BURNS McDONNELL

Mitigating Risk with Phased Design-Build

TEA Conference 2026

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Andrew Underwood

Preconstruction Manager

Experience includes:

- Managing field operations
- Building bridges
- Solving construction problems
- Leading crews
- Estimating & Preconstruction
- Delivering complex infrastructure

Field Engineer → **Superintendent** → **PM** → **Estimator** → **Preconstruction Manager**

Project Experience Drives Perspective

3 Big Ideas

Risk is captured in project cost

Construction ultimately realizes project decisions – both the good and the bad

Understanding and mitigating risks before construction is crucial for project success

Uncertainty is Reflected in Project Cost

Source of Uncertainty	What the Estimator Sees	Result
Scope still evolving	Unknown quantities, undefined features	Higher contingency
Constructability unknown	Multiple means & methods possible	Pricing conservative options
Geotechnical uncertainty	Unknown pile lengths, rock, groundwater	Additional risk allowance
Utility / ROW uncertainty /Third Party	Unknown relocation phasing/Third Party conflicts	Schedule contingency and cost contingency
Market uncertainty	Material pricing, labor availability	Escalation and procurement contingency
Risk allocation unclear	Unknown ownership of risks	Contingency carried by someone
Schedule uncertainty	Unknown durations or sequencing	Acceleration risk and indirect cost contingency

Construction ultimately realizes project decisions

both the good and the bad

Early Decision	How Construction Realizes It
Utility coordination wasn't fully understood	Crews sit idle waiting on relocations. Schedule slips.
Temporary traffic control wasn't thought through	Additional MOT phases, night work, public frustration, added cost.
Constructability wasn't considered	Cranes can't reach, falsework doesn't fit, access roads are inadequate.
Foundation assumptions were optimistic	Different soils, redesign, additional piles, larger drilled shafts.
Right-of-way risks weren't resolved	Contractor re-sequences work, loses efficiency, incurs delays.
Environmental permitting assumptions changed	Seasonal restrictions impact schedule and means & methods.
Risk allocation wasn't realistic	Claims, change orders, contingency consumed.
Market conditions weren't understood	Bid prices exceed engineer's estimate.
Schedule assumptions weren't validated	Critical path changes, overtime, acceleration costs.
Scope wasn't fully defined	Design changes continue into construction.
Priorities weren't aligned	Late scope additions after design advances.
Bridge erection sequencing wasn't evaluated	Fabrication and erection become more difficult and expensive than anticipated.

Understanding and Mitigating Risks/Uncertainty <u>before</u> Construction is beneficial for everyone

What if owners didn't have to wait until the next design milestone to understand project risk?

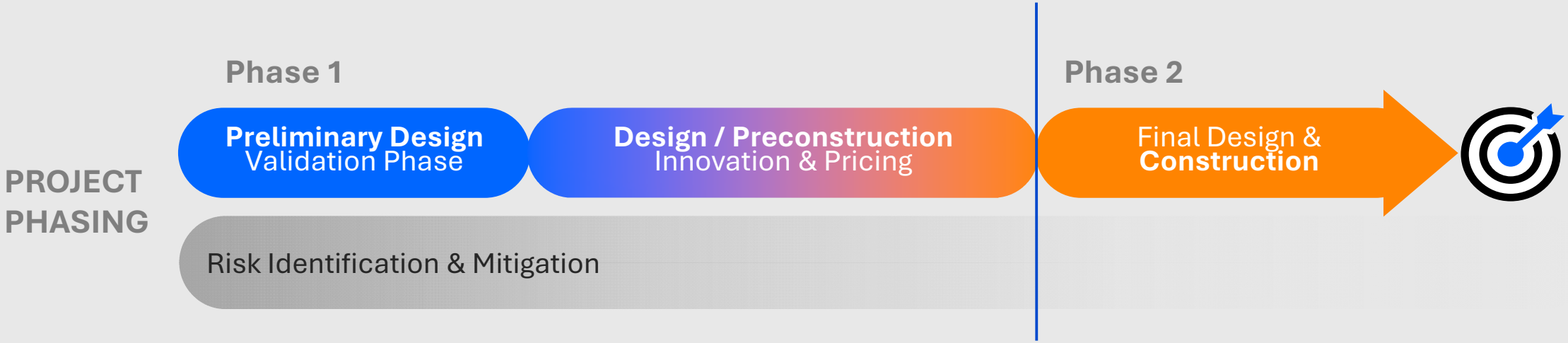
What if they could validate assumptions before they became commitments?

What if cost professionals, designers, and construction experts could work through uncertainty together?

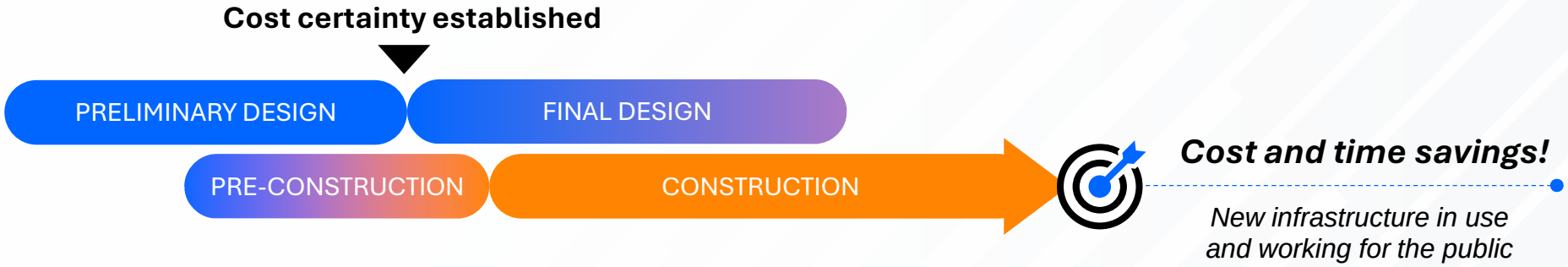
- Would owners make different decisions?
- Would projects develop differently?
- Would project and owners benefit?

In my experience…the answer is yes.

Retiring Risk Using PDB

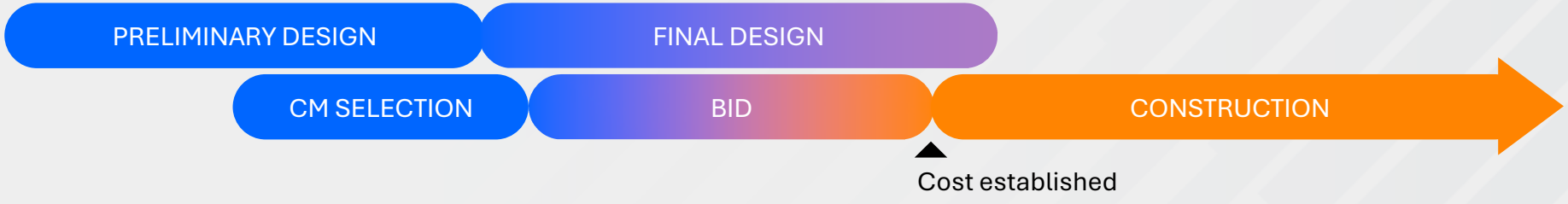


PHASED DESIGN-BUILD

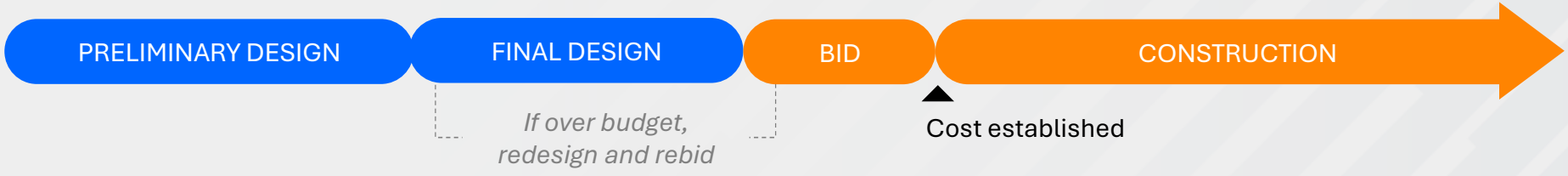


DESIGN-BUILD

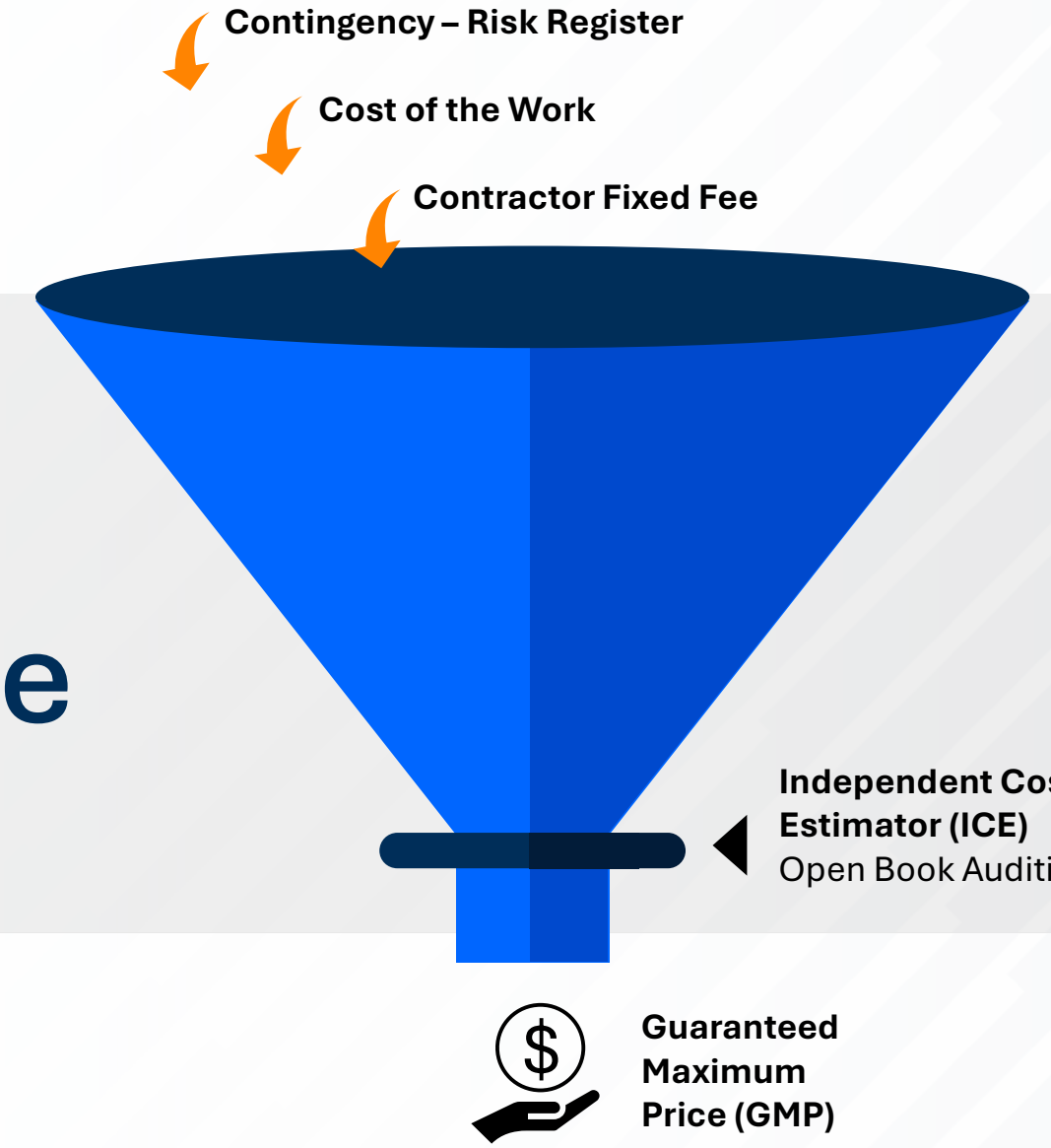
CMGC



DESIGN-BID-BUILD



Guaranteed Maximum Price Development



Risk Register

10” NRDJ Concrete Pavement Example

DESIGN-BID-BUILD & DESIGN-BUILD

Cost of Work

Contingency

Markup + G&A

$78 / SY

PHASED DESIGN-BUILD

Cost of Work	$59 / SY
Contingency *	$10 / SY
Markup + G&A	$9 / SY

$78 / SY

What Makes PDB Different: Owner's Value of Using PDB

When to Consider Using PDB

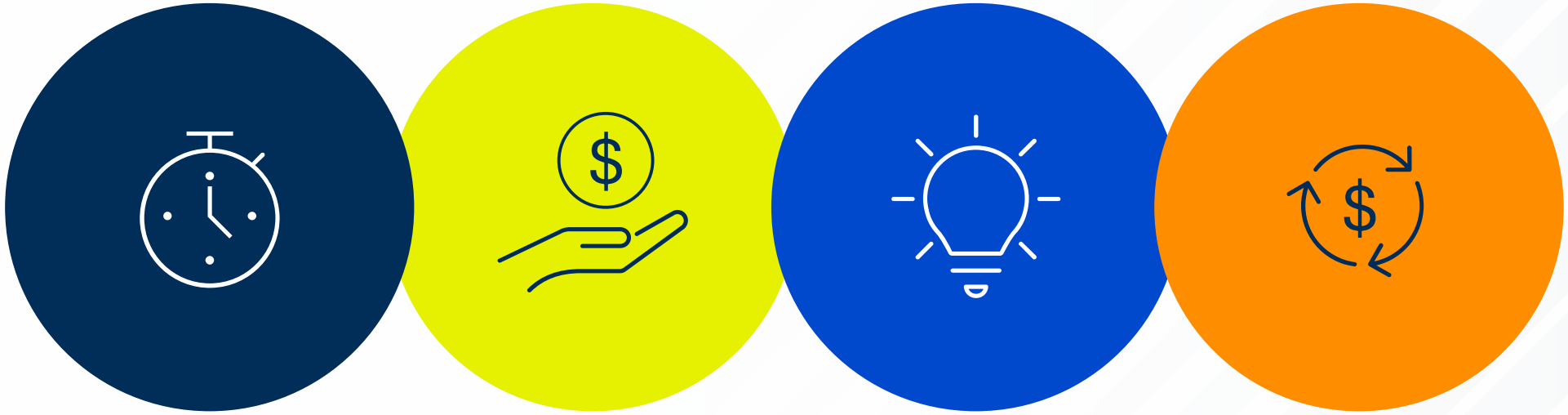
Project funding allocated over multiple fiscal cycles

Minimal design effort completed to date

Speed to market is a priority

Project components have significant lead times

Maximum Value to the Owner



Faster, accelerated timeline

Cost certainty and opportunity to off-ramp

Innovation and improved final product

Maximum scope incorporated into project budget

Let's Continue the Conversation

- Discuss your upcoming projects and delivery goals
- Determine if Phased Design-Build is the right fit
- Learn from our procurement and implementation experience
- Explore how we've helped advance PDB legislation and owner adoption
- Connect with our national Phased Design-Build team