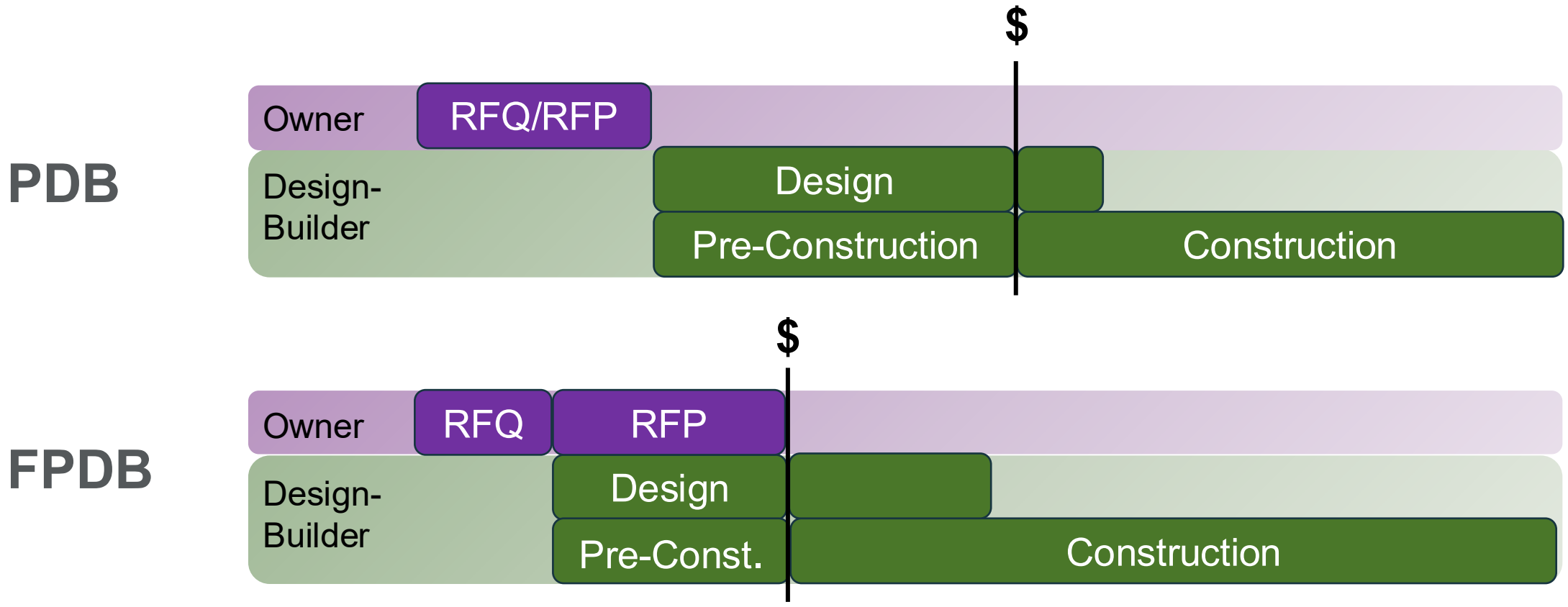
FPDB

- Price certainty at the time of award
- Shorter overall project schedule



$ = Price Confidence

PDB compared to FPDB



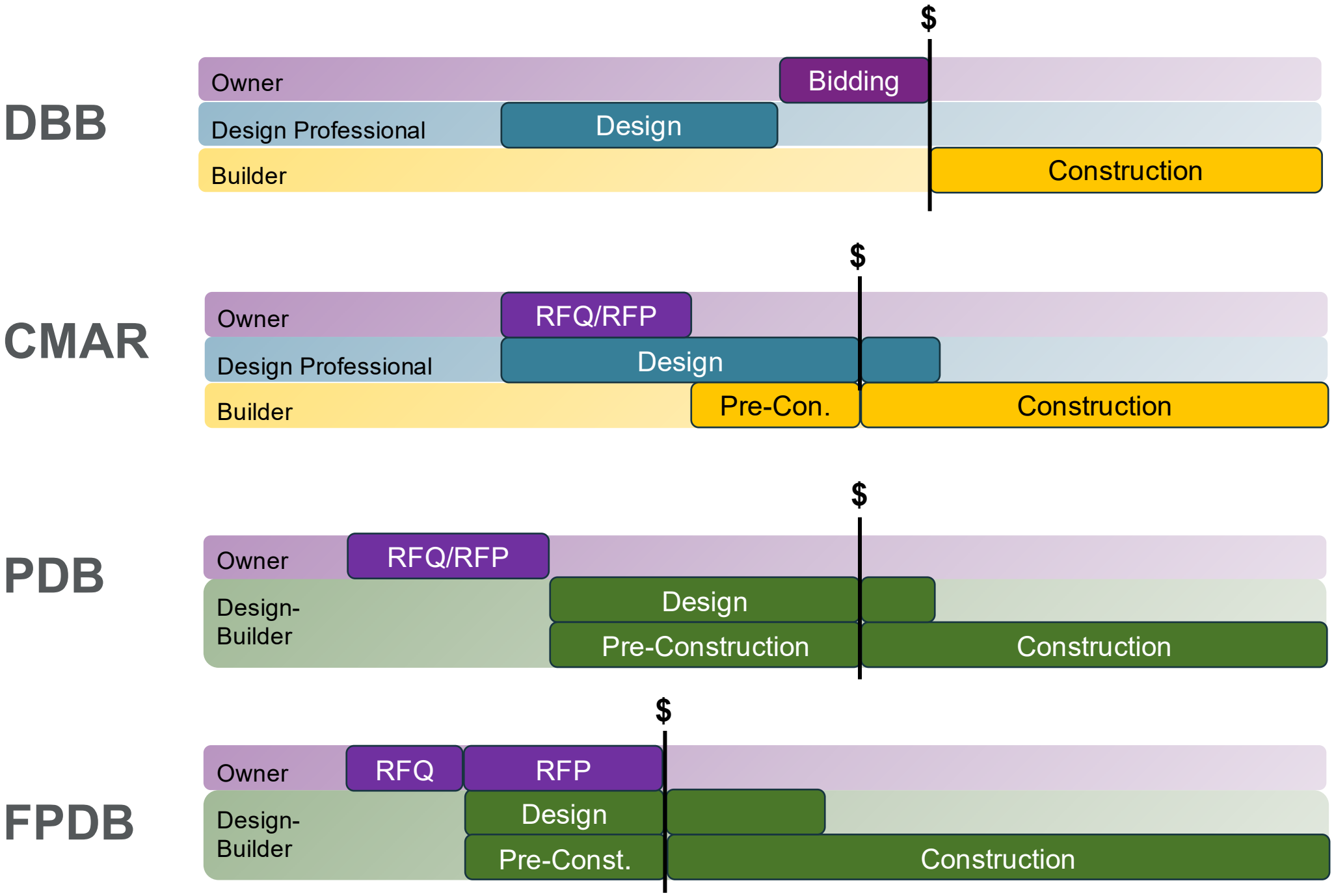
Why PDB or FPDB?

PDB

- Project lacks definition and Owner wants to be directly involved in design process
- Owner wants to fast track project
- Owner wants to execute the work in multiple phases
- Owner's informed decision-making results in better management of overall cost and project outcomes
- Owner desires cost transparency

FPDB

- Owner has defined project requirements and scope of work
- Owner wants price certainty at the time of award
- Project will benefit from innovation
- Cost Savings:
  - True integration
  - Less design
  - Less construction administration
  - Shorter overall schedule
  - Less agency staff time


DBB
$
Owner
Bidding
Design Professional
Design
Builder
Construction
CMAR
$
Owner
RFQ/RFP
Design Professional
Design
Builder
Pre-Con.
Construction
PDB
$
Owner
RFQ/RFP
Design-
Builder
Design
Pre-Construction
Construction
FPDB
$
Owner
RFQ
RFP
Design-
Builder
Design
Pre-Const.
Construction

Stretch Break

04

Activity:
Selecting a Project Delivery Method

Activity

Selecting a Project Delivery Method

- Read Project #1. Discuss with your table team.
- Identify risks
- Develop risk register and prioritize
- As a table team, choose your preferred project delivery method
- Report out on your delivery method decision and additional assumptions you made.

Risk Register

AWWA PNWS 2026 Conference – Engineering Pre-Conference Seminar - Wednesday, May 6, 2026

Project Delivery Risk Register

Table Activity No. _____

ID	Risk Description	Probability	Impact	Mitigation Measures
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				

Activity: Selecting a Project Delivery Method

- Read Project #1. Discuss with your table team.
- Identify risks
- Develop risk register and prioritize
- As a table team, choose your preferred project delivery method
- Report out on your delivery method decision and additional assumptions you made.

Timing: Work for the next 15 Minutes

15-minute Break

Activity Report-Out

- Report out on your delivery method decision and additional assumptions you made.

Activity: Selecting a Project Delivery Method

- Read Project #2. Discuss with your table team.
- Identify risks
- Develop risk register and prioritize
- As a table team, choose your preferred project delivery method
- Report out on your delivery method decision and additional assumptions you made.

Timing: Work for the next 15 Minutes

Activity Report-Out

- Report out on your delivery method decision and additional assumptions you made.

05

Industry Resources

Industry Resources

- Industry-Standard Contract Documents
- Guides
- Manuals and Handbooks
- Training

Why Use Industry Standards?

- Comprehensive (Nothing missing)
- Created and peer-reviewed by industry experts
- Updated regularly (between 5 and 10 years, depending on publisher)
- Reflect changes in industry practices
- Consistency in the location of information
- Tested for years on real projects (EJCDC goes back 50 years!)
- Interpreted by courts in various jurisdictions
- Balanced and fair to all parties (Risk allocation)

Why Not Use Industry Standards?

- Owner has a long-standing custom contract
- Type of available standard contract does not fit the project type
- Local contractor familiarity with existing Owner documents
- Owner’s contracting policies are not likely to be easily changed
- Getting new contract documents approved could take a long time

Who Publishes Industry Standard Contract Templates?

for the four primary project delivery methods

	Procurement	Design-Bid-Build	Construction Manager at Risk	Progressive Design-Build	Fixed-Price Design-Build
EJCDC					
WCDA					
DBIA					

American Water Works Association

AWWA

- Capital Project Delivery Committee
- Manual of Practice M47
  - 3rd Edition coming late 2026

Engineers Joint Contract Documents Committee

EJCDC

- Standard Contract Document Templates
  - Construction Series (C-Series, for Design-Bid-Build)
  - Construction Manager as Advisor (CMa-Series, for Design-Bid-Build)
  - Construction Manager at Risk (CMAR-Series)
  - Design-Build (DB Series)
  - Engineering (E-Series, for Owner contracts with Designers)
  - Procurement (P-Series)
- Commentaries on Each Series – free to download

Water Collaborative Delivery Association

WCDA

- Resources
  - Water and Wastewater Collaborative Delivery Handbook
  - CMAR Procurement Guide
  - PDB Procurement Guide
  - FPDB Procurement Guide
  - Procurement Implementation Plan
  - Guide to Owner Advisors
- Standard Contract Document Templates
  - CMAR RFQ/RFP and Agreement

Design-Build Institute of America

DBIA

- Resources
  - Design-Build Done Right™: Universal Best Practices
  - Project Delivery – A Design-Build Done Right Primer
  - Selecting and Using an Owner Advisor in Design-Build
  - Water and Wastewater Design-Build Handbook
  - Water/Wastewater Sector Design-Build Best Practices
  - DBIA Manuals of Practice (Many different manuals)
- Standard Contract Document Templates
  - Design-Build RFQs, RFPs, and Agreements

Other Industry Resources

- Construction Specifications Institute (CSI)
  - MasterFormat, SectionFormat, & PageFormat
- Construction Management Association of America (CMAA)
  - Dozens of construction management guides
- Project Management Institute (PMI)
  - Project Management Body of Knowledge (PMBOK)

Contacts

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AWWA Volunteer Application
https://www.awwa.org/volunteer/volunteer-application/

More Sessions on Capital Project Delivery

May 7 Thursday

7:30am, Room 407, *AWWA Manual M47*

May 8 Friday

10:15am, Room 406, *What is EJCDC?*